Environmental Management Programme WEF: Phase 1

FE Overberg (Pty) Ltd
2nd Floor, Cape Town Cruise Terminal Building
V&A Waterfront, Cape Town, 8001
+27 (0)21 418 3940 • info@redrocket.energy
www.redrocket.energy

Reg No: 2020/787250/07



FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE OVERBERG WIND ENERGY FACILITY, LOCATED SOUTHWEST OF THE TOWN OF SWELLENDAM, WESTERN CAPE PROVINCE

APPLICANT: FE OVERBERG (RF) (PTY) LTD
CONTACT: MAGDALENA LOGAN

terramanzi
GROUP (PTY) LTD

people. planet. prosperity.

tel: +27 21 701 5228
fax: +27 86 558 1213
mobile: +27 82 575 3800

email: info@terramanzi.co.za
website: www.terramanzi.co.za

postal: postnet suite 211, private bag X26, tokai, 7966

OCTOBER 2024

Contents

1. INTRODUCTION 8
1.1 EXECUTIVE SUMMARY 8
1.2 PROJECT COMPONENTS 14
1.3 ENVIRONMENTAL MANAGEMENT PROGRAMME 28
2. STRUCTURE OF THIS EMPR 30
3. TERMS OF REFERENCE 31
3.1 EAP DETAILS, EXPERTISE AND INDEPENDENCE 31
3.2 DEVELOPMENT CONSENT CONDITIONS 32
3.3 POLLUTION CONTROL APPROVALS 32
3.4 STATUTORY OBLIGATIONS 32
3.4 CONTRACT OBLIGATIONS 33
3.5 ENVIRONMENTAL RISKS 33
3.6 ENVIRONMENTAL OPPORTUNITIES 35
4. ENVIRONMENTAL OBJECTIVES, TARGETS AND MEASURES 36
4.1 PRE-CONSTRUCTION PHASE IMPACTS 36
4.1.1 Shadow Flicker 36
4.1.2 Bulk Services Identification 36
4.1.3 Permits 36
4.1.4 Site Boundaries 36
4.1.5 Site Layout 37
4.1.6 “No-Go” Areas 37
4.1.7 Safety considerations 38
4.1.8 Contractor's SHE Officer 38
4.1.9 Emergency procedures 39
4.1.10 Waste management control 39
4.1.11 Stormwater and erosion control 39
4.1.12 Pollution control 39
4.1.13 Training 40
4.1.14 Construction phase site layout 40
4.1.15 Working Hours 41
4.1.16 General Mitigation Measures 41
4.1.17 Heritage, Archaeology and Palaeontology Management 41
4.1.18 Aquatic/ Wet Environments Management 42
4.1.19 Agricultural Management 43
4.1.20 Terrestrial Biodiversity, Botany, and Terrestrial Fauna 43
4.1.21 Avifauna Management 44
4.1.22 Bat Management 46

4.1.23 Noise Impact Management 46
4.1.24 Social Impact Management 47
4.1.25 Transportation of wind turbine infrastructure and access routes 49
4.1.26 Visual Management 49
4.2 CONSTRUCTION PHASE IMPACTS 51
4.2.1 Potential Construction Phase Impacts 51
4.2.2 Site Establishment 52
4.2.3 Site Maintenance 53
4.2.4 Monitoring and Record Keeping 54
4.2.5 Community relations (Social disruption) 55
4.2.6 Working times 55
4.2.7 Work Stoppage and Temporary Site Closure 56
4.2.8 Existing Services and Infrastructure 56
4.2.9 Socio-Economic Management: 56
4.2.10 Appropriate Construction Equipment Management 60
4.2.11 Waste Management 61
4.2.12 Trenching and excavations 64
4.2.13 Excavations and stockpiling 64
4.2.14 Sanitation 65
4.2.15 Health Awareness 65
4.2.16 Environmental Awareness 65
4.2.17 Safety and First Aid Management 66
4.2.18 Emergency preparedness 67
4.2.19 Air Quality (Dust Impacts) Management 68
4.2.20 Water Quality Management (Wastewater and Contaminated) 69
4.2.21 Hazardous Material / Substance (Bitumen Oils and Lubricants) Management 70
4.2.22 Hazardous Material (Fuels, Oils and Others) Management 71
4.2.23 Workshop, Equipment Maintenance and Storage Management 72
4.2.24 Noise Impact Management 74
4.2.25 Blasting/Drilling/Demolitions Management 76
4.2.26 Concrete Mixing (Batching) Management 77
4.2.27 Establishment of Construction Lay Down Area 77
4.2.28 Fire Management 79
4.2.29 Traffic Control Management 80
4.2.30 Avifauna Management 80
4.2.31 Bat Management 82
4.2.32 Aquatic/ Wet Environment Management 83
4.2.33 Stormwater and Erosion Management 89

4.2.34 Terrestrial Biodiversity, Botany and Terrestrial Fauna 91
4.2.35 Heritage Resource Management 94
4.2.36 Geology, Soils, and Agricultural Potential 96
4.2.37 Visual Management 96
4.2.38 Topsoil Management 96
4.2.39 Agricultural Management 97
4.3 OPERATIONAL PHASE IMPACTS 99
4.3.1 Health Awareness 99
4.3.2 Hazardous Material (Fuels, Oils and Others) Management 99
4.3.3 Solid waste management 100
4.3.4 Aquatic/ Wet environment Management 100
4.3.5 Stormwater and Erosion Management 106
4.3.6 Access and Signage 107
4.3.7 Maintenance 107
4.3.8 Flora and Fauna Management 107
4.3.9 Heritage Resource Management 109
4.3.10 Avifaunal No-Net Loss 110
4.3.11 Avifaunal Management 111
4.3.12 Bat Management 114
4.3.13 Visual Management: 116
4.3.14 Agricultural Management 116
4.3.15 Social Impact Management 117
4.3.16 Noise Management 118
4.3.17 Traffic Management 119
4.3.18 Emergency Management 120
4.3.19 Fire Management 120
4.3.20 A line fire breaks to avoid no populations of rear or endangered species, sensitive habitats such as wetlands and highly erodible areas. 121
5. DECOMMISSIONING IMPACTS 122
6. IMPLEMENTATION OF THE EMPR 123
6.1 ENTITY RESPONSIBLE FOR DEVELOPMENT OF THE PROJECT 123
6.2 ROLES & RESPONSIBILITIES 123
6.3 AUDITING OF THE EA AND THE EMPR 135
6.4 FREQUENCY OF VISITS BY THE ECO/ESCO 136
6.5 DOCUMENTED PROCEDURES 137
6.6 HANDLING OF COMPLAINTS RELATED TO THE PROJECT 138
6.7 CONDUCT OF EMPLOYEES ON SITE 138
6.8 MATTERS PERTAINING TO NON-CONFORMANCE ON SITE 138
ANNEXURE A 141

GLOSSARY 141
ANNEXURE B 157
METHOD STATEMENT 157
ANNEXURE C 161
ANNEXURE D 162
DESIGN AND PLANNING 162
ANNEXURE E 144
ROLE OF THE ECO/ESCO 144
ANNEXURE F 146
Specialist studies 146
ANNEXURE G 147
EAP's Curriculum Vita 147
ANNEXURE H 148
Environmental Authorisation (once available) 148
ANNEXURE I 149
Aquatic Rehabilitation Monitoring Pla 149
ANNEXURE J 150
Transportation Management Pla 150
ANNEXURE K 151
Stormwater Management Plan 151
ANNEXURE L 152
Fire Management Plan 152
ANNEXURE M 153
Re-Vegetation and Habitat Rehabilitation Plan 153
ANNEXURE N 154
Chance Fossil Finds Procedure 154
ANNEXURE O 155
DFFE Generic EMPr for the 132kV/33kV IPP Substations 155

List of Annexures

- ***Annexure A*** *contains the Glossary*
- ***Annexure B*** *contains the generic Method Statement*
- ***Annexure C*** *contains relevant permits applicable to the proposed development (Environmental Authorisations as applicable to this Project)*
- ***Annexure D*** *contains design and planning documentation*
- ***Annexure E*** *contains a detailed copy of the recommended Roles and Responsibilities of the Environmental Control Officer (ECO/ESCO)*
- ***Annexure F*** *contains the Specialists Reports associated with the Overberg Wind Energy Facility*
- ***Annexure G*** *contains the EAP's Curriculum Vitae*
- ***Annexure H*** *contains the Environmental Authorisation (once available)*
- ***Annexure I*** *contains the Aquatic Rehabilitation Management Plan*
- ***Annexure J*** *contains the Traffic and Transportation Management Plan*
- ***Annexure K*** *contains the Stormwater Management Plan*
- ***Annexure L*** *contains the Fire Management Plan*
- ***Annexure M*** *contains the Re-vegetation and Habitat Rehabilitation Plan*
- ***Annexure N*** *contains the Chance Fossil Finds Procedure*
- ***Annexure O*** *contains the DFFE Generic EMPr for the 132kV/33kV IPP Substations*

IMPORTANT NOTE: ALL READERS TO PLEASE FAMILIARIZE THEMSELVES WITH THE RELEVANT TERMINOLOGY CONTAINED IN THE GLOSSARY (ANNEXURE A) PRIOR TO READING THIS DOCUMENT.

Appendix 4 Regulation 1 of GN No. R. 982 of the NEMA EIA Regulations (2014) stipulates that an Environmental Management Programme (EMPr) must comply with Section 24N of the NEMA and must include the following:

Regulation		Content of Environmental Management Programme (EMPr)	Reference
A4 R1 (a)		**Details of:**	
	(i)	*The EAP who prepared the report; and*	Section 3.1 Annexure G
	(ii)	*The expertise of the EAP, including a curriculum vitae*	Annexure G
A4 R1 (b)		***A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;***	Section 1 and 4
A4 R1 (c)		***A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;***	Section 1
A4 R1 (d)		***A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-***	Section 4
	(i)	*Planning and design;*	Section 1 and 4
	(ii)	*Pre-construction activities;*	Section 4.1
	(iii)	*Construction activities;*	Section 4.2
	(iv)	*Rehabilitation of the environment after construction and where applicable post closure; and*	Section 4
	(v)	*Where relevant, operation activities;*	Section 4.3
A4 R1 (e)		***a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);***	Section 4
A4 R1 (f)		***a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to -***	Section 4 and Annexures
	(i)	*Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*	Section 4
	(ii)	*Comply with any prescribed environmental management standards or practices;*	Section 4
	(iii)	*Comply with any applicable provisions of the Act regarding closure, where applicable; and*	Section 4
	(iv)	*comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;*	Section 4
A4 R1 (g)		***The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);***	Section 6
A4 R1 (h)		***The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);***	Section 6
A4 R1 (i)		***An indication of the persons who will be responsible for the implementation of the impact management actions;***	Section 6
A4 R1 (j)		***The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;***	Section 6
A4 R1 (k)		***The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);***	Section 6
A4 R1 (l)		***A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;***	Section 6
A4 R1 (m)		***An environmental awareness plan describing the manner in which-***	Section 6
	(i)	*The applicant intends to inform his or her employees of any environmental risk which may result from their work; and*	
	(ii)	*risks must be dealt with in order to avoid pollution or the degradation of the environment;*	
A4 R1 (n)		***Any specific information that may be required by the competent authority.***	Section 1

1. INTRODUCTION

1.1 EXECUTIVE SUMMARY

The Overberg Wind Energy Facility ("WEF"), located Southwest of the town of Swellendam within the jurisdiction of the Overberg District Municipality, lies within the Western Cape Province (Figure 1.1 below) and was originally authorised on 24 October 2022 (DFFE Ref:14/12/16/3/3/1/2556).

The Developer, FE Overberg (RF) (Pty) Ltd has been selected as the Preferred Bidder in a tender submitted for a large industrial private off-taker and thus forms part of a private procurement programme in the commercial and industrial (C&I) sector, under a private Power Purchase Agreement (PPA). Consequently, the EA was amended (DFFE Ref: 14/12/16/3/3/1/2556/AM1, dated 15 March 2024) for the approval of the Environmental Management Programme (EMPr), Generic EMPrs, and Final Layout (dated 06 October 2023) to ensure that final engineering design considerations were in place to ensure buildability and in order for the Developer to satisfy contractual obligations. Two minor amendments (Part 1s) were also undertaken (14/12/16/3/3/1/2556/AM2, dated 22 April 2024 and (14/12/16/3/3/1/2556/AM3, dated 26 April 2024) to correct various administrative errors pertaining to the issuance of the EA.

Subsequently, HawkWatch International (HWI), and the Overberg Renosterveld Conservation trust (ORCT) engaged with the Developer to discuss potential additional avifaunal mitigations for the Project, which has ultimately resulted in the development of a Revised Final Layout (dated 13 June 2024), which this EMPr accompanies.

The WEF is also located within a **Renewable Energy Development Zone** (REDZ)[1], specifically the Overberg REDZ (please refer to Figure 1.2 below), which dictated that the original permitting process for the WEF (in 2022) was subject to a Basic Assessment Process ("BAR") and not a full Scoping and EIA (S&EIA) process which is typically the case. This REDZ qualification also allows for a shortened decision-making timeframe of **57 calendar days** (instead of 107 days). REDZ are strategically designed and demarcated by the Competent Authority to encourage and incentivize this type of development in these areas.

<u>The approximate coordinates of the WEF are as follows:</u>

- Northern Boundary: 34°06'21.08''S, 20°17'42.66''E
- Eastern boundary: 34°05'52.16''S, 20°23'07.67''E
- Middle Point: 34°09'56.51''S, 20°17'10.22''E
- Southern Boundary: 34°13'25.41''S, 20°18'09.21''E
- Western Boundary: 34°09'30.87''S, 20°12'30.70''E

[1] A Strategic Environmental Assessment (SEA) was completed for Southern Africa for the identification of Renewable Energy Development Zones (REDZs) for the development of potential wind and solar projects, which would be of national strategic importance in terms of green energy in support of the country's electrical demand and economy. The proposed development is located entirely within the Overberg Renewable Energy Development Zone (REDZ) (namely REDZ 1), as defined and in terms of the procedures laid out in Government Notices No. 113 and No. 145 which were formally gazetted on 16 February 2018 and 26 February 2021, respectively.

The Listed Activities[2] triggered and already authorised are provided below:

Table 1.2: Summary table of the listed activities triggered for the Overberg Wind Energy Facility.

GNR (LN)	GNR Date	Activity	Theme
GNR 327 (LN1)	2017	Activity 11	Transmission and Distribution of Electricity.
		Activity 12	Development physical footprint greater than 100m^2, and development within or within 32 metres of a watercourse.
		Activity 14	Storage of dangerous goods up to 5000 cubic metres.
		Activity 19	Infilling or depositing of any material within watercourse.
		Activity 24	Road Development.
		Activity 28	Industrial development of Agricultural Land
		Activity 30	Vegetation clearance within and disturbance of ecosystems listed in the National List of Ecosystems (GNR 1002 of 9 December 2011), and NEM:BA (Act 10 of 2004).
		Activity 56	Widening or lengthening of existing Roads.
GNR 325 (LN2)	2017	Activity 1	Generation of Electricity (Renewable).
		Activity 15	Clearance of vegetation.
GNR 324 (LN3)	2017	Activity 4	Road Development. (Within the Western Cape)
		Activity 12	Clearance of vegetation. (Within the Western Cape)
		Activity 14	Development of infrastructure greater than 10m^2 within 32m of a watercourse, outside an urban area and within a CBA. (Within the Western Cape)
		Activity 18	Widening or lengthening of existing Roads. (Within the Western Cape)

[2]A detailed description of the activities triggered and presented in Table 1.2 can be seen in the EA authorised on 24 October 2022 (DFFE Ref:14/12/16/3/3/1/2556). There are **no new Listed Activities** triggered

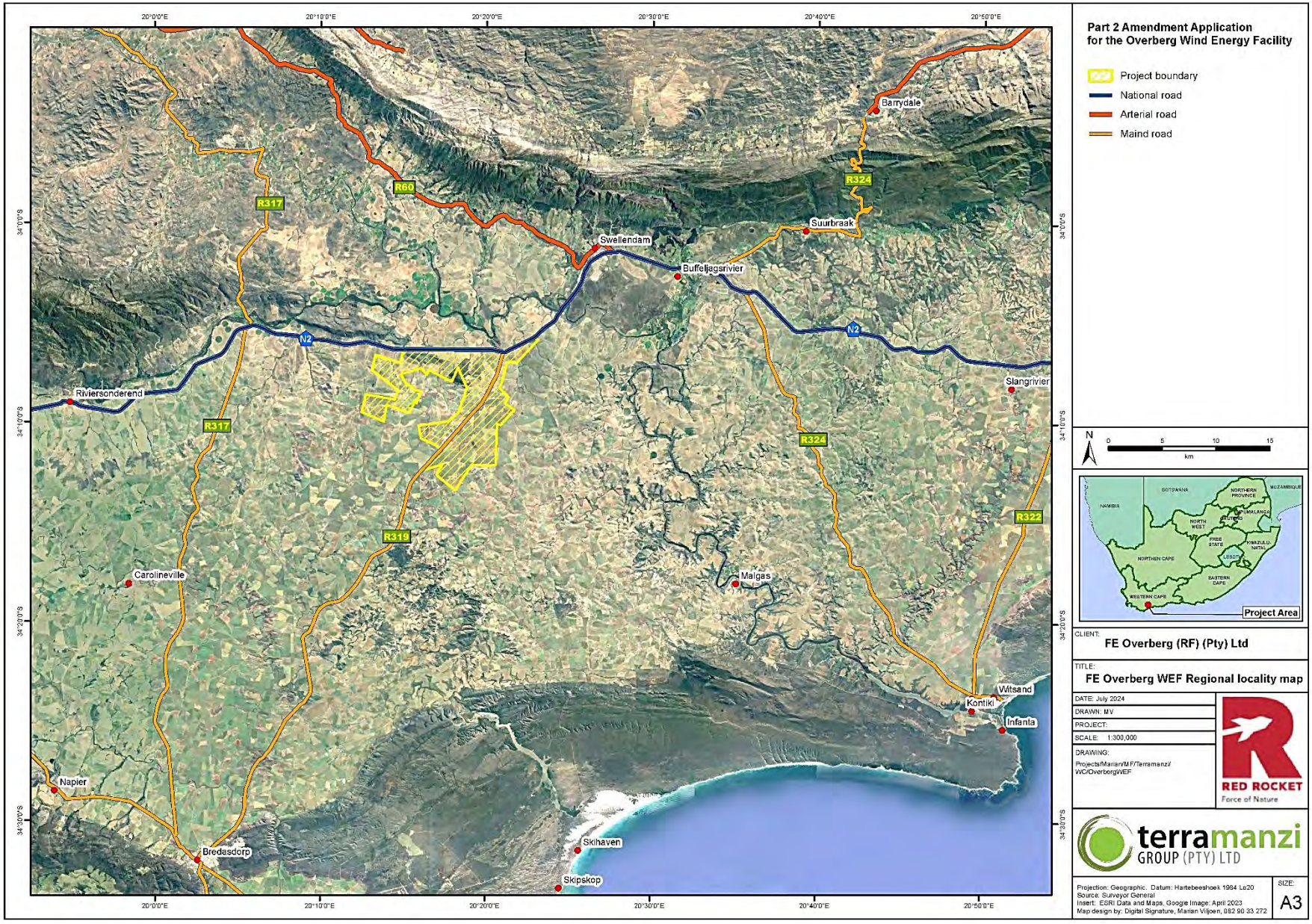


Figure 1.1: Regional Locality Map of the Overberg Wind Energy Facility.

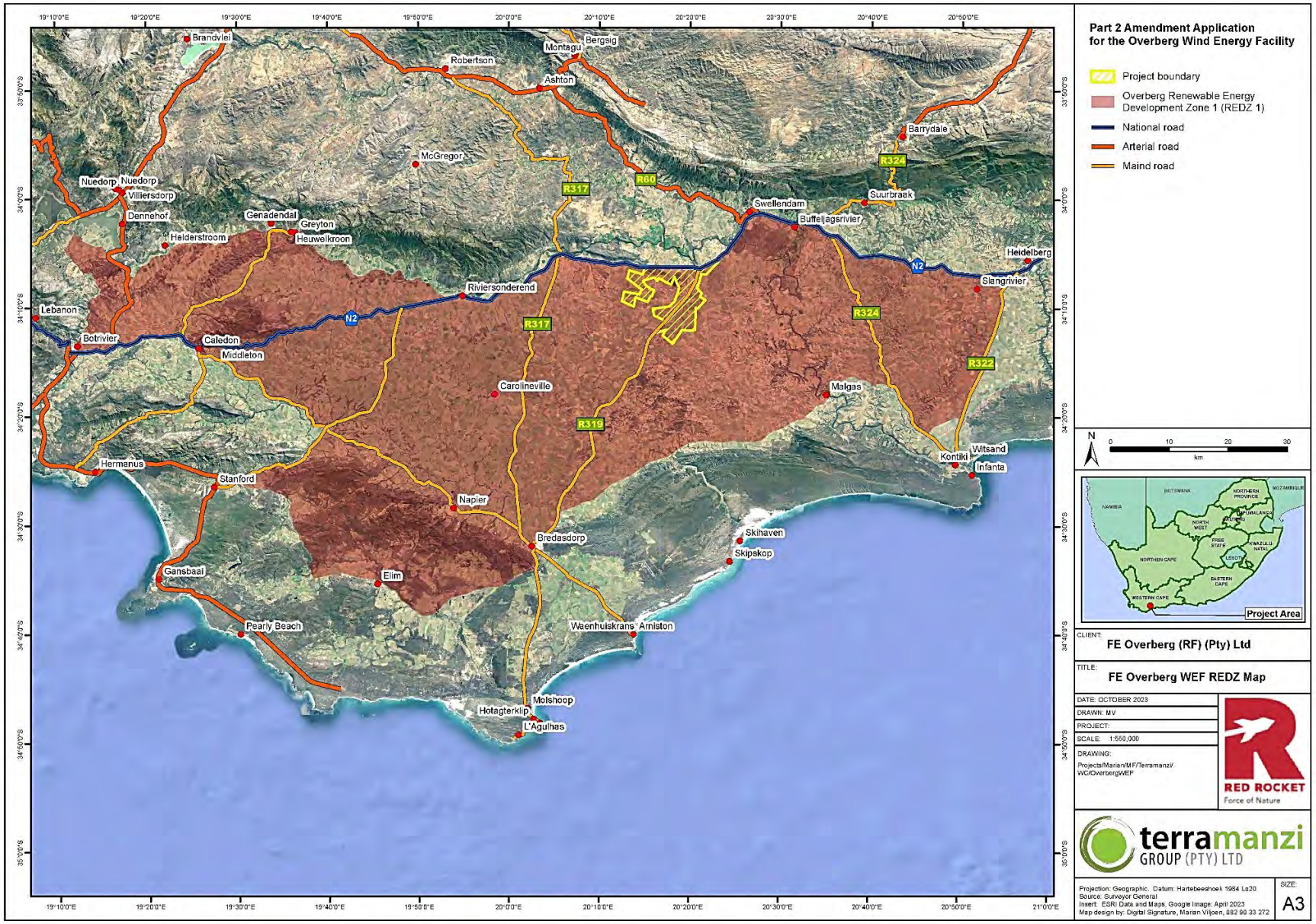
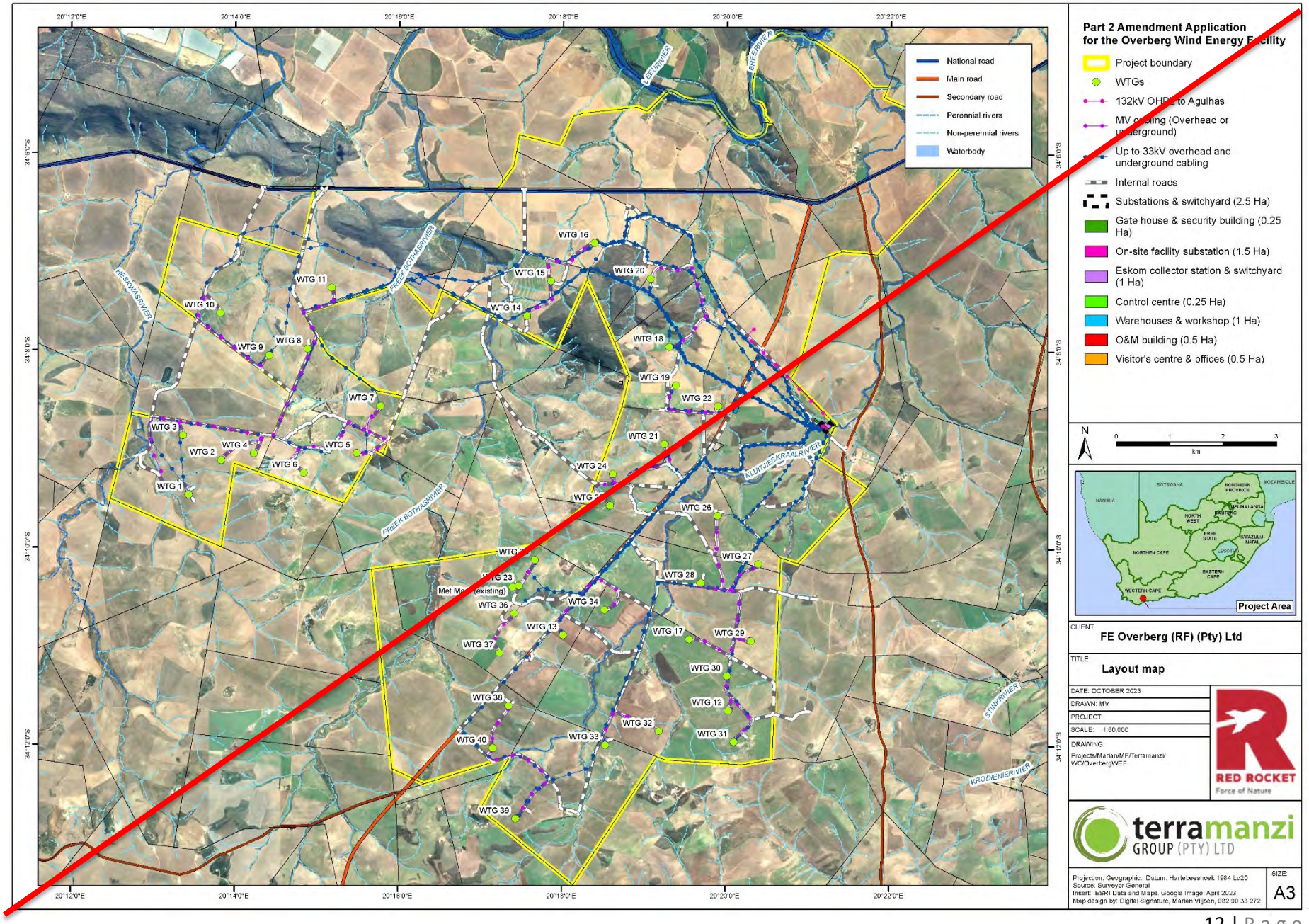


Figure 1.2: Overberg Wind Energy Facility (indicated in yellow) falls within the Overberg REDZ1 (indicated in red).


Part 2 Amendment Application for the Overberg Wind Energy Facility
Project boundary
WTGs
132kV OHPL to Agulhas
MV cabling (Overhead or underground)
Up to 33kV overhead and underground cabling
Internal roads
Substations & switchyard (2.5 Ha)
Gate house & security building (0.25 Ha)
On-site facility substation (1.5 Ha)
Eskom collector station & switchyard (1 Ha)
Control centre (0.25 Ha)
Warehouses & workshop (1 Ha)
O&M building (0.5 Ha)
Visitor's centre & offices (0.5 Ha)
National road
Main road
Secondary road
Perennial rivers
Non-perennial rivers
Waterbody
Project Area
CLIENT:
FE Overberg (RF) (Pty) Ltd
TITLE:
Layout map
DATE: OCTOBER 2023
DRAWN: MV
PROJECT:
SCALE: 1:60,000
DRAWING:
Projects/Marian/MF/Terramanzi/WO/Overberg/WEF
RED ROCKET
Force of Nature
terramanzi
GROUP (PTY) LTD
Projection: Geographic. Datum: Hartebeeshoek 1984 Lo20
Source: Surveyor General
Insert: ESRI Data and Maps, Google Image: April 2023
Map design by: Digital Signature, Marian Viljoen, 082 90 33 272
SIZE:
A3

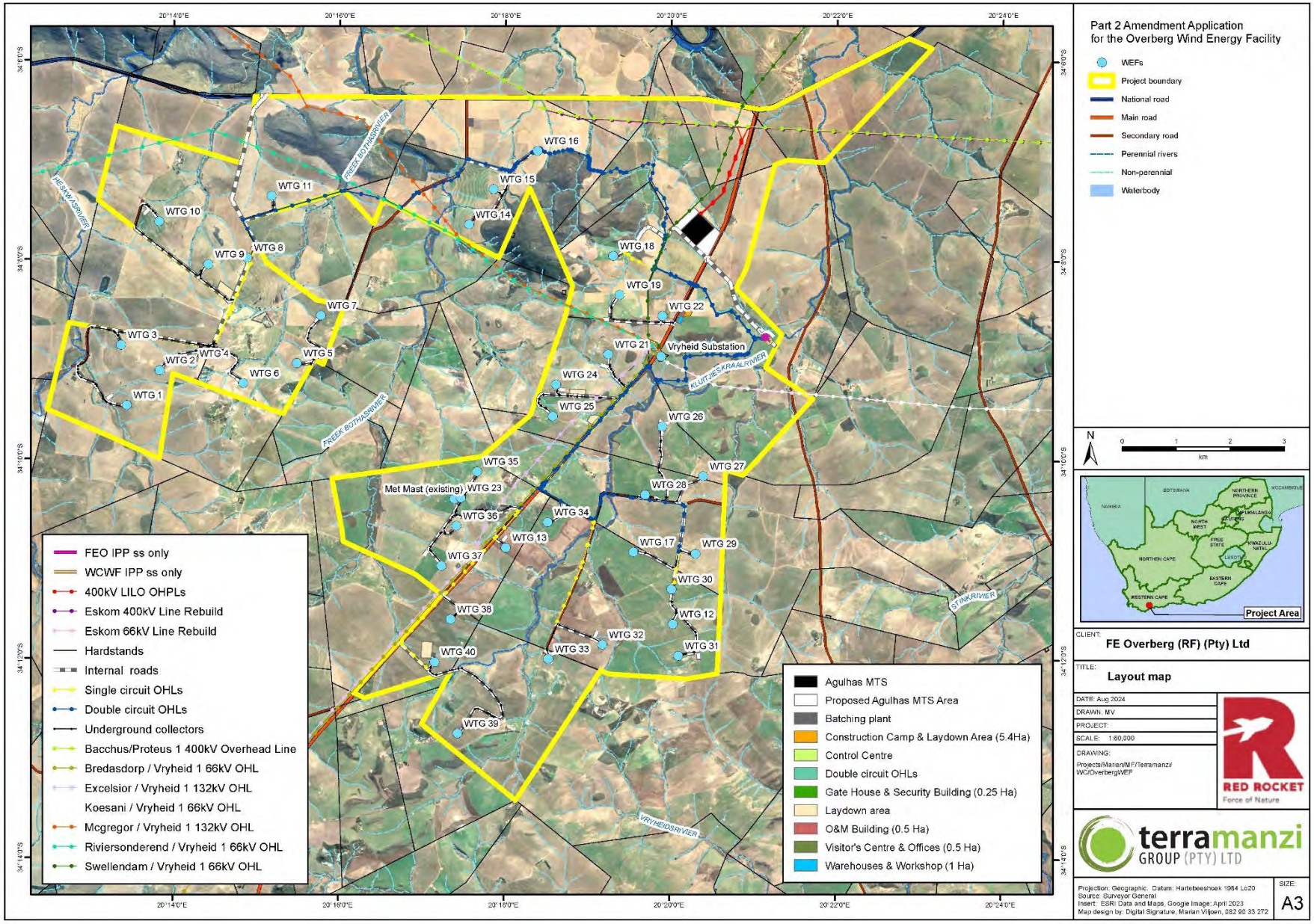


Figure 1.3 Final site layout plan for the Overberg Wind Energy Facility, substation and all associated infrastructure (11 August 2024).

1.2 PROJECT COMPONENTS

The main components of the **Overberg WEF** and associated infrastructure includes *inter alia*:

a) Up to 39 wind turbine generators (WTGs)
b) Hub heights of up to 150m
c) Rotor diameters up to 200m
d) Tip heights of up to 250m
e) WTG outputs of up to 8.2MW (noting total authorized cumulative output is 260MW)
f) Note that maximum thresholds above are maximum assessed and authorized thresholds and a combination of any size WTG may by implemented up to the thresholds authorized above in order to ensure optimized wind resource and cost engineering for site.
g) A 132kV/33kV IPP Substations up to 1.4ha.
h) Up to 33kV overhead and/or underground cabling between the turbines, to be laid underground and along roads or existing areas of transformed land, where technically feasible.
i) Associated Balance of Plant areas which will include:
    a. Temporary laydown areas,
    b. Construction camps, laydowns, and temporary concrete batching plants,
    c. Operation and Maintenance buildings which will include gate houses, security
j) building, control centre, offices, warehouses, workshops and visitor's centre.
k) Concrete turbine foundations and turbine hardstands areas of up to 7200m^2
l) Access roads to the site and between project components with a width of up to 12m and a servitude of up to 20m. The main access points will be up to 12m wide.
m) Perimeter fencing, fencing of all buildings~~ and on-site substation and Eskom Collector Station fencing~~

Revised Final Layout (dated 11 August 2024)

The layout has been revised in response to engagement between stakeholders (HWI, BLSA and ORCT) and the Developer to accommodate additional mitigation measures relating to avifaunal considerations raised.

Terms of Reference

1. Specialists were requested to provide a matrix (based on the requirements of Appendix 1 Regulation 3(h) (ix); of GN No. R. 326 of the NEMA EIA Regulations (2014, as amended) for each component of the Project to **ensure optimal accuracy and positioning for each specific component of the facility**, as follows:
    a. **Wind Turbine Generators** (WTG) **Matrix:** this matrix is designed to target the specific potential impacts and influences that WTGs have on the site
    b. **Substation and Permanent Infrastructure Matrix:** this matrix is designed to target the specific potential impacts and influences of the Substation facility, Operations and Maintenance buildings (which includes gate houses, a security building, a control centre, offices, warehouses, workshops and visitor's centre)
    c. **Internal Roads Matrix:** this matrix is designed to target the specific potential impacts and influences of the roads on site (up to 12m wide with a servitude of up to 20m wide)
    d. **Powerlines Matrix:** this matrix is designed to target the specific potential impacts and

influences of the 33kV cabling on site which includes a combination of overhead or underground cabling between the turbines.

2. The site maps were informed by expert assessment and consolidated by a GIS specialist and are presented as a consolidated component site matrix, for each component and which is presented below (Figures 1.4 through to 1.7)
3. The matrices maps provided have guided the final layout design (13 June 2024) to ensure a practical and environmentally acceptable solution for the site

Description of the areas (colour coded for ease of reference)

- **Developable** means areas that are not sensitive and accordingly do not have any development constraints
- **Acceptable / Developable with mitigation** means areas that have some sensitivity but development can proceed with specified mitigation measures which have either reduced or removed the identified risk to acceptable levels
- **Not Developable** means areas that have sensitivity of a nature that are either not mitigatable or would represent a fatal flaw should design extend into these areas, traditionally known as a ''no-go'' areas.

Developable Area	Acceptable Area	Not Developable

Opportunities and Constraints Map for the WTG's (Figure 1.4 below)

Within the final layout design (dated 13 June 2024) of the WEF, each WTG has been strategically positioned to avoid the red areas. WTGs situated within yellow areas mean that their locations are deemed acceptable, provided that the prescribed mitigation measures outlined within this EMPr, as articulated by the Professional Team are implemented. Both the Professional Team and the EAP are satisfied with the placement and micro-siting of the WTGs and associated infrastructure as illustrated within the final layout (dated 13 June 2024).

Opportunities and Constraints Map for the substation and permanent infrastructure (Figure 1.5 below)

The design of the infrastructure component has been optimised based on its proximity to the planned Eskom Agulhas Main Transmission Substation (MTS) and has also been designed to avoid the red areas. The Substation and permanent infrastructures situated within the yellow areas mean that their locations are deemed acceptable, provided that the prescribed mitigation measures outlined in this EMPr, as articulated by the Professional Team are implemented. Both the Professional Team and the EAP are satisfied with the placement of the substations and associated permanent infrastructure within this finalised layout

Opportunities and Constraints Map for internal roads (Figure 1.6 below)

The design of internal roads within the Overberg Wind Energy facility prioritises avoidance of the red areas. To optimise the road network, many of the internal roads have been aligned with existing routes. In certain areas, however, some internal roads will require widening or construction to accommodate various necessary elements, such as cut and fill requirements, side drains, stormwater control measures, turning areas, and adequate vertical and horizontal turning radii to ensure the safe

transportation of WTG components. Internal roads situated within the yellow areas mean that their locations are deemed acceptable, provided that the prescribed mitigation measures outlined in this EMPr, as articulated by the Professional Team are implemented, Both the Professional Team and the EAP are satisfied with the placement of the Final Road layout.

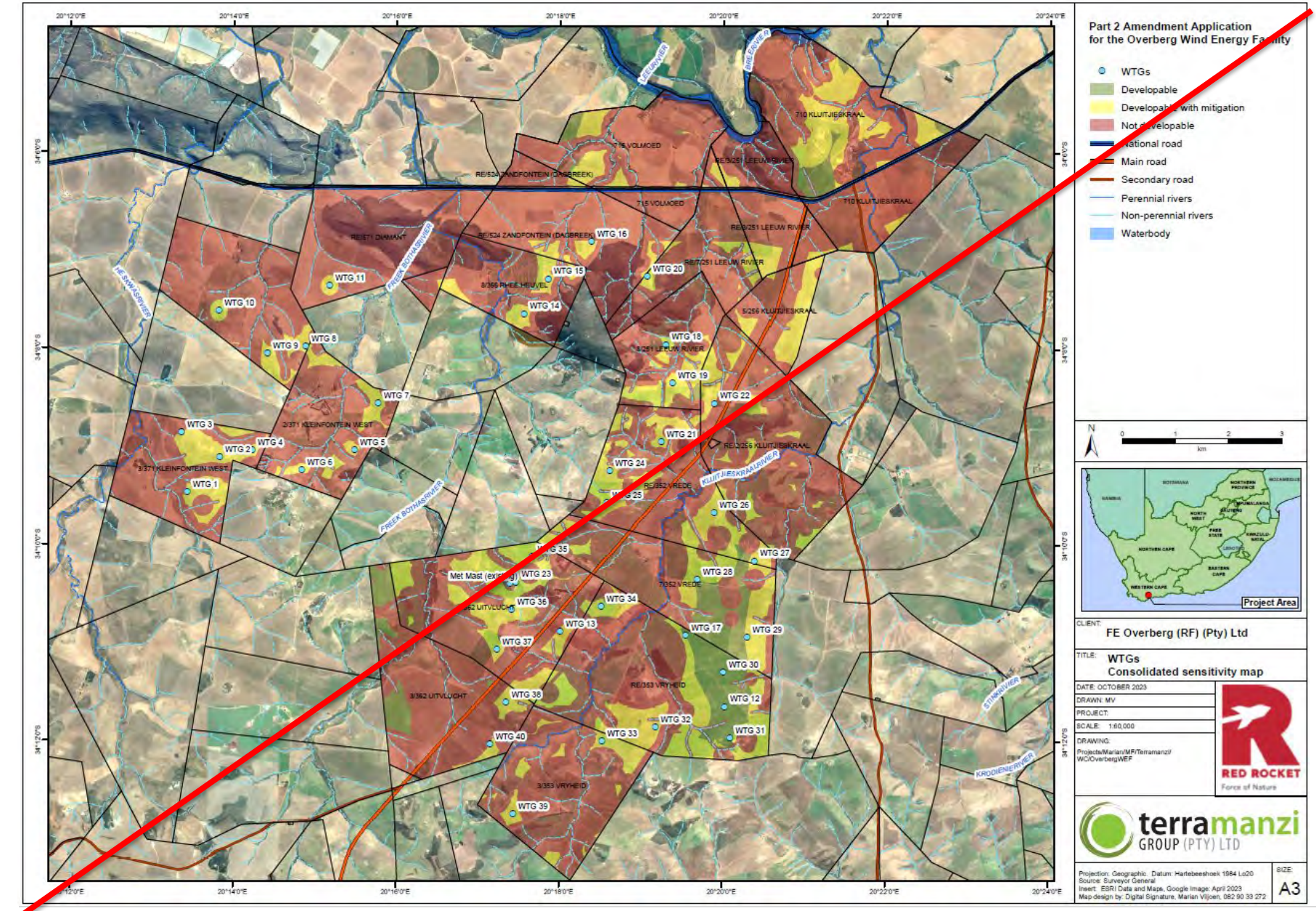
Opportunities and Constraints Map for Powerlines (Figure 1.7 below)

The powerline components have been designed to avoid red (non-developable) areas. There is one aspect to this component, as follows:

a) The 33kV cabling between the turbine components (**specifically the above-ground design**) is considered **sensitive primarily from a visual, social and avifaunal perspective**. Where the proposed 33kV OHPL crosses any red areas, it is a specialist requirement that the cabling in these areas needs to go underground to ensure that potential impacts here are mitigated to acceptable levels. **Therefore, a combination of above-ground OHPL and underground Powerline cabling for the 33kV routing will take place as aligned with the matrix undercover**.

Powerlines situated within the yellow areas mean that their locations are deemed acceptable, provided that the prescribed mitigation measures outlined in Section 7.1 (of the Motivation Report) and this EMPr, as articulated by the Professional Team are implemented.

Both the Professional Team and the EAP are satisfied with the placement of the powerlines provided that the mitigation measures are implemented and routing will take place as aligned with the Powerline matrix.


Part 2 Amendment Application
for the Overberg Wind Energy Facility
WTGs
Developable
Developable with mitigation
Not developable
National road
Main road
Secondary road
Perennial rivers
Non-perennial rivers
Waterbody
Project Area
CLIENT: FE Overberg (RF) (Pty) Ltd
TITLE: WTGs
Consolidated sensitivity map
DATE: OCTOBER 2023
DRAWN: MV
PROJECT:
SCALE: 1:60,000
DRAWING: Projects/Marlan/MF/Terramanzi/WC/Overberg/WEF
RED ROCKET
Force of Nature
terramanzi
GROUP (PTY) LTD
Projection: Geographic. Datum: Hartebeeshoek 1984 Lo20
Source: Surveyor General
Insert: ESRI Data and Maps, Google Image: April 2023
Map design by: Digital Signature, Marlan Viljoen, 082 90 33 272
SIZE: A3

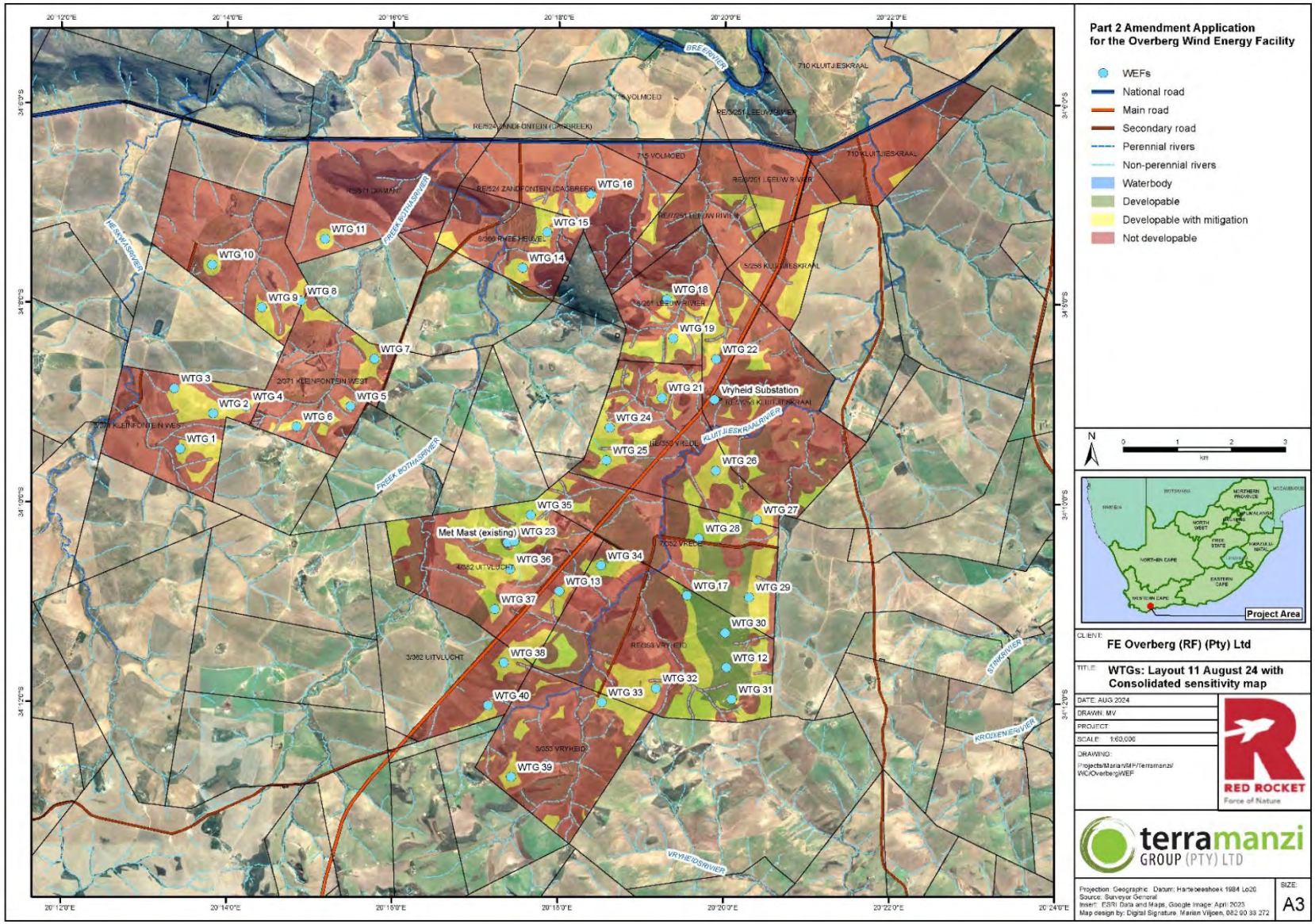
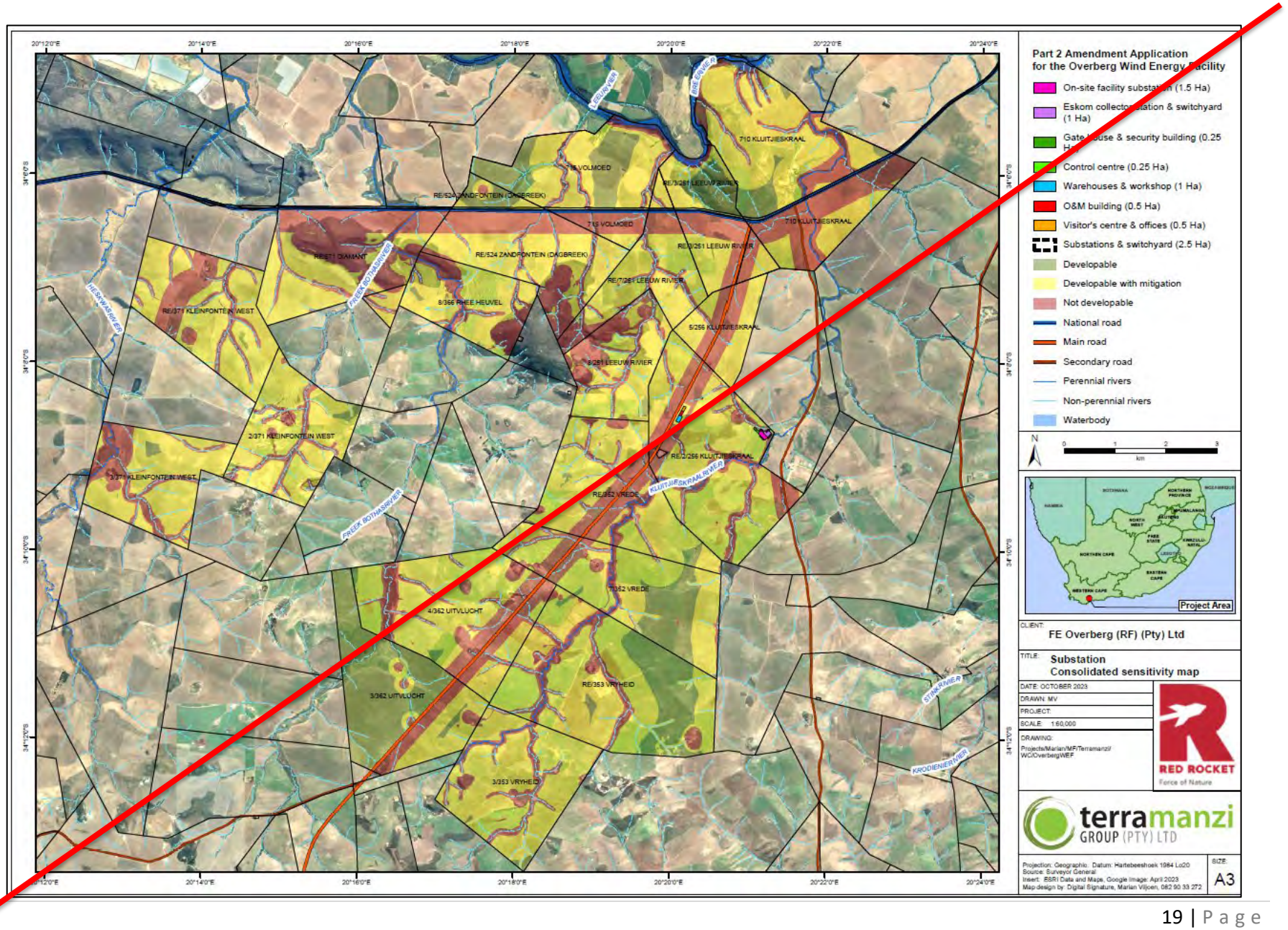


Figure 1.4 Opportunities and Constraints Map (O&C) for the WTG's (11 August 2024).


Part 2 Amendment Application
for the Overberg Wind Energy Facility
On-site facility substation (1.5 Ha)
Eskom collector station & switchyard (1 Ha)
Gate house & security building (0.25 Ha)
Control centre (0.25 Ha)
Warehouses & workshop (1 Ha)
O&M building (0.5 Ha)
Visitor's centre & offices (0.5 Ha)
Substations & switchyard (2.5 Ha)
Developable
Developable with mitigation
Not developable
National road
Main road
Secondary road
Perennial rivers
Non-perennial rivers
Waterbody
Project Area
CLIENT:
FE Overberg (RF) (Pty) Ltd
TITLE:
Substation
Consolidated sensitivity map
DATE: OCTOBER 2023
DRAWN: MV
PROJECT:
SCALE: 1:60,000
DRAWING:
Projects/Marian/MF/Terramanzi/WC/OverbergWEF
RED ROCKET
Force of Nature
terramanzi
GROUP (PTY) LTD
SIZE:
A3
Projection: Geographic. Datum: Hartebeeshoek 1984 Lo20
Source: Surveyor General
Insert: ESRI Data and Maps, Google Image: April 2023
Map design by: Digital Signature, Marian Viljoen, 082 90 33 272
RE/371 KLEINFONTEIN WEST
2/371 KLEINFONTEIN WEST
3/371 KLEINFONTEIN WEST
RE/524 ZANDFONTEIN (DAGBREEK)
715 VOLMOED
710 KLUITJIESKRAAL
RE/3/251 LEEUW RIVIER
RE/7/251 LEEUW RIVIER
8/366 RHEE HEUVEL
5/256 KLUITJIESKRAAL
RE/2/256 KLUITJIESKRAAL
RE/362 VREDE
7/362 VREDE
4/362 UITVLUCHT
3/362 UITVLUCHT
RE/363 VRYHEID
3/353 VRYHEID
RE/1 DIAMANT
LEEUWRIVIER
HEKSWASRIVIER
FREEK BOTHASRIVIER
KLUITJIESKRAALRIVIER
STINKRIVIER
KRODIENIERSRIVIER

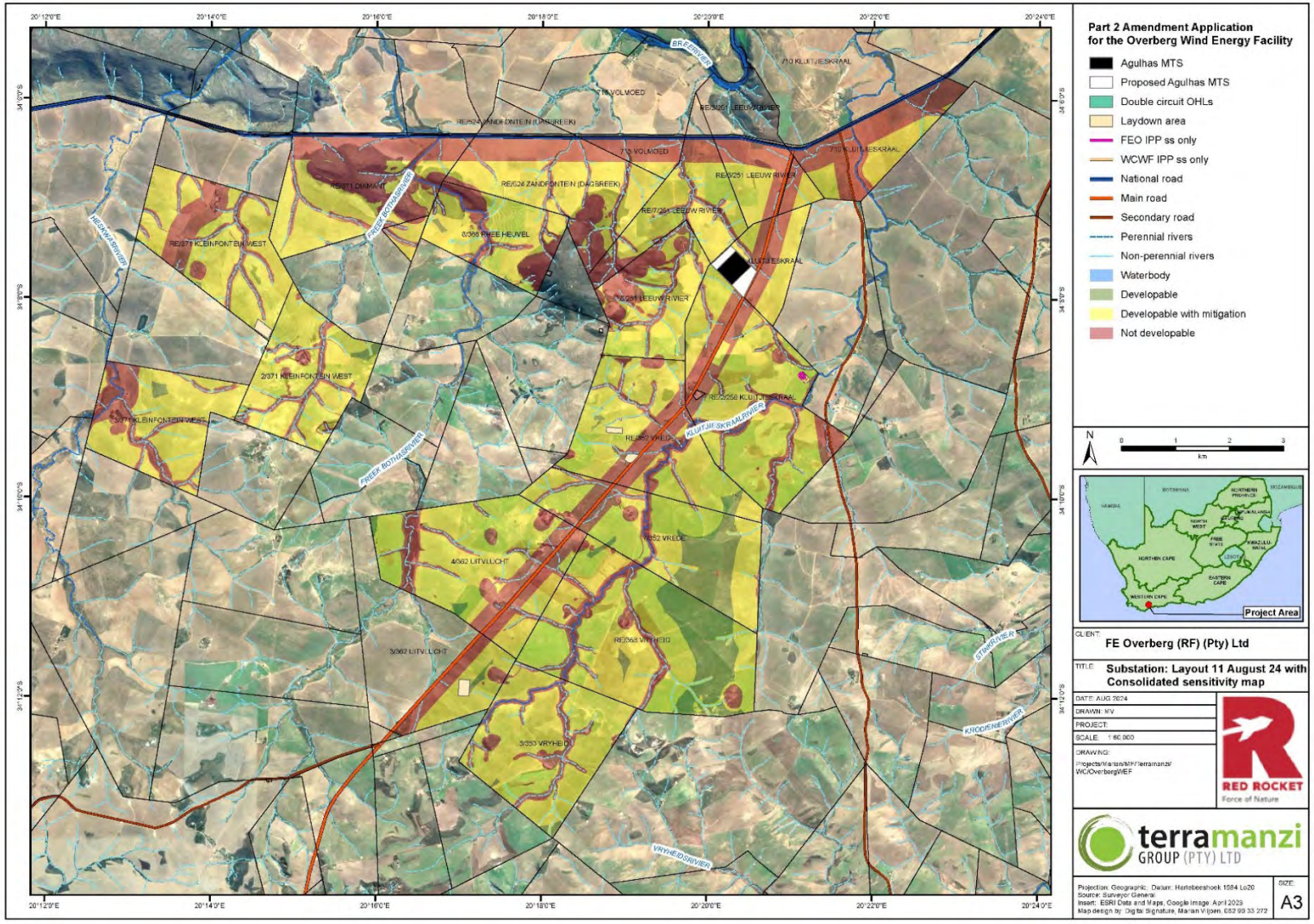
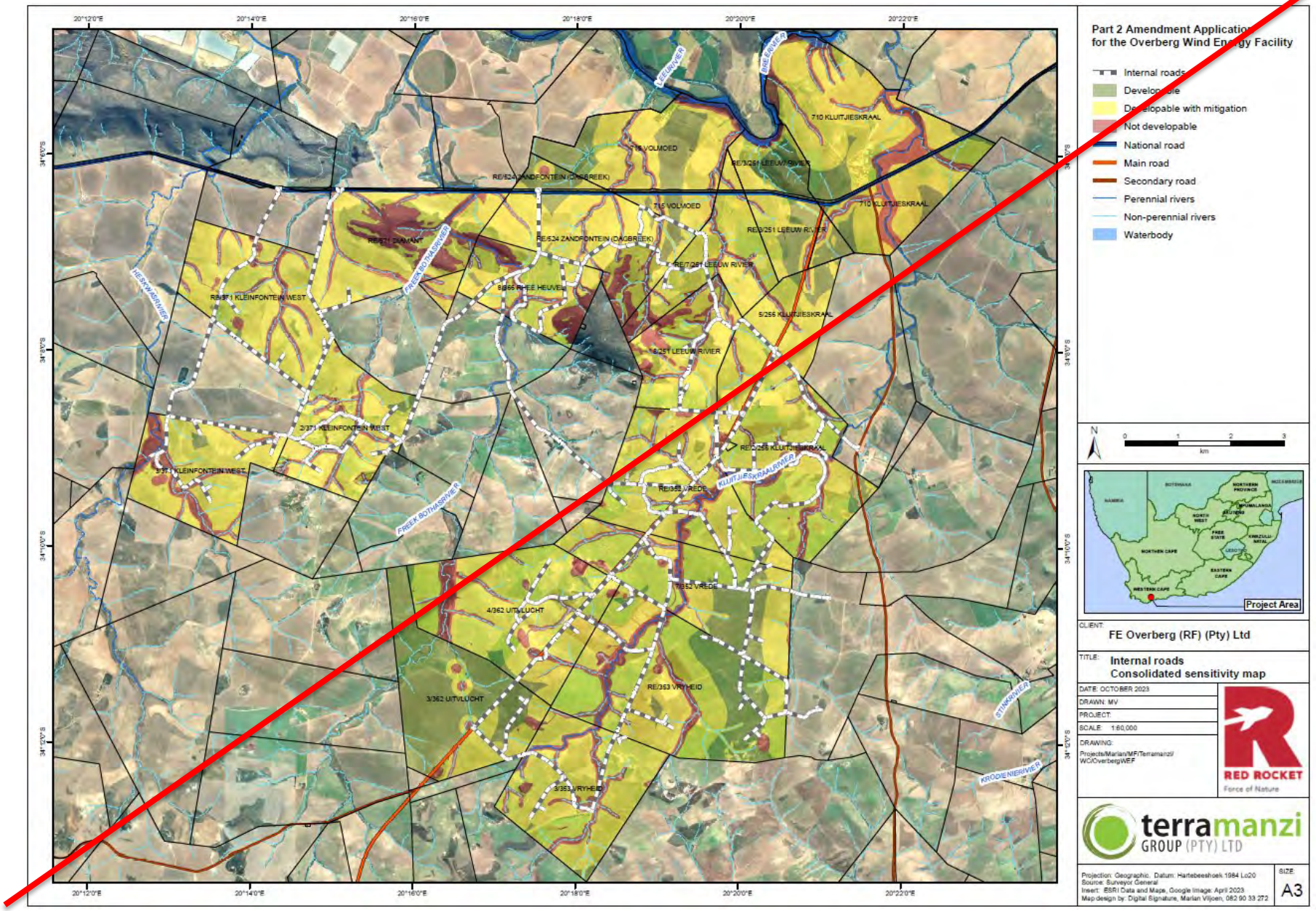


Figure 1.5: Opportunities and Constraints Map (O&C) for the Substation's and permanent infrastructure (11 August 2024).


Part 2 Amendment Application
for the Overberg Wind Energy Facility
Internal roads
Developable
Developable with mitigation
Not developable
National road
Main road
Secondary road
Perennial rivers
Non-perennial rivers
Waterbody
Project Area
CLIENT:
FE Overberg (RF) (Pty) Ltd
TITLE:
Internal roads
Consolidated sensitivity map
DATE: OCTOBER 2023
DRAWN: MV
PROJECT:
SCALE: 1:60,000
DRAWING:
Projects/Marlan/MF/Terramanzi/WC/OverbergWEF
RED ROCKET
Force of Nature
terramanzi
GROUP (PTY) LTD
Projection: Geographic. Datum: Hartebeeshoek 1984 Lo20
Source: Surveyor General
Insert: ESRI Data and Maps, Google Image: April 2023
Map design by: Digital Signature, Marlan Viljoen, 082 90 33 272
SIZE:
A3
710 KLUITJIESKRAAL
715 VOLMOED
RE/524 ZANDFONTEIN (DAGBREEK)
RE/3/251 LEEUW RIVIER
RE/7/251 LEEUW RIVIER
8/865 RHEE HEUVEL
5/256 KLUITJIESKRAAL
6/251 LEEUW RIVIER
RE/352 VREDE
4/362 UITVLUCHT
3/362 UITVLUCHT
RE/353 VRYHEID
3/353 VRYHEID
2/371 KLEINFONTEIN WEST
RE/371 KLEINFONTEIN WEST
LEEURIVIER
BREEDRIVIER
HEISKAMMARIVIER
FREEK BOTHASRIVIER
KLUITJIESKRAALRIVIER
STINKRIVIER
KRODIENIERIVIER

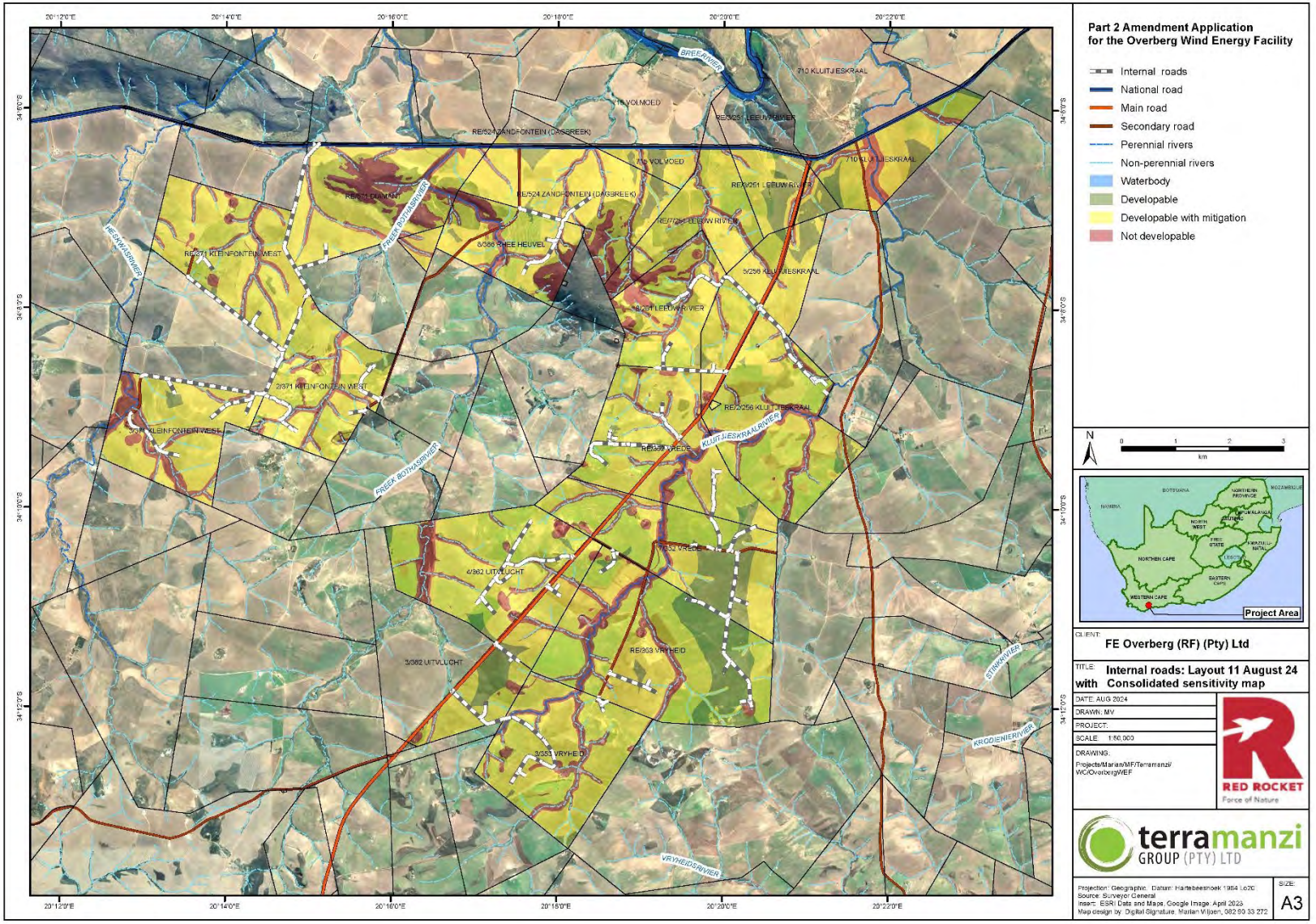
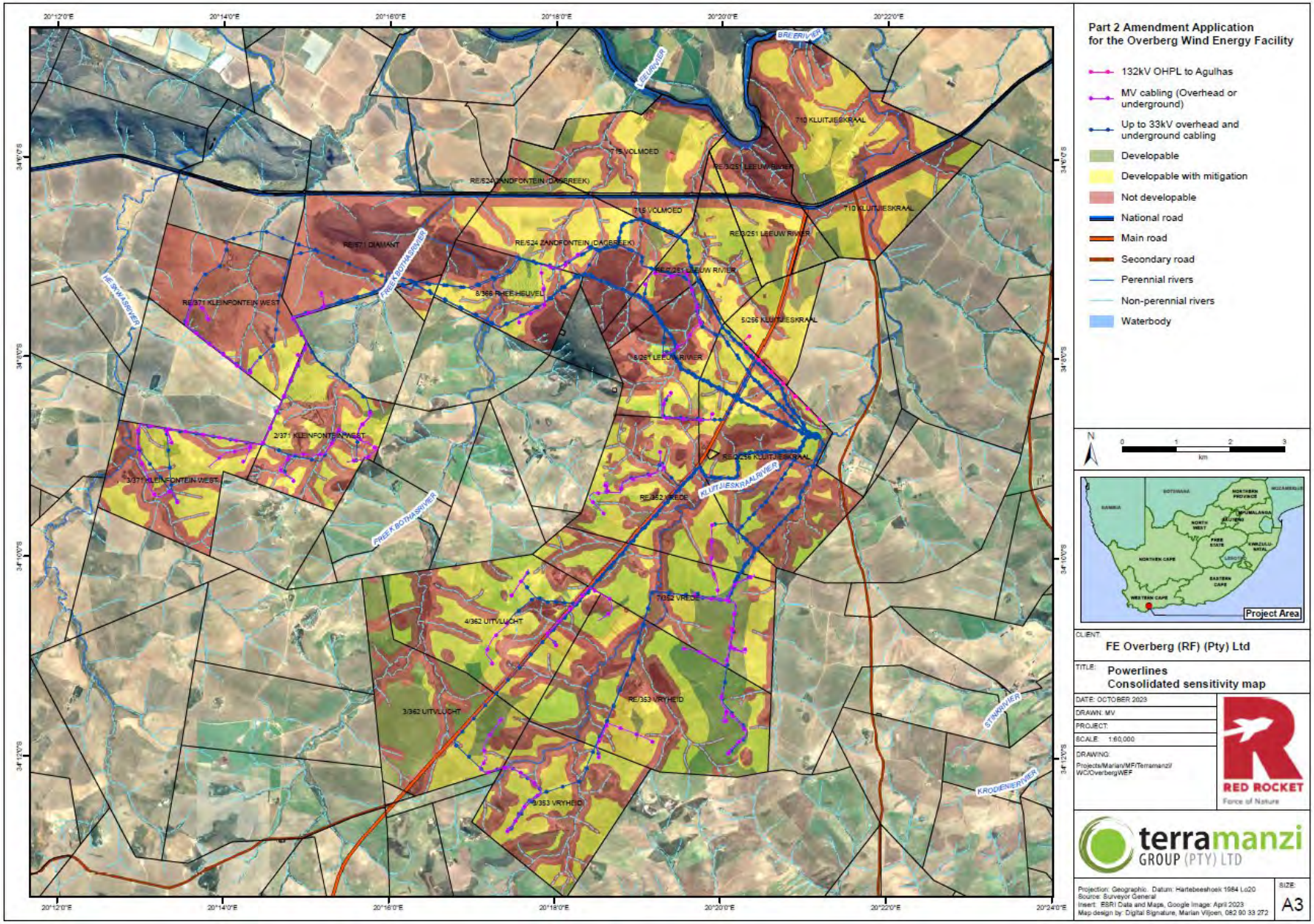


Figure 1.6 Opportunities and Constraints Map (O&C) for the Internal Roads (11 August 2024).


Part 2 Amendment Application
for the Overberg Wind Energy Facility
132kV OHPL to Agulhas
MV cabling (Overhead or underground)
Up to 33kV overhead and underground cabling
Developable
Developable with mitigation
Not developable
National road
Main road
Secondary road
Perennial rivers
Non-perennial rivers
Waterbody
Project Area
CLIENT:
FE Overberg (RF) (Pty) Ltd
TITLE:
Powerlines
Consolidated sensitivity map
DATE: OCTOBER 2023
DRAWN: MV
PROJECT:
SCALE: 1:60,000
DRAWING:
Projects/Marlan/MP/Terramanzi/WC/OverbergWEF
RED ROCKET
Force of Nature
terramanzi
GROUP (PTY) LTD
Projection: Geographic. Datum: Hartebeeshoek 1984 Lo20
Source: Surveyor General
Insert: ESRI Data and Maps, Google Image: April 2023
Map design by: Digital Signature, Marlan Viljoen, 082 90 33 272
SIZE:
A3

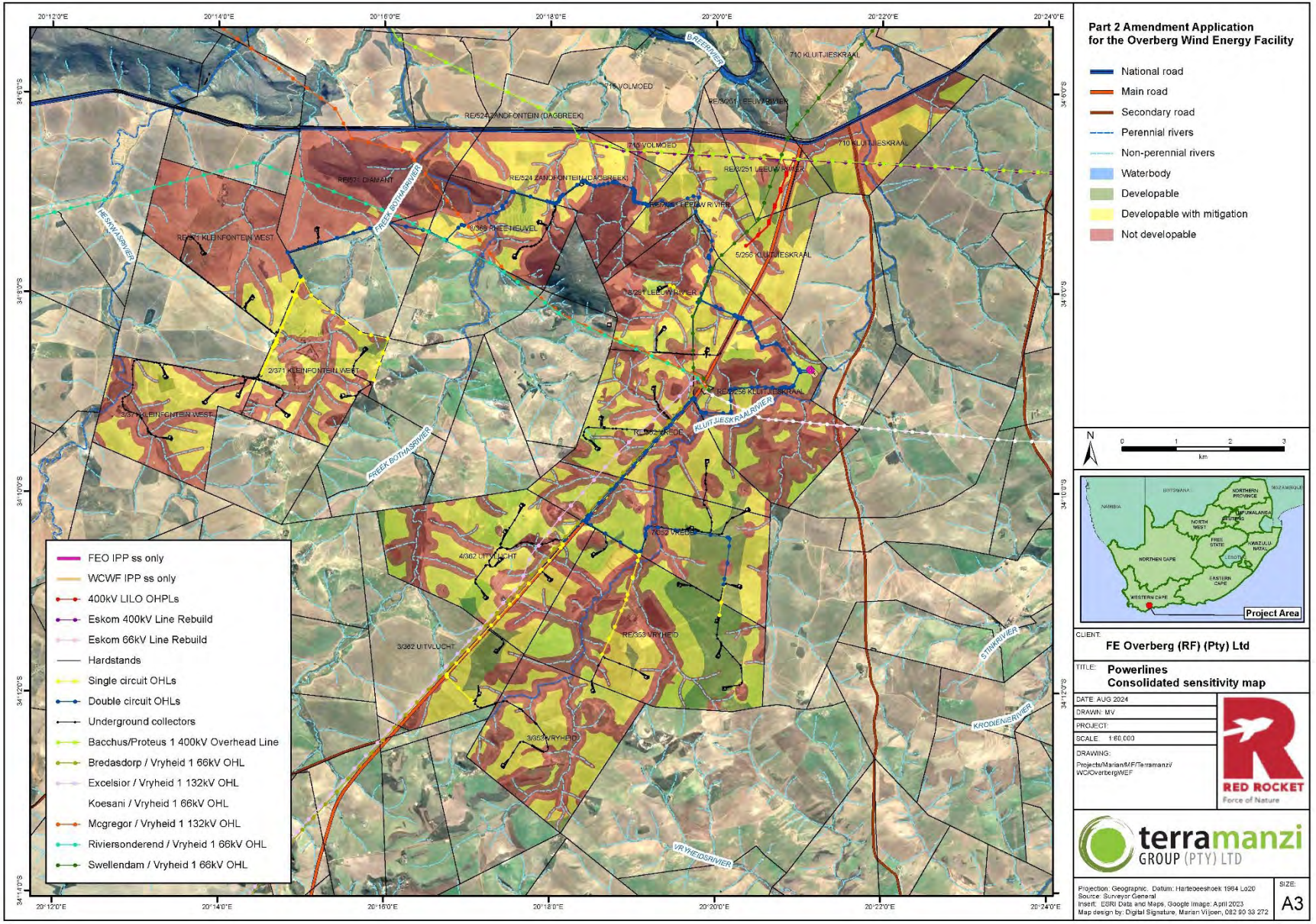


Figure 1.7: Opportunities and Constraints Map (O&C) for the Powerlines (11 August 2024).

Table 1.3. The GPS coordinates of the WEF and associated infrastructure.

WTG Number	Latitude	Longitude
1	34° 9'28.02"S	20°13'26.13"E
2	34° 9'6.97"S	20°13'49.98"E
3	34° 8'51.83"S	20°13'21.93"E
4	34° 9'2.80"S	20°14'13.84"E
5	34° 9'2.49"S	20°15'29.25"E
6	34° 9'14.72"S	20°14'50.40"E
7	34° 8'33.86"S	20°15'46.57"E
8	34° 7'59.12"S	20°14'53.14"E
9	34° 8'3.17"S	20°14'25.08"E
10	34° 7'37.42"S	20°13'49.19"E
11	34° 7'21.79"S	20°15'10.77"E
12	34°11'38.69"S	20°20'1.97"E
13	34°10'52.98"S	20°18'0.80"E
14	34° 7'38.87"S	20°17'33.66"E
15	34° 7'17.51"S	20°17'51.29"E
16	34° 6'54.38"S	20°18'23.06"E
17	34°10'55.38"S	20°19'33.17"E
18	34° 7'57.61"S	20°19'18.02"E
19	34° 8'21.01"S	20°19'22.80"E
~~20~~	~~34° 7'15.98"S~~	~~20°19'4.22"E~~
21	34° 8'56.78"S	20°19'14.66"E
22	34° 8'33.55"S	20°19'53.86"E
23	34°10'23.02"S	20°17'28.15"E
24	34° 9'14.91"S	20°18'36.91"E
25	34° 9'34.15"S	20°18'34.68"E
26	34° 9'40.20"S	20°19'53.76"E
27	34°10'9.65"S	20°20'23.60"E
28	34°10'20.98"S	20°19'41.68"E
29	34°10'56.34"S	20°20'18.28"E
30	34°11'17.81"S	20°20'0.88"E
31	34°11'57.77"S	20°20'5.92"E
32	34°11'51.26"S	20°19'10.96"E
33	34°11'59.88"S	20°18'31.74"E
34	34°10'37.57"S	20°18'30.96"E
35	34°10'7.31"S	20°17'39.96"E
36	34°10'39.89"S	20°17'24.96"E
37	34°11'3.95"S	20°17'14.18"E
38	34°11'36.13"S	20°17'20.94"E
39	34°12'44.82"S	20°17'26.22"E
40	34°12'1.87"S	20°17'9.39"E
33kV/132kV IPP Substations (1.4ha)	**Latitude**	**Longitude**
WCW IPP Substation (0.7ha)		
Middle point	34° 8'48.15"S	20°21'10.80"E
Corner 1	34° 8'50.00"S	20°21'11.14"E
Corner 2	34° 8'48.00"S	20°21'8.65"E

Corner 3	34° 8'46.31"S	20°21'10.61"E
Corner 4	34° 8'48.30"S	20°21'13.10"E
FEO IPP Substation (0.7ha)		
Middle point	34° 8'46.27"S	20°21'8.29"E
Corner 1	34° 8'47.98"S	20°21'8.63"E
Corner 2	34° 8'45.97"S	20°21'6.14"E
Corner 3	34° 8'44.28"S	20°21'8.10"E
Corner 4	34° 8'46.30"S	20°21'10.60"E
Gatehouse & Security Building	Latitude	Longitude
Middle Point	34° 8'42.03"S	20°21'5.55"E
Corner 1	34° 8' 40.71”S	20° 21' 5.06”E
Corner 2	34° 8' 41.72”S	20° 21' 4.19”E
Corner 3	34° 8' 43.21”S	20° 21' 6.02”E
Corner 4	34° 8' 42.26”S	20° 21' 6.95”E
Control Centre	Latitude	Longitude
Middle Point	34° 8'43.46"S	20°21'7.26"E
Corner 1	34° 8' 42.28”S	20° 21' 6.99”E
Corner 2	34° 8' 43.23”S	20° 21' 6.02”E
Corner 3	34° 8'44.59"S	20°21'7.73"E
Corner 4	34° 8'43.73"S	20°21'8.73"E
Warehouse & Workshop	Latitude	Longitude
Middle Point	34° 8'35.65"S	20°20'6.90"E
Corner 1	34° 8' 33.05”S	20° 20' 6.87”E
Corner 2	34° 8' 37.12”S	20° 20' 4.50”E
Corner 3	34° 8' 38.15”S	20° 20' 6.96”E
Corner 4	34° 8' 34.24”S	20° 20' 9.41”E
O&M Building	Latitude	Longitude
Middle Point	34° 8'32.07"S	20°20'8.53"E
Corner 1	34° 8' 33.82”S	20° 20' 8.54”E
Corner 2	34° 8' 31.01”S	20° 20' 10.45”E
Corner 3	34° 8' 30.19”S	20° 20' 8.72”E
Corner 4	34° 8' 33.07”S	20° 20' 6.89”E
Visitors Centre	Latitude	Longitude
Middle Point	34° 8'29.24"S	20°20'10.44"E
Corner 1	34° 8'31.01"S	20°20'10.46"E
Corner 2	34° 8' 28.14”S	20° 20' 12.31”E
Corner 3	34° 8' 27.35”S	20° 20' 10.56”E
Corner 4	34° 8' 30.20”S	20° 20' 8.74”E
Laydown Area 1 (6Ha)	Latitude	Longitude
Corner 1	34° 8' 24.91”S	20° 14' 41.25”E
Corner 2	34° 8' 19.58”S	20° 14' 44.29”E
Corner 3	34° 8' 12.82”S	20° 14' 33.75”E
Corner 4	34° 8' 18.80”S	20° 14' 31.18”E
Laydown Area 2A (3Ha)	Latitude	Longitude
Middle Point	34° 9'19.35"S	20°18'52.37"E
Corner 1	34° 9'21.33"S	20°18'58.18"E
Corner 2	34° 9'18.14"S	20°18'58.42"E
Corner 3	34° 9'17.55"S	20°18'46.76"E
Corner 4	34° 9'20.74"S	20°18'46.54"E
Laydown Area 2B (3Ha)	Latitude	Longitude
Middle Point	34° 9'35.67"S	20°19'4.19"E

Corner 1	34° 9' 33.97”S	20° 19' 10.64”E
Corner 2	34° 9' 33.12”S	20° 19' 5.41”E
Corner 3	34° 9' 33.74”S	20° 19' 1.65”E
Corner 4	34° 9' 36.82”S	20° 18' 59.58”E
Corner 5	34° 9' 38.80”S	20° 19' 2.87”E
Corner 6	34° 9' 38.51”S	20° 19' 5.67”E
Laydown Area 3 (6Ha)	Latitude	Longitude
Middle Point	34°11'54.86"S	20°17'3.46"E
Corner 1	34° 11' 49.88”S	20° 17' 8.26”E
Corner 2	34° 11' 49.56”S	20° 17' 0.44”E
Corner 3	34° 11' 59.26”S	20° 16' 59.75”E
Corner 4	34° 11' 59.61”S	20° 17' 7.60”E
Construction Cape (5.4Ha)	Latitude	Longitude
Corner 1	34° 8' 33.58”S	20° 20' 13.91”E
Corner 2	34° 8' 28.14”S	20° 20' 17.01”E
Corner 3	34° 8' 26.42”S	20° 20' 10.12”E
Corner 4	34° 8' 37.04”S	20° 20' 3.46”E
Corner 5	34° 8' 38.19”S	20° 20' 7.01”E
Corner 6	34° 8' 33.71”S	20° 20' 9.77”E
Batching Plant 1 (1.5Ha)	Latitude	Longitude
Middle Point	34° 6'37.55"S	20°17'34.29"E
Corner 1	34° 6' 39.77”S	20° 17' 32.62”E
Corner 2	34° 6' 39.69”S	20° 17' 36.48”E
Corner 3	34° 6' 34.86”S	20° 17' 36.59”E
Corner 4	34° 6' 34.87”S	20° 17' 32.61”E
Batching Plant 2 (1.5Ha)	Latitude	Longitude
Middle Point	34° 9'6.45"S	20°19'43.89"E
Corner 1	34° 9' 3.71”S	20° 19' 43.49”E
Corner 2	34° 9' 4.95”S	20° 19' 42.32”E
Corner 3	34° 9' 5.69”S	20° 19' 42.66”E
Corner 4	34° 9' 6.82”S	20° 19' 42.78”E
Corner 5	34° 9' 7.54”S	20° 19' 42.96”E
Corner 6	34° 9' 8.69”S	20° 19' 43.78”E
Corner 7	34° 9' 9.93”S	20° 19' 44.43”E
Corner 8	34° 9' 10.50”S	20° 19' 45.52”E
Corner 9	34° 9' 11.25”S	20° 19' 46.43”E
Corner 10	34° 9' 13.22”S	20° 19' 47.71”E
Corner 11	34° 9' 12.41”S	20° 19' 48.73”E
Batching Plant 3 (1.1Ha)	Latitude	Longitude
Middle Point	34° 9'0.81"S	20°19'42.24"E
Corner 1	34° 8' 59.39”S	20° 19' 43.65”E
Corner 2	34° 8' 58.94”S	20° 19' 43.18”E
Corner 3	34° 8' 58.03”S	20° 19' 42.92”E
Corner 4	34° 8' 56.74”S	20° 19' 43.25”E
Corner 5	34° 8' 56.72”S	20° 19' 42.40”E
Corner 6	34° 8' 58.00”S	20° 19' 41.86”E
Corner 7	34° 8' 59.32”S	20° 19' 41.73”E
Corner 8	34° 9' 0.80”S	20° 19' 40.96”E
Corner 9	34° 9' 1.67”S	20° 19' 40.78”E
Corner 10	34° 9' 2.56”S	20° 19' 40.88”E
Corner 11	34° 9' 3.88”S	20° 19' 41.72”E

Corner 12	34° 9' 3.88"S	20° 19' 42.23"E
Corner 13	34° 9' 3.68"S	20° 19' 42.63"E
Corner 14	34° 9' 2.56"S	20° 19' 43.74"E

1.3 ENVIRONMENTAL MANAGEMENT PROGRAMME

The Project was initially granted an EA on 24 October 2022 with DFFE Reference number: 14/12/16/3/3/1/2556. As per **Condition 14** of the EA, the EMPr and Layout were not approved.

A Part 2 Amendment Process commenced in November 2023 to approve the EMPr and Layout and to comply with certain Conditions of Authorisation of the EA, specifically Conditions 13 through to Condition 19. The Layout (dated 06 October 2023) and EMPrs (main facility EMPr and generic EMPrs dated January 2024) were approved by the DFFE via the Part 2 Amendment Process on 15 March 2024 (14/12/16/3/3/1/2556/AM1), and the following Management Plans were also approved:

1. Aquatic Rehabilitation Plan (November 2023)
2. Transportation Management Plan (November 2023)
3. Stormwater Management Plan (November 2023)
4. Fire Management Plan (October 2023)
5. Re-vegetation and Habitat Rehabilitation Plan (November 2023)
6. Chance Fossil Find Procedure (July 2022)

This EMPr and Revised Final Layout (11 August 2024) have been adjusted in response to the engagement's with Hawkwatch International, Birdlife SA, ORCT and the Client.

13. ***The Overberg WEF Final Layout dated 11 August 2024 is approved and must be implemented and adhered to. Any further changes pertaining to the Layout would need to be updated as per the applicable Regulations at that time****. ~~A final site layout plan for the Overberg Wind Energy Facility, substation and all associated infrastructure, as determined by the detailed engineering phase and micro-siting of the wind turbine positions, and all mitigation measures as dictated by the final site layout plan, must be submitted to the Department for approval prior to construction. A copy of the final site layout map must be made available for comments to registered Interested and Affected Parties and the holder of this Environmental Authorisation must consider such comments. Once amended, the final development layout map must be submitted to the Department for written approval prior to commencement of the activity. All available biodiversity information must be used in the finalisation of the layout map. Existing infrastructure must be used as far as possible e.g., roads. The layout map must indicate the following:~~*

    13.1. ~~The position of wind turbines and associated infrastructure;~~

    13.2. ~~Internal and access roads indicating width;~~

    13.3. ~~The BESS, substation(s) inverters and / or transformer(s) sites including their entire footprints;~~

    13.4. ~~Connection routes {including pylon positions) to the distribution/transmission network;Buildings, including accommodation;~~

    13.5. ~~All existing infrastructure on the site;~~

    13.6. ~~Wetlands, drainage lines, rivers, stream and water crossing of roads and cables;~~

    13.7. ~~All sensitive features e.g., Important Bird Areas, Critical Biodiversity Areas, Ecological Support~~

~~*Areas, heritage sites, wetlands, pans and drainage channels that will be affected by the facility and associated infrastructure; and*~~

13.8. ~~*All "no-go" and buffer areas.*~~

14. ***The Environmental Management Programme (EMPr) (dated October 2024), all appendices and management plans are approved and must be implemented and adhered to. Any further changes to the EMPr would need to be updated as per the applicable Regulations at the time.*** ~~*submitted as part of the final BAR (Appendix D1) dated August 2022 is not approved and must be amended to include measures as dictated by the final site lay-out map and micro-siting, and the provisions of this Environmental Authorisation. The EMPr must be made available for comments by registered Interested and Affected Parties and the holder of this Environmental Authorisation must consider such comments. Once amended, the final EMPr must be submitted to the Department for written approval prior to commencement of the activity.*~~

15. *Any subsequent EMPr amendment must include the following:*

15.1. *All recommendations and mitigation measures recorded in the BAR and Specialist reports (2022), and subsequent Part 2 Amendments (March 2024).*

15.2. *All material undertakings and mitigation measures in the Memorandum of Understanding entered into between the Client and the Appellants.*

16. *The Generic Substation EMPr (dated October 2024) and appendices is approved and must be implemented and adhered to. Any further changes to the Generic Substation EMPr would need to be updated as per the applicable Regulations at the time.*

16.1. *All recommendations and mitigation measures recorded in the BAR and Specialist reports (2022), and subsequent Part 2 Amendments (March 2024) have been included in this Final Generic Substation EMPr.*

17. *Once approved the EMPrs must be implemented and adhered to. They shall be seen as dynamic documents and shall be included in all contract documentation for the development.*

18. *Changes to the approved EMPrs must be submitted in accordance with the EIA Regulations applicable at the time.*

19. *The Department reserves the right to amend the approved EMPrs should any impacts that were not anticipated or covered in the BAR and subsequent amendments, be discovered.*

Please note that this EMPr addresses the Preconstruction, Construction and Operation of the WEF and all associated infrastructure. Additionally, the Generic EMPr for the proposed IPP substation is appended to this EMPr (Annexure O), as follows:

1. Generic Environmental Management Programme (EMPr) for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity

2. STRUCTURE OF THIS EMPR

Sections

- **Section 1** provides an introduction to the Project.
- **Section 2** details the structure of this EMPr.
- **Section 3** deals with the terms of reference for this EMPr as well as identifies environmental risks and opportunities.
- **Sections 4 and 5** documents the environmental objectives, targets and measures for each environmental risk identified.
- **Section 6** deals with the implementation of the EMPr including the assignment of roles and responsibilities, visits by the ECO/ESCO, documented procedures and handling of complaints related to the Project.

Annexures

- **Annexure A** contains the Glossary
- **Annexure B** contains the generic Method Statement
- **Annexure C** contains relevant permits applicable to the proposed development (Environmental Authorisations as applicable to this Project)
- **Annexure D** contains design and planning documentation
- **Annexure E** contains a detailed copy of the recommended Roles and Responsibilities of the Environmental Control Officer (ECO/ESCO)
- **Annexure F** contains the Specialists Reports associated with the Overberg Wind Energy Facility
- **Annexure G** contains the EAP's Curriculum Vitae
- **Annexure H** contains the Environmental Authorisation (once available)
- **Annexure I** contains the Aquatic Rehabilitation Management Plan
- **Annexure J** contains the Traffic and Transportation Management Plan
- **Annexure K** contains the Stormwater Management Plan
- **Annexure L** contains the Fire Management Plan
- **Annexure M** contains the Re-vegetation and Habitat Rehabilitation Plan
- **Annexure N** contains the Chance Fossil Finds Procedure
- **Annexure O** contains the DFFE Generic EMPr for the 132kV/33kV IPP Substations

3. TERMS OF REFERENCE

3.1 EAP DETAILS, EXPERTISE AND INDEPENDENCE

In accordance with ***Appendix 4 of the NEMA EIA Regulations (2014, as amended)****:*

Details of –

The EAP who that prepared the report, and

The expertise of the EAP, including curriculum vitae

This Report was authored by Fabio Venturi, whose career spans over 20 years in the industry, across both the government and private sectors of the green economy. Fabio's entrepreneurial drive to innovate and influence has resulted in multiple industry firsts and awards. Fabio is an Accredited Professional with the GBCSA, a Certified Environmental Scientist, served on the South Africa Environmental Industry Body, that being the Western Cape Committee Branch of the South African Affiliate of the International Association for Impact Assessment (IAIAsa), and sat on the National Executive Committee (NEC) of IAIAsa, is a founding member of the Environmental Assessment Practitioner's Association of South Africa (EAPASA, #2021/4088), and is a Certified Carbon Footprint Analyst and Energy Efficiency Auditor. Fabio was assisted by the following Team members:

Tarryn Frankland, who reviewed this EMPr, is an Environmental Consultant holds a BSc in Geography and Environmental Management, and an MSc in Environmental Science. She has accumulated experience in the fields of environmental management, air quality and renewable energy. Tarryn is currently a junior Environmental Consultant for the Terramanzi Group (Pty) Ltd. Tarryn is a Candidate EAP (#2022/6205) registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA).

Chane Olckers is Operations Manager for the Terramanzi Group (Pty) Ltd and holds a BSc in Law (LLB) from the University of South Africa (UNISA). Chane is passionate about People, Project Management and the Environment and has accumulated experience across multiple sectors in the environmental industry. Chane has experience with environmental authorisation applications, basic assessment reports, scoping and environmental impact assessment reports, environmental management programmes, executing the public participation process, environmental compliance audits, environmental control officer (ECO) services, environmental screening, due diligence assessments as per project specifications.

Ludwig van der Merwe is a Senior Environmental Consultant at the Terramanzi Group (Pty) Ltd and is a reviewer of this Report. Ludwig holds a BSc (with Hons) in Conservation Ecology from the University of Stellenbosch and a Master of Environmental Management and Development from the Australian National University. He has four years of experience doing environmental management, environmental compliance, water use license applications and specialist report writing. Ludwig is registered as an EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA, 2020/2817), a Natural Scientist in the field of Ecological and Environmental Science (Cand. Pr.Sci.Nat) (133969) and is a member of the International Association for Impact Assessment (IAIAsa). His application for a Registered EAP and a Professional Natural Scientist with the relevant organisations are currently under review.

Bryan Cloete is an Environmental Consultant for the Terramanzi Group (Pty) Ltd and is a reviewer of

this Report. Bryan holds a BSc (with Hons) in Biodiversity and Conservation Biology and an MSc in Biodiversity and Conservation Biodiversity. He has accumulated four cumulative years' experience in the fields of environmental management, environmental compliance and specialist report writing. Bryan is registered as a Candidate EAP with the Environmental Assessment Practitioners Association of South Africa (EPASA) and is a member of the International Association for Impact Assessment (IAIAsa).

Ana Mosse is a Junior Environmental Consultant for the Terramanzi Group (Pty) Ltd. And is a reviewer of this Report. Ana holds a Diploma in Environmental Management from the Cape Peninsula University of Technology (CPUT), with experience in field assessments, collecting and analysing data, environmental checklists and carbon footprint. Ana has worked in diverse projects aimed at sustainability, conservation and environmental stewardship and is a member of the International Association for Impact Assessment (IAIAsa).

TMG hereby declares that they have no conflicts of interest related to the work of this Report. Specifically, TMG declares that they have no personal financial interests in the property and/or activity being assessed in this report, and that they have no personal or financial connections to the relevant property owners, developers, planners, financiers or consultants of the property or activity, other than fair remuneration for professional services rendered for this Report to the Competent Authority. TMG declares that the opinions expressed in this Report are independent and a true reflection of their professional expertise.

Please refer to Annexure G for the EAP's Curriculum Vitae

3.2 DEVELOPMENT CONSENT CONDITIONS

Please refer to Annexure B.

3.3 POLLUTION CONTROL APPROVALS

Not applicable.

3.4 STATUTORY OBLIGATIONS

The applicant must incorporate the following statutory and best practice requirements as part of any contract documentation related to the construction, operation and decommissioning of the proposed development:

3.3.1 The National Environmental Management Act, Act 107 of 1998 (NEMA)
3.3.2 National Environmental Management: Biodiversity Act 10 of 2004 (as amended)
3.3.3 National Water Act, 1998 (Act No. 36 of 1998) (as amended)
3.3.4 National Heritage Resources Act, Act 25 of 1999 (as amended)
3.3.5 The National Environmental Management: Waste Act (March 2008)
3.3.6 Relevant SANS codes

3.4 CONTRACT OBLIGATIONS

It is understood that all contract documentation related to the construction, operation and decommissioning (if required) of the proposed development will include the conditions of this EMPr. It is important to note that the contract obligations must include the recording of any complaints on the project in the environmental register (defined below). Further, it is incumbent on the ECO/ESCO to keep an accurate audit trail showing compliance with the EMPr during construction phase.

3.5 ENVIRONMENTAL RISKS

The following environmental risks have been identified based on the available information:

Potential Impact	EMP reference
PRE-CONSTRUCTION	
Bulk Services Identification	Refer to Section 4.1
Permits	Refer to Section 4.1
Site Boundaries	Refer to Section 4.1
"No-Go" Areas	Refer to Section 4.1
Safety Considerations	Refer to Section 4.1
Contractor's SHE Officer	Refer to Section 4.1
Emergency Awareness	Refer to Section 4.1
Waste Management Control	Refer to Section 4.1
Stormwater and Erosion Control	Refer to Section 4.1
Pollution Control	Refer to Section 4.1
Training	Refer to Section 4.1
Construction Phase Site Layout	Refer to Section 4.1
Working Hours	Refer to Section 4.1
Heritage Management	Refer to Section 4.1
Wet Environments Management	Refer to Section 4.1
Bat Management	Refer to Section 4.1
Agricultural Management	Refer to Section 4.1
Noise Management	Refer to Section 4.1
Turbine Micro-siting	Refer to Section 4.1
Transportation of Wind Turbine Infrastructure	Refer to Section 4.1
CONSTRUCTION PHASE	
Site Establishment	Refer to Section 4.2
Site Maintenance	Refer to Section 4.2
Monitoring and Record Keeping	Refer to Section 4.2
Community relations (Social disruption)	Refer to Section 4.2
Working times	Refer to Section 4.2
Work Stoppage and Temporary Site Closure	Refer to Section 4.2
Existing Services and Infrastructure	Refer to Section 4.2
Prevention of damage to surrounding infrastructure	Refer to Section 4.2
Socio-economic Management	Refer to Section 4.2
Appropriate Construction Equipment Management	Refer to Section 4.2
Waste Management	Refer to Section 4.2
Trenching and excavations	Refer to Section 4.2
Excavations and stockpiling	Refer to Section 4.2

Sanitation	Refer to Section 4.2
Environmental Awareness	Refer to Section 4.2
Safety and First Aid Management	Refer to Section 4.2
Emergency preparedness	Refer to Section 4.2
Air Quality (Dust Impacts) Management	Refer to Section 4.2
(Wastewater and Contaminated) Water Quality Management	Refer to Section 4.2
Hazardous Material / Substance (Bitumen Oils and Lubricants) Management	Refer to Section 4.2
Hazardous Material (Fuels, Oils and Others) Management	Refer to Section 4.2
Workshop, Equipment Maintenance and Storage Management	Refer to Section 4.2
Noise Pollution Management	Refer to Section 4.2
Blasting/Drilling/Demolitions Management	Refer to Section 4.2
Concrete Mixing (Batching) Management	Refer to Section 4.2
Establishment of Construction Lay Down Area	Refer to Section 4.2
Fire Management	Refer to Section 4.2
Traffic Control Management	Refer to Section 4.2
Wet Environments Management	Refer to Section 4.2
Stormwater and Erosion Management	Refer to Section 4.2
Flora and Fauna Management	Refer to Section 4.2
Heritage Resources Management	Refer to Section 4.2
Avifaunal Mitigation Measures	Refer to Section 4.2
Bat Mitigation Measures	Refer to Section 4.2
Visual Management	Refer to Section 4.2
Topsoil Management	Refer to Section 4.2
Agricultural Management	Refer to Section 4.2
OPERATIONAL PHASE	
Hazardous Material (Fuels, Oils and Others) Management	Refer to Section 4.3
Solid waste management	Refer to Section 4.3
Wet Environments Management	Refer to Section 4.3
Stormwater and Erosion Management	Refer to Section 4.3
Access and Signage	Refer to Section 4.3
Maintenance	Refer to Section 4.3
Flora and Fauna Management	Refer to Section 4.3
Heritage Resource Management	Refer to Section 4.3
Avifaunal Management	Refer to Section 4.3
Bat Management	Refer to Section 4.3
Visual Management	Refer to Section 4.3
Agricultural Management	Refer to Section 4.3
Noise Management	Refer to Section 4.3
Emergency Management	Refer to Section 4.3
Fire Management	Refer to Section 4.3
DECOMMISSIONING PHASE	
Please refer to the Construction Phase Impacts	

3.6 ENVIRONMENTAL OPPORTUNITIES

It is required of the applicant to implement the principles below to minimise environmental risks defined above.

Sustainable development is best summarised by an extract from the United Nations World Commission on Environment and Development and reads as follows:

"*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs… As such it requires the promotion of values that encourage consumption standards that are within the bounds of the ecologically possible and to which all could reasonably aspire.*" (Our Common Future, WCED, 1987)[1].

The NEMA Principles state that sustainable development requires the consideration of all relevant factors including the following:

3.5.1 *That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*

3.5.2 *that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*

3.5.3 *that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*

3.5.4 *that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;*

3.5.5 *that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*

3.5.6 *that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*

3.5.7 *that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*

3.5.8 *that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*

In this regard, **sustainable technology alternatives** that are technologically and environmentally superior to “standard” technologies must be promoted at all times which will assist in meeting compliance with the above Principles. All recommendations relating to the above and as contained in this EMPr must therefore be implemented.

4. ENVIRONMENTAL OBJECTIVES, TARGETS AND MEASURES

4.1 PRE-CONSTRUCTION PHASE IMPACTS

4.1.1 Shadow Flicker

Objectives: To minimize any possible impact of Shadow Flicker on the nearby receptors.

Targets: To comply with any applicable guidelines regarding the management of visual impacts and Shadow Flicker on nearby receptors through the implementation of various mitigation measures.

Measures:

- Wind Turbines which fall into the Shadow Flicker Envelope would need to be relocated out of this zone in order for the impact of Shadow Flicker to be mitigated completely.

4.1.2 Bulk Services Identification

Objectives: To minimise any possible damage to bulk services as a result of pre-construction and construction related activities.

Targets: To comply with any local authority by-laws regarding bulk services and to avoid additional costs and potential project delays due to damage to these services.

Measures:

- If any bulk services are required to be relocated and/or re-routed, then the appropriate permits/approvals must be sought.
- The location of existing bulk services must be determined to prevent accidental damage to these facilities.

4.1.3 Permits

Objectives: To ensure that the necessary permits regarding any activities related to construction activities are in place prior to construction starting.

Targets: To ensure that the construction works can proceed without possible delays and/or legal repercussions during building works as a result of outstanding permits and/or non-compliance with permits.

Measures:

- The client shall issue a list of applicable permitting conditions together with the respective permits/authorisations to the ECO/ESCO prior to the start of construction works.
- Permits are to be acquired from the relevant authorities should protected or Red Data List (RDL) floral species be removed or relocated.

4.1.4 Site Boundaries

Objectives: To ensure that site boundaries are agreed to by the ECO/ESCO, Principal Agent and Contractor prior to the start of the site operations.

Targets: To contain construction activities to the development site/s and prevent unauthorised access

(pedestrian or vehicular) and to demarcate potentially sensitive areas and or vegetation.

Measures:

- The Contractor must fence or clearly demarcate the area where construction activities are taking place.
- Access to the site must be restricted, to ensure that members of the public are not able to gain access other than via the designated, controlled access points.

4.1.5 Site Layout

Objectives: Determine and define layout on site

Targets: To comply with the approved Final Layout.

Measures:

- Determine the site for the construction camp in collaboration with the Project Manager and ECO/ESCO before the moving onto site, such that it takes into consideration:
    - The need to be more than 50 meters from a water body in a position that will facilitate the prevention of storm water runoff from the site from entering a water body.
    - The risk of public nuisance through, for example, noise generation, visual intrusion, light pollution or disruption to access.
    - Security implications.
- The construction camp must also be of sufficient size to accommodate the needs of all Sub Contractors that may work on the project.
- Submit to the engineer for his/her approval a site layout plan at least seven days before construction can begin.
- Provide graphical representation with detailed notes of the location, layout and method of establishment of the construction camp, including the following:
    - The extent of the Contractors site camp, and other required areas if not located within the site camp
    - All Contractor's buildings, and/or offices
    - Lay down areas
    - Vehicle and plant storage areas, including wash areas
    - Workshops and drip trays
    - Fuel storage areas (including filling and dispensing from storage tanks)
    - Cement/concrete batching areas (including the methods employed for the mixing of concrete and particularly the containment of runoff water from such areas and the method of transportation of concrete)
    - Other infrastructure required for the running of the project.

4.1.6 "No-Go" Areas

Objectives: To minimise any potential impacts to identified sensitive areas.

Targets: To prevent possible impacts to any identified sensitive areas on site.

Measures:

- Before any work commences on site, sensitive areas must be demarcated by the Contractor's

Environmental Officer (EO) in conjunction with the ECO/ESCO.

- A construction site layout plan must be compiled and approved by the ECO/ESCO, clearly stipulating where the ablutions, construction equipment, equipment, etc. are required to be placed, thereby not allowing any encroachments on the sensitive areas on site.
- Should additional working space be required at a later date, this must be agreed between the Principal Agent, Contractor, and ECO/ESCO.
- Authorisation from the Principal Agent must only be given once the potential impacts have been assessed by the ECO/ESCO. Any construction activities taking place prior to the above will constitute a serious violation of this EMPr and are liable to a fine as detailed within this EMPr.
- No vehicles must be allowed to drive through designated sensitive areas. The Contractor's EO to monitor the fences and signage on the No Go areas on a monthly basis and keep records of such monitoring.

4.1.7 Safety considerations

Objectives: Ensure safety of staff on site as well as general public.

Targets: To comply with any respective Health and Safety Legislation and Regulations applicable to the time so that the safety of the staff and general public is managed and mitigated.

Measures:

Provide details identifying what safety precautions will be implemented to ensure the safety of all staff, and the general public at large, on site during the life of the project. This will include protective clothing requirements for all types of construction activities on site, e.g. protection against dust, noise, falling objects, work in trenches, work at heights, etc.

4.1.8 Contractor's SHE Officer

Objectives: Appointment of the Contractors SHE Officer.

Targets: To comply with any respective Health and Safety Legislation and Regulations applicable to the time so that the safety of the staff and general public is managed and mitigated.

Measures:

- Implementation of safety measures, work procedures and first aid must be implemented on site.
- Workers should be thoroughly trained in using potentially dangerous equipment.
- Contractors must ensure that all equipment is maintained in a safe operating condition.
- A safety officer must be appointed.
- A record of health and safety incidents must be kept on site.
- Any health and safety incidents must be reported to the project manager immediately.
- First aid facilities must be available on site at all times.
- The contractor must ensure that all construction workers are well educated about HIV/ AIDS and the risks surrounding this disease. The location of the local clinic where more information and counselling are offered must be indicated to workers.
- Material stockpiles or stacks, such as, pipes must be stable and well secured to avoid collapse

and possible injury to site workers / local residents.

- Personal Protective Equipment (PPE) must be made available to all construction staff and their usage must be compulsory. Hard hats and safety shoes must be worn at all times and other PPE worn were necessary i.e., dust / masks, ear plugs etc.

4.1.9 Emergency procedures

Objectives: Compile emergency procedures to be implemented on site.

Targets: To comply with any respective Health and Safety Legislation and Regulation which deal with emergency procedures, and which applicable to the time so that the safety of the staff and general public is managed and mitigated.

Measures:

Provide details regarding all relevant emergency procedures that will be implemented for fire control and accidental leaks and spillages of hazardous substances (including fuel and oil). Detail the risk reduction measures to be implemented including firefighting equipment, fire prevention procedures and spill kits.

4.1.10 Waste management control

Objectives: Correct handling of solid and liquid waste on site.

Target: To comply with the waste management control measures stipulated in the approved EMPr to manage, mitigate and potentially reduce the impact of waste on the receiving environment.

Measures:

Provide details regarding how solid and liquid waste generated on the construction site and site camp will be collected, stored, transported and disposed of. Details of any service provider(s) appointed to manage this task must also be provided.

4.1.11 Stormwater and erosion control

Objectives: Adequate stormwater management on site.

Target: To comply with the stormwater erosion control measures stipulated in the approved EMPr to manage, mitigate and potentially reduce the impact of stormwater erosion on the receiving environment.

Measures:

Provide details of how stormwater emanating within or adjacent to the construction site may impact on construction activities. Details on how the Contractor will deal with stormwater runoff and potential erosion within the construction footprint must further be provided. Details of any service provider(s) appointed to manage this task must also be provided.

The Stormwater and Erosion Management Plan must be adhered to and must be implemented on site. Please refer to Annexure K of the EMPr

4.1.12 Pollution control

Objective: Effective pollution control implemented on site.

Target: To manage pollution on site through the control measures stipulated in the EMPr, with the purpose of reducing the effects different forms of pollution on the receiving environment.

Measures:
Expected solid waste types, quantities, methods and frequency of collection and disposal as well as location of disposal sites must be identified and stated in a Method Statement. The Method Statement shall further include methods of minimising, controlling, collecting and disposing of contaminated water, and details of any hazardous substances/materials to be used, together with the transport, storage, handling and disposal procedures for the substances.

4.1.13 Training

Objectives: To ensure that all staff working on site are adequately trained on the requirements of this EMPr and are legally compliant with relevant legislation.

Targets: To ensure that the requirements of this EMPr are understood and implemented by all staff (as and when required) on site.

Measures:

- The ECO/ESCO will provide induction training to all on-site personnel before being allowed to work on site. It is the duty of the Contractor's EO to provide weekly toolbox talks to their teams on site and keep records of these in the form of attendance registers.
- An interpreter should be provided as required.
- Employees who will be responsible for specific activities that require formal training (e.g., fire-fighting, first aid, store management and handling of chemicals) must acquire such training from accredited institutions

4.1.14 Construction phase site layout

Objectives: To designate areas on site for various types of construction related activities.

Targets: To ensure an efficient and orderly layout that promotes safe access.

Measures:

- The location of the Contractor's camp, toilet facilities and storage areas must be agreed to by the ECO/ESCO, Principal Agent and Contractor prior to the commencement of work at the site.
- A sketch diagram of the above is required by the ECO/ESCO.
- These areas must all be kept tidy, litter-free, sanitary and in good condition throughout the project.
- Any construction activities taking place prior to the above will constitute a serious violation of this EMPr and are liable to a fine as detailed within this EMPr.
- All development footprint areas must remain as small as possible and must not encroach onto no-go areas. It must be ensured that these areas are off-limits to construction vehicles and personnel unless these personnel are involved in rehabilitation activities. Very strict control of edge effects must be practiced.

4.1.15 Working Hours

Objectives: To designate working hours for construction related activities.

Targets: To ensure that the hours of operation shall be restricted to those stipulated by the local authority.

Measures:

- The Contractor shall at all times ensure that working hours are restricted to those stipulated by the local authority.
- Modifications to the above must only take place through the local authority and the ECO/ESCO must be notified in writing.

4.1.16 General Mitigation Measures

Objectives: To ensure that the general site is safe to use and in accordance with the relevant statutory Environmental and Occupational Health and Safety regulations and requirements.

Targets: To ensure that the general site is safe to use and in accordance with the relevant statutory Environmental and Occupational Health and Safety regulations and requirements.

Measures:

- Portable toilets must be supplied to the workforce in areas of activity. A licenced contractor must be appointed by the contractor to provide this facility, and ensure that wastes are correctly disposed of. Servicing must take place regularly, proof of which must be retained on site by the contractor.
- Waste disposal certificates for mobile chemical toilets must be retained for a minimum of five years.

4.1.17 Heritage, Archaeology and Palaeontology Management

Objectives: To aid in the conservation of heritage (including archaeological and palaeontological) resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of such resources.

Measures

- Any artefact collection or archaeological excavations are subject to a section 35 of the NHRA permit application process. Permits for mitigation measures must be applied for from Heritage Western Cape (HWC); and
- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the Environmental Management Programme execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.
- ~~Each identified archaeological sites within the WEF boundary (J003 – J009, G001) must be buffered by 50m and these buffers declared no-go areas prior and during the construction of the WEF.~~
- ~~If any archaeological material or human burials are uncovered during the course of~~

~~development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution~~

- Palaeontology
    - The EAP and ECO/ESCO must be informed of the very high palaeontological significance of the WEF area.
    - The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must be implemented during the lifetime of the WEF and must be included as part of the EMPr for this project.
    - If fossils are exposed during the lifetime of the project, a suitably qualified palaeontological specialist must be appointed to collectthem and to upgrade the "Chance Find Protocol" document, if required.
    - If deep (>2m) excavations into un-weathered sedimentary rocks of the Ceres Subgroup are planned as part of the construction of the WEF, these excavations must be monitored by a suitably qualified palaeontological specialist.
    - Fossils finds must be reported immediately to HWC.
    - Recommendations contained in the PIA must be approved by HWC for inclusion in the EMPr for the project.
- Archaeology
    - Each identified archaeological sites within the WEF boundary (J003 – J009, G001) must be buffered by 50m and these buffers declared no-go areas prior and during the construction of the WEF.
    - If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist.Such heritage is the property of the state and may require excavation and curation in an approved institution.
- <u>Cemeteries and Graves:</u>
    - The HIA recommended that if any human burials are uncovered during development, work in the immediate area must be halted and the remains made safe but left in situ. The finds must immediately be reported to the project archaeologist and HWC and arrangements made for an inspection to assess how the find will be dealt with.

4.1.18 Aquatic/ Wet Environments Management

<u>Objectives:</u> To aid in the conservation of wet environment resources, to minimise or prevent where possible the loss of aquatic habitats, and to promote the enhancement and good management of such features on site.

<u>Targets:</u> To ensure compliance with the statutory requirements relating to management of natural freshwater resources.

<u>Measures:</u>

- Access Roads:
    - Use existing roads or upgrade existing tracks to cross wetlands rather than

constructing entirely new roads wherever possible.

- Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.
- The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown.
- For any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

4.1.19 Agricultural Management

Objectives: To minimise or prevent, where possible, the loss and/or degradation of soils and land with high agricultural potential, and to manage soil erosion on site.

Targets: To ensure compliance with the statutory requirements relating to management of natural agricultural and soil resources.

Measures:

- For the management of the Loss of agricultural land and increased soil erosion, the following is proposed:
  - Once specific infrastructure sites are known, site specific measures can be devised for implementation and any potentially high risk sites can be identified.
  - Vegetation clearing should occur in a phased manner to minimise erosion and/or run-off.
  - Implement a storm water management, which will prevent erosion and will be an inherent part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control, where they occur on steeper slopes, must be kept in tact.
- Avoid areas under cultivation where reasonably practicable.

4.1.20 Terrestrial Biodiversity, Botany, and Terrestrial Fauna

Objectives: To minimise or prevent, where possible, the modification of habitats, habitat loss, and fauna; impacts.

Targets: To ensure compliance with the statutory requirements relating to management of natural terrestrial biodiversity, botanical and terrestrial fauna resources.

Measures:

- Modified Habitat Loss
    - ***Pre-construction walkthrough to verify the absence/presence of SCC and extent of alien invasive plant infestations.***
    - ***Draft an alien plant control plan, to be implemented from construction through to the decommissioning phase.***
    - ***If the proposed location of these infrastructure components will change to impact natural or semi-natural impact, a re-assessment of the potential impact on terrestrial plant species will be necessary.***
    - ~~Once the location infrastructure components is confirmed a re-assessment of the potential impact on terrestrial plant species will be necessary.~~
    - Search and rescue of SCC.
    - Collaboration between Landowners, FE Overberg (Pty) Ltd and Overberg Renosterveld Conservation Trust regarding conservation easement and ecosystem rehabilitation efforts going forward on the proposed development site must be initiated by the Applicant prior to the commencement of construction.
- ***Terrestrial Animal Species*** **-** Faunal impacts
    - ***The maximum use of the extensive available road network must be utilised where practically possible;***
    - ***Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the preferred habitat of the Yellow-winged Agile Grasshopper.***

The Re-Vegetation and Habitat Rehabilitation Plan must be adhered to can be reviewed under Annexure M of the EMPr

4.1.21 Avifauna Management

Objectives: To minimise or prevent the disturbance, displacement and direct mortality of avifaunal Species of Conservation Concern (see Annexure A for a definition).

Targets: To ensure compliance with the statutory and approved EMPr requirements relating to management of avifaunal resources.

Measures:

- The Developers or the Client shall appoint an Avifaunal Specialist where required or where obliged to do so in terms of the EMPr.
- Disturbance and Displacement of avifaunal Species of Conservation Concern
    - The footprint within Very High Sensitivity and High Sensitivity areas should be minimized and avoided wherever possible;
    - Laydown and other temporary infrastructure to be placed within very low sensitivity areas, preferably previously transformed areas, wherever possible;
    - Appropriate run-off and erosion control measures are to be implemented where required;
    - Existing roads and farm tracks should be used where possible;
    - The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths;
    - The Developers will employ an Avifaunal Specialist for nest surveying and monitoring

of the Project site in accordance with applicable guidelines.

- If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined), pre-construction activities within 500m of the breeding site must cease, and an Avifaunal Specialist shall be appointed by the Developer for further assessment of the situation and instruction on how to proceed.
    - Should a new nest be confirmed, within one day (24 hours) following its discovery the Developer and/or Avifaunal Specialist is required to inform BLSA and ORCT.
- The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.
- Maximum use of existing access road and servitudes;
- Existing and novel access roads are to be suitably upgraded or constructed to prevent damage and erosion resulting from increased vehicular traffic and construction vehicles
- The appointed Environmental Officer (EO) and Environmental Site Compliance Officer (ESCO) must be trained to identify the potential Red Data species as well as the signs that indicate possible breeding by these species. Training is to be conducted prior to construction.

- Direct Avifauna Mortality
    - A Three-tiered mitigation approach will be implemented on site comprising blade painting, OLSDOD and ASDOD will be used during daylight hours from the moment blades are turning. Results comparing the effectiveness of OLSDOD and ASDOD will be assessed annually and systematically adjusted by the Avifaunal Specialist appointed to the Project and made available to stakeholders (BLSA, EWT, ORCT, HWI) prior to adjustments, if any, being made. The Client reserves the right to reduce tiers of mitigations as determined and advised by an Avifaunal Specialist, in consultation with BLSA and ORCT.
    - Any holes dug e.g. for foundations should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter;
    - The installation of cattle grids should be done in such a manner as to allow the escape of chicks should they fall in Maximum use of existing access road and servitudes;
    - Temporary fencing must be suitably constructed, e.g. if double layers of fencing are required for security purposes they should be positioned at least 2m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences.
    - The type of bird flight diverter (BFD) and spacings of the BFDs must be optimised for Denham's Bustards and Blue Cranes in consultation with an avifauna specialist prior to their fitment; Internal power lines must be buried, unless it is not ecologically or technically feasible;
    - Internal power lines must be buried, unless it is not ecologically, technically or financially

feasible;
- All new collector lines and powerlines must be designed so they do avoid and/or minimise a risk of bird electrocution. This must be verified by a bird specialist.
- New above-ground overhead power lines to be constructed adjacent to existing transmission infrastructure where possible and pylons to be staggered (where possible) relative to existing pylon positions to increase the overall visibility of transmission infrastructure to avifauna such as bustards;
- Appropriate (Eskom-approved) Bird flight diverters (BFDs) to be affixed to the entire length of novel above-ground overhead power lines.

4.1.22 Bat Management

Objectives: To minimise or prevent, where possible, the disturbance, displacement or destruction of bats and bat roost areas.

Targets: To ensure compliance with the statutory requirements relating to management of bat resources.

Measures:

- Bat Roost disturbance and/or destruction
  - The height of the lower blade swept height must be maximised, and should not be lower than 40 m if possible as turbines with a lower ground clearance run the risk of reaching the fatality thresholds sooner.
  - It may be possible to limit roost abandonment by avoiding construction activities near roosts. No roosts were found on site but there may be more potential roosts that bats may be using including trees and buildings.
  - It is recommended that potential roosts, specifically trees and buildings, are buffered by 200m inside which no turbine infrastructure may be placed. These buffers have been mapped and are to blade tip. No construction activities must occur within 1km of any confirmed roost.
  - This impact must be reduced by limiting the removal of vegetation, particularly trees, as far as possible. Habitat modification should also not occur in the no-go areas of the sensitivity map.
  - The height of the lower blade swept height must be maximised, and should not be lower than 40 m if possible as turbines with a lower ground clearance run the risk of reaching the fatality thresholds sooner.

4.1.23 Noise Impact Management

Objectives: To minimise or prevent, where possible, negative noise impacts.

Targets: To ensure compliance with the statutory requirements relating to management of noise impacts.

Measures:

It is recommended that the applicant:

- ***Noise monitoring to define current ambient sound levels at selected NSR before the construction phase start.***
  - ***Applicant to re-evaluate the noise impact once the WTG specifications was finalised. Should noise modelling indicate noise levels higher than 45 dBA at NSR, the applicant must design a noise abatement programme (or use appropriate mitigation measures) that will ensure that operational noise levels are less than 45 dBA at all verified NSR.***

- Considering worst-case SPL, noise levels exceeds 45 dBA at NSR 8, 9, 40 and 48. The potential significance of noise impact due to night-time operational activities is moderate and mitigation is required and recommended to ensure that the significance of the noise impact is reduced. The following measures will reduce the significance of the impact to low:
    - The agreement between the landowner and the applicant that the dwellings will no further be used for residential purposes (any existing residential users to be moved before the operational phase). Agreements should be in writing; and
    - The applicant can select a WTG that allow certain operating modes where that decrease noise emission levels. The applicant can develop and implement a noise abatement program that commit the WEF to operating certain WTG in a quieter mode during certain conditions (certain wind directions and wind speeds).
- Re-evaluate the noise impact should the layout be revised (as part of a future amendment process of the Environmental Authorization) where:
    - any WTG, located within 2 500m from a confirmed NSR, are moved closer to the NSR;
    - any new WTG are introduced within 2 500m from an NSR;
    - the number of WTG within 2 500m from an NSR are increased
- Re-evaluate the noise impact should the applicant make use of a wind turbine with a maximum SPL exceeding 110.5 dBA re 1 pW;
- ~~Re-evaluate the noise impact once the final make and model of WTG was selected to ensure that the total noise levels will be less than 45 dBA during the operational phase at all structures used for residential purposes;~~

4.1.24 Social Impact Management

Objectives: To minimise or prevent, where possible, social and socio-economic impacts.

Targets: To ensure compliance with the statutory requirements relating to management of social and socio-economic impacts.

Measures:

Creation of local employment, training and business opportunities

- Employment
    - Where reasonable and practical, Preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.
    - Where reasonable and practical, the proponent should appoint local contractors and implement a 'locals first' policy, especially for semi and low-skilled job categories. However, due to the low skills levels in the area, the majority of skilled posts are likely to be filled by people from outside the area.
    - Where feasible and practical,, efforts should be made to employ local contactors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.
    - Where reasonable and practical, before the construction phase commences the proponent should meet with representatives from the SM to establish the existence of a skills database for the area. If such as database exists, it should be made available to the contractors appointed for the construction phase.
    - The local authorities, community representatives, and organisations on the interested and affected party database should be informed of the final decision regarding the

project and the potential job opportunities for locals and the employment procedures that the proponent intends following for the construction phase of the project.
    - Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.
    - The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.

- Business
    - Where reasonable and practical, the proponent should liaise with the SM with regards the establishment of a database of local companies, specifically BBBEE companies, which qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security companies etc.) prior to the commencement of the tender process for construction service providers. These companies should be notified of the tender process and invited to bid for project-related work.
    - Note that while preference to local employees and companies is recommended, it is recognised that a competitive tender process may not guarantee the employment of local labour for the construction phase.
- ~~Impact of construction work on local communities~~
    - ~~Preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.~~
    - ~~Preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase.~~
    - ~~The SEP and CHSSP should include a Grievance Mechanism that enables stakeholders to report resolve incidents.~~
    - ~~Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically for semi and low-skilled job categories.~~
    - ~~The proponent should consider the option of establishing a Monitoring Committee (MC) for the construction phase that representatives from local landowners, farming associations, and the local municipality. This MC should be established prior to commencement of the construction phase and form part of the SEP.~~
    - ~~The proponent and contractor should develop a Code of Conduct (CoC) for construction workers. The code should identify which types of behaviour and activities are not acceptable. Construction workers in breach of the code should be subject to appropriate disciplinary action and/or dismissed. All dismissals must comply with the South African labour legislation. The CoC should be signed by the proponent and the contractors before the contractors move onto site. The CoC should form part of the CHSSP.~~
    - ~~The proponent and the contractor should implement an HIV/AIDS and Tuberculosis (TB) awareness programme for all construction workers at the outset of the construction phase. The programmes should form part of the CHSSP.~~
    - ~~Influx of job seekers Preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.~~
    - ~~Preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase.~~
    - ~~The proponent, in consultation with the SM, should investigate the option of~~

~~establishing a MC to monitor and identify potential problems that may arise due to the influx of job seekers to the area. The MC should also include the other proponents of energy projects in the area.~~

- ~~The proponent should implement a "locals first" policy, specifically with regard to~~
- ~~unskilled and low skilled opportunities.~~
- ~~The proponent should implement a policy that no employment will be available at the gate~~

- ~~Risk to safety, livestock, farm infrastructure and farming operations~~
  - ~~Preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.~~
  - ~~Preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase.~~
  - ~~The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase will be compensated for. The agreement should be signed before the construction phase commences~~
  - ~~The proponent should establish a MC and CoC for workers (see above).~~
  - ~~The proponent should implement a Grievance Mechanism that provides local farmers with an effective and efficient mechanism to address issues related to report issues related to damage to farm infrastructure, stock theft and poaching etc/~~
- ~~Increased fire risk~~
  - ~~The proponent should prepare a Community Health, Safety and Security Plan (CHSSP) prior to commencement of the construction phase.~~
  - ~~The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc., during the construction phase will be compensated for. The agreement should be signed before the construction phase commences.~~
  - ~~Establishment of a fire break around the construction area before work commences should be investigated.~~

4.1.25 Transportation of wind turbine infrastructure and access routes

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to mitigate traffic impacts to an acceptable level.

Targets: To ensure compliance with the local authority by laws and traffic regulations, traffic Specialist recommendations and any other statutory requirements relating to traffic Management.

Measures:

- Details, including a drawing, showing where and how the access points and routes will be located and managed must be provided in a Method Statement. The time of day and route from the relevant port of arrival of the components to the development site must be clearly indicated and adhered to by the transport service provider, as far as is reasonably practicable.
- ***The traffic management plan in Annexure J must be implemented and adhered to.***

4.1.26 Visual Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to mitigate visual impacts to an acceptable level.

Targets: To ensure compliance with the local authority by laws, Visual Specialist recommendations and any other statutory requirements relating to Visual Management.

Measures:

- Visual effect of construction activities on scenic resources and sensitive receptors
- Temporary laydown areas and batching plants to be placed away from the N2 and R319 to avoid visual impact on users of these routes

4.2 CONSTRUCTION PHASE IMPACTS

The developer is to ensure that the contractor complies with all mitigation measures during the construction period. The major sources of potential impacts include, the turbine footprint construction, the construction of buildings and infrastructure, the construction of roads and bridges, and vehicle operation, and spillages.
The following is not allowed on site:

- No poaching of any animals or harvesting of any flora;
- No construction camp, for workforce accommodation is allowed on site; contractors are to ensure suitable housing for staff outside of the development footprint;
- No cooking or fires allowed on site; and
- No alcohol or drugs are allowed on site.

4.2.1 Potential Construction Phase Impacts

The following impacts are likely to occur during the construction of the Overberg WEF. Specific mitigation measures for each impact are presented in the below.

- The accidental, negligent, or deliberate spillage or inappropriate disposal of hazardous substances could result in air, soil and water pollution and may affect the health and well-being of people, plants and animals.
- Excessive noise could be made by the construction activity which would affect neighbouring communities.
- Potential damage to the soil structure, soil compaction and loss of soil fertility.
- Loss of the vegetation cover and increased erosion risks.
- Dust related problems.
- Safety hazards to the public, workers and animals in the area.
- Disturbance to local hydrology from construction activities.
- Pollution of surface water bodies.
- Dust can be a nuisance to the construction workforce and to the public and can negatively affect the growth and recovery rate of plants. Potential sources of fugitive dust include, but are not limited to:
    - Demolition of concrete foundations and existing buildings;
    - Grading / movement of soil;
    - Transportation and unloading of construction materials;
    - Vehicular movement over unsurfaced roads and tracks; and,
    - Wind erosion of stockpiles.
- Construction activities will result in the exposure of the soil to erosive factors, i.e., wind and water, and the compaction of the soil in other areas.
- Illegal poaching and collection of animals and plant material.
- Loss of established indigenous and exotic habitat.
- Unnecessary trampling of vegetation and harm to animals.
- Degradation of the scenic quality due to the major earthworks and any unsightly structures.
- Damage or loss of important cultural, historical or pre-historical sites and artefacts.
- Damage to existing roads and tracks, power lines, pipelines, etc.

- Dangerous conditions near road.
- Trespassing and illegal access onto land.

4.2.2 Site Establishment

Objective: Identify, establish and produce a Site Layout Plan

Site Identification

- Produce a Site Layout Plan illustrating the location and layout of the proposed site camp in each cluster and the working areas. This plan must be approved by the PM.
- Ensure that the site camp is fenced and provided with a lockable access gate to prevent vandalism, theft and unauthorised entry by the public, where necessary.
- Obtain approval from the landowner prior to establishing the site camp in the event that the site camp is to be situated on private land.
- Produce a photographic record of the area earmarked for the site camp prior to site establishment. This will serve as the benchmark against which rehabilitation will be measured and shall be kept in the site environmental file.
- Ensure that the site camp is reinstated to its original agricultural condition once the project has been completed.
- Do not use the land for the site camp for any purpose other than for the proper carrying out of the works under the contract.

Site Demarcation

- Prior to construction commencing, the ECO/ESCO, Contractor, and/or PM shall inspect the site and identify any sensitive environments.
- Where necessary, demarcate the construction footprint areas using materials as specified by the PM. These must include fencing, rope, hazard tape, wire mesh, or other approved materials or means.
- The Contractor will be required to maintain all demarcation fencing and other demarcating materials for the duration of construction activities or as otherwise instructed by the PM.

Vegetation Clearance

- Vegetation clearance shall take place strictly in accordance with the Site Layout Plan developed by the Contractor.
- Collection or wilful damage to any plants outside of the areas demarcated for clearing is not allowed.
- Only trees and shrubs directly affected by the works may be felled or cleared, subsequent to approval from the ECO/ESCO or PM in writing.
- *Protection of natural features*
    - The Contractor shall not deface, paint, damage or mark any natural features situated in or around the Site for survey or other purposes unless agreed beforehand with the ECO/ESCO. Any features affected by the Contractor in contravention of this clause shall be restored/rehabilitated to the satisfaction of the ECO/ESCO.
    - The Contractor shall not permit his employees to make use of any natural water sources (e.g.

springs, streams, and open water bodies) for the purposes of swimming, personal washing, drinking and the washing of machinery or clothes.

Protection of archaeological and paleontological sites

- Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the national Heritage Resources Act 25 of 1999 (NHRA).
- If at any stage during construction any semblance of a fossil were to be observed, it must be reported to the authorities so that it can be removed safely.
- Should any archaeological or cultural heritage resources as defined and protected by the NHRA and not reported on in this report be identified during the course of construction, the developer should immediately cease operation in the vicinity of the find and report the site to Heritage Western Cape or SAHRA.

Topsoil

- Topsoil can only be stripped from the following areas in or adjacent to the construction site or site camp:
    - Areas which are to be used for temporary storage of soil and/or materials.
    - Areas which could be polluted by any aspect of the construction activity.
    - Areas within the footprint of the proposed infrastructure to be constructed.
- Undertake the stripping of topsoil in a manner that minimises erosion by wind or runoff.
- Topsoil will be stripped to a depth not exceeding 300mm from the original ground level, unless greater depth is required during the execution of the construction phase of the project.
- Clear areas from which the topsoil is to be removed of any foreign material which may come to form part of the topsoil during removal including bricks, rubble, any waste material, litter, excess vegetation and any other material which could reduce the quality of the topsoil.
- Ensure that subsoil and topsoil are not mixed during stripping, excavation, reinstatement and rehabilitation.
- Subsoil can be used – if suitable – for road construction.
- Soils must be exposed for the minimum time possible once cleared.
- Topsoil will be temporarily stockpiled, separately from (clay) subsoil and rocky materials.
- Topsoil will be stockpiled in areas designated by the ECO/ESCO.
- Topsoil (300mm) should be stored at an appropriate site on each farm for future rehabilitation after decommissioning.
- Soil must not be stockpiled on drainage lines or near watercourses without proper risk assessment conducted and prior consent from the ECO/ESCO. Stockpiles will either be vegetated with indigenous vegetation, covered by a suitable fabric or maintained in some other suitable way approved by the PM and ECO/ESCO to prevent erosion and invasion of weeds.
- Stockpiles must be monitored for weed infestation and cleared of weeds when necessary.
- Stockpiled topsoil will not be compacted and shall not exceed 2m in height.

4.2.3 Site Maintenance

Objective: Adequate maintenance of site.

Measures:

Workshop

- If an on-site workshop is to be established for the duration of construction, obtain the approval of the PM prior to commencing activities and confine maintenance activities to the identified workshop area.
- Ensure that there is no contamination of the soil or surface water from the on-site workshop.
- Maintain a spill control kit and staff appropriately trained to utilise it.

Equipment Maintenance and Storage

- Keep all vehicles and equipment in good working order in the site camp or an area approved by the PM.
- Inspect all vehicles and plant daily for leaks and spills. Log and sign off maintenance checks a in a site maintenance file after each inspection.
- Repair or remove leaking equipment from the site immediately, where practicable.
- Stationary plant must be supplied with drip trays to prevent soil contamination after hours and when not in use.

Cooking Facilities

- Designate an all-weather cooking and eating area, subject to the approval of the PM.
- Any cooking on site shall be done on either well-maintained gas cookers or by contained fires (e.g. in a drum or braai place), located away from flammable vegetation or construction materials in designated areas. No fires for heating purposes shall be allowed on site.
- Keep the cooking and eating areas tidy and clean at all times to prevent the luring of vermin, domesticated or wild animals.
- Provide sufficient bins with vermin and wind proof lids for waste disposal, within a 5m radius of the cooking/eating area at all times.

Water for human consumption

Water for human consumption must be available at the site offices and at other convenient locations on site at all times.

4.2.4 Monitoring and Record Keeping

Objective: Maintain an environmental site file containing necessary documentation

Measures Monitoring and record keeping on site

- Inspect the site on a daily basis to ensure that the environmental specifications of the EMP are adhered to.Provide the PM with a written report, at least fortnightly, detailing compliance with the EMP as well as environmental performance.
- Maintain a record of incidents (spills, impacts, complaints, legal transgressions, etc.) as well as corrective and preventive actions taken, for submission to the PM at the scheduled project meetings.
- Maintain an environmental site file containing at a minimum the following documents:
    - Final Environmental Impact Assessment Report compiled for the Western Cape WEF;
    - Latest version of EMPr;
    - Final design documents and diagrams issued to and by the Contractor;
    - All communications detailing changes of design/scope that may have environmental implications;
    - Site monitoring reports;

- Complaints register;
- Training manual;
- Training attendance registers;
- Incident and accident reports;
- Emergency preparedness and response plans;
- Disciplinary procedures;
- Monthly site construction meeting minutes;
- All relevant permits;
- Letters or legal documents authorising identified site staff to act in a specified authoritative capacity relating to the protection and preservation of the environment, and on behalf of the Contractor;
- Environmental Authorisation and Amendments on the EIA; and
- All method statements from the Contractor for all phases of the project.

4.2.5 Community relations (Social disruption)

Objective: Ensure good relations with surrounding community

Measures:

- Erect and maintain information boards in the positions, quantities, designs and dimensions required by municipal specifications. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the ECO/ESCO.
- Keep a Complaints Register on site, containing contact details of complainants, the nature of the complaint, details on the complaint itself, as well as the date and time that the complaint was made and resolved.
- The Contractor, or if required the ECO/ESCO, shall be responsible for responding to queries and/or complaints and may request assistance from the Contractor's Management Staff.
- All abutting neighbours (or as required) must be notified of the proposed construction phase activities at least two weeks before they commence.
- The Contractor must record and repair any damage that the construction works may cause to neighbouring properties, to the satisfaction of the ECO/ESCO.
- The ECO/ESCO must be notified in writing of any incidents relating to the above.Staff shall in no way be a nuisance to residents or clients seeking the services of the established businesses in the area. Any complaints received by the PM will be investigated, addressed and, if deemed necessary, the relevant persons will be suspended from the project.
- Give at least seven days' notice to the residents in the vicinity of the construction activities of his intention to begin construction activities in their area.
- The PM may request a representative of the Contractor to be available to discuss issues raised by residents and make information available to them on construction activities.

4.2.6 Working times

Objective: Establish clear daily working times

Measures:

- Daily timeframes for construction works is to be agreed to by the Contractor, ECO/ESCO and landowners.

- For any deviation from the ordinary working hours the written approval of the PM must be obtained before such works commences.

4.2.7 Work Stoppage and Temporary Site Closure

Objective: Determine when work stoppage and site closure is required

Measures

The Project Engineer, in consultation with the ECO/ESCO, shall have the right to order work to be stopped in the event of significant infringements of the Project Environmental Specifications until the situation is rectified in compliance with the specifications. In this event, the Contractor shall not be entitled to claim for delays or incurred expenses.

4.2.8 Existing Services and Infrastructure

Objective: Note position of existing services and infrastructure on development site

Measures:

- Take cognisance of the position of existing services and infrastructure (e.g. roads, pipelines, power lines and telephone services) that may get damaged due to construction activities.
- Ensure that existing services are not damaged or disrupted unless required by the contract and with the permission of the PM.
- The repair and reinstatement of any infrastructure that is damaged or services that are interrupted during construction will be done at the expense of Contractor's and shall receive top priority over all other activities.
- Adhere to the time limit for the repairs as stipulated in consultation with the PM.
- Be extra vigilant, during the construction activities, to prevent damage from occurring to any buildings, road furniture and motor vehicles located in the vicinity of the construction site.
- The Contractor shall be responsible, at his own cost, for the repair and reinstatement of any damages to existing structures resulting from the construction works. Investigate any complaints received from the public regarding any of the listings above. If substantiated, the above listings may result in a fine, or suspension or dismissal of the guilty party.

4.2.9 Socio-Economic Management:

Objective: To maximise impacts on employment in the area during the construction phase.

Targets: To ensure that employment for local people is ensured during the construction phase.

Measures:

- Creation of local employment, training and business opportunities
    - ***Employment:***
        - ***Preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.***
        - ***Where reasonable and practical, the proponent should appoint local contractors and implement a 'locals first' policy, especially for semi and low-skilled job categories. However, due to the low skills levels in the***

area, the majority of skilled posts are likely to be filled by people from outside the area.

- ***Where feasible, efforts should be made to employ local contactors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.***
- ***Before the construction phase commences the proponent should meet with representatives from the SM to establish the existence of a skills database for the area. If such as database exists, it should be made available to the contractors appointed for the construction phase.***
- ***The local authorities, community representatives, and organisations on the interested and affected party database should be informed of the final decision regarding the project and the potential job opportunities for locals and the employment procedures that the proponent intends following for the construction phase of the project.***
- ***Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.***
- ***The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.***

- The local authorities, relevant community representatives and local farmers should be informed of the final decision regarding the project and the potential job opportunities for locals and the employment procedures that the proponent intends following for the construction phase of the project.
- Institute a "locals first" employment policy.
- The SED should include provisions to upgrade local services where required
- To address cumulative impacts: The proponent must be involved in a Development Forum. This must be set up with neighbouring developers, the local municipality and the district municipality to co-ordinate and manage the development and operation of renewable energy projects in the area.
- ***Business:***
    - ***The proponent should liaise with the SM with regards the establishment of a database of local companies, specifically BBBEE companies, which qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security companies etc.) prior to the commencement of the tender process for construction service providers. These companies should be notified of the tender process and invited to bid for project-related work.***

- Impact of construction workers on local communities
    - The proponent and contractor should develop a Code of Conduct (CoC) for construction workers. The code should identify which types of behaviour and activities are not acceptable. Construction workers in breach of the code should be subject to appropriate disciplinary action and/or dismissed. All dismissals must comply with the South African labour legislation. The CoC should be signed by the proponent and the contractors before the contractors move onto site. The CoC should form part of the CHSSP.
    - The proponent and the contractor should implement an HIV/AIDS and Tuberculosis (TB) awareness programme for all construction workers at the outset of the

construction phase. The programmes should form part of the CHSSP.
    - The contractor should provide transport for workers to and from the site on a daily basis. This will enable the contactor to effectively manage and monitor the movement of construction workers on and off the site.
    - The contractor must ensure that all construction workers from outside the area are transported back to their place of residence within 2 days for their contract coming to an end.
    - No construction workers, with the exception of security personnel, should be permitted to stay over-night on the site.
- Influx of job seekers
    - Preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase.
    - The proponent, in consultation with the SM, should investigate the option of establishing a MC to monitor and identify potential problems that may arise due tothe influx of job seekers to the area. The MC should also include the other proponents of renewable energy projects in the area.
    - The proponent should implement a "locals first" policy, specifically with regard to
    - unskilled and low skilled opportunities.
    - The proponent should implement a policy that no employment will be available at the gate.
- Risk to safety, livestock, farm infrastructure and farming operations
    - All farm gates must be closed after passing through.
    - Contractors appointed by the proponent should provide daily transport for low and semi-skilled workers to and from the site.
    - The proponent should establish a MC and CoC for workers (see above).
    - The proponent should hold contractors liable for compensating farmers and communities in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors, and neighbouring landowners. The agreement should also cover loses and costs associated with fires caused by construction workers or construction related activities (see below).
    - The proponent should implement a Grievance Mechanism that provides local farmers with an effective and efficient mechanism to address issues related to report issues related to damage to farm infrastructure, stock theft and poaching etc.
    - The Environmental Management Plan (EMP) must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested.
    - Contractors appointed by the proponent must ensure that all workers are informed at the outset of the construction phase of the conditions contained in the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms.
    - Contractors appointed by the proponent must ensure that construction workers who are found guilty of stealing livestock and/or damaging farm infrastructure are dismissed and charged. This should be contained in the CoC. All dismissals must be in accordance with South African labour legislation.
    - It is recommended that no construction workers, with the exception of security personnel, should be permitted to stay over-night on the site.

- Impacts associated with on-site construction related activities
    - As far as possible, the transport of components to the site along the N1 and access road to Cape Infanta should be planned to avoid weekends, holiday periods and harvesting season.
    - The contractor should inform local farmers and representatives from the SM and local farming association of dates and times when abnormal loads will be undertaken.
    - The contractor must ensure that damage caused by construction related traffic to the gravel public roads and local, internal farm roads is repaired on a regular basis throughout the construction phase. The costs associated with the repair must be borne by the contractor.
    - Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis, adhering to speed limits and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers. All vehicles must be road-worthy, and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.
    - The Contractor should ensure that workers are informed that no waste can be thrown out of the windows while being transported to and from the site. Workers who throw waste out windows should be fined.
    - The Contractor should be required to collect waste along access roads on a weekly basis.
    - Waste generated during the construction phase should be transported to the local permitted landfill site.
    - EMP measures (and penalties) should be implemented to ensure farm gates are closed at all times.
    - EMP measures (and penalties) should be implemented to ensure speed limits are adhered to at all times.
- Increased fire risk
    - Establishment of a fire break around the construction area before work commences should be investigated.
    - Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas.
    - Smoking on site should be confined to designated areas.
    - Contractor should ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high-risk dry, windy winter months.
    - Contractor should provide adequate fire-fighting equipment on-site, including a fire fighting vehicle.
    - Contractor should provide fire-fighting training to selected construction staff.
    - No construction staff, with the exception of security staff, to be accommodated on site overnight.
    - As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local authorities
- ***Loss of Farmland***

- ***The loss of high-quality agricultural land should be avoided and or minimised by careful planning in the final layout of the proposed WEF facilities. The recommendations of the agricultural / soil assessment should be implemented.***
- ***The proponent should consult with affected property owners in order to enable them to factor construction activities into their farming schedules, specifically planting and harvesting activities.***
- ***The footprint associated with the construction related activities (access roads, construction platforms, workshop etc.) should be minimised.***
- ***An Environmental Control Officer (ECO) should be appointed to monitor the establishment phase of the construction phase. All construction related activities should be confined to the demarcated area and minimised where possible.***
- ***All areas disturbed by construction related activities, such as access roads on the site, construction platforms, workshop area etc., should be rehabilitated at the end of the construction phase.***
- ***The implementation of a rehabilitation programme should be included in the terms of reference for the contractor/s appointed. The specifications for the rehabilitation programme should be drawn up by the Environmental Consultants appointed to manage the EIA.***
- ***The implementation of the Rehabilitation Programme should be monitored by the ECO.***
- ***EMP measures (and penalties) should be implemented to strictly limit all vehicle traffic to designated roads and construction areas. Drivers should be informed on the reasons for and importance of being restricted to designated areas.***
- ***Compensation should be paid by the developer to farmers that suffer a permanent loss of land due to the establishment of the WEF. Compensation should be based on accepted land values for the area.***

4.2.10 Appropriate Construction Equipment Management

Objectives: To minimise possible nuisance effects and environmental damage through the use, storage and/or handling of Construction Equipment during the construction works.

Targets: To ensure that impacts and damage to the environment are minimised via the responsible use of appropriate Construction Equipment on site.

Measures:

- The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions (no-go areas) required to comply with the specifications. The Contractor shall ensure that these delivery drivers are supervised during off loading and made well aware of the specification of the site.
- The Contractor shall at all times carefully consider what construction equipment is appropriate to the task in the context of this EMPr while minimising the extent of environmental impact.
- Materials shall be appropriately secured and/or covered to ensure safe transportation between destinations.
- Loads containing but not limited to, sand, stone, fine vegetation, chips, paper cement sand and waste, will be appropriately covered (i.e., with tarpaulin) to ensure that such materials do

not spill during the transportation of such materials. The Contractor in charge must be responsible for any required "clean-ups" resulting from failure by his employees or suppliers to properly cover the required materials.

- Construction equipment must be located away from sensitive areas when parked for extended periods of time.
- A dedicated parking and equipment storage area must be designated on the site. Vehicles, and construction equipment must be parked or placed here when not in use. Metal drip trays must be placed beneath the stationery vehicles and equipment to contain any spilled liquids.
- The Contractor must develop a system to manage the condition of drip trays to ensure that they are always suitable for site use (e.g., compile and maintain a drip tray register).
- Chain of custody documentation must be provided as proof of final end recipient.
- All spills are to be recorded in the Environmental Register, including any clean-up actions taken to remediate the spillage. Such actions are to be agreed with the ECO/ESCO prior to taking place.
- In the event of a major hydrocarbon (oil/ diesel/ petrol/ lubricant) spillage on site, the ECO/ESCO must contact the local and national environmental authorities to determine whether the spillage constitutes a NEMA Section 30 incident.
- In any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

4.2.11 Waste Management

Objectives: To minimise possible environmental damage through inappropriate waste management on site or related to the site.

Targets: To ensure that the handling of waste is in accordance with the statutory requirements of the local authority by laws and the NEM: Waste Act (2008). Specifically, management of waste must be done in accordance with section 16 of the National Environmental Management: Waste Act 2008 (Act No. 59 of 2008), the "general duty in respect of waste management". Section 16(1)(d) states that: "A holder of waste must, within the holder's power, take all reasonable measures to manage waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts."

Measures:

1) Liquid Waste:
    - Storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment.
    - The Contractor shall keep a manufacturer specific Material Safety Data Sheet (MSDS) on-site for all potentially hazardous materials used.
    - Suitably trained personnel shall be available on the site during working hours so that in the event of human exposure to any hazardous materials that the correct first aid actions are taken. This training should also include environmental spill containment procedures. Training

must be provided by an accredited institution (i.e. for first aid, firefighting, handling of hazardous substances and storage).

- Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity.
- Contractor will maintain a register and have waste manifests and safe disposal certificates for all hazardous waste that has been disposed of.
- Safe disposal certificates for general, hazardous and recycled waste should be retained for a minimum period of five years in accordance with the provisions of the National Waste Information Regulations promulgated in Government Notice ("GN") No. R. 625 of 13 August 2012.
- All hazardous waste must be transported and disposed of at a registered landfill site. The Contractor must keep a valid permit of the landfill site on their records. Moreover, the Contractor must keep an agreement letter with the waste contractor on their files.
- No discharge of pollutants such as cement, concrete, chemicals, fuels or oils will be allowed into any water resource
- The areas around fuel tanks will be bunded.
- Only above ground temporary storage tanks will be allowed on site.
- Contaminated or potentially contaminated water will be kept separated from unpolluted storm water.

2) <u>Solid Waste:</u>

- Prepare and submit a Method Statement on waste control and management at the site.
- No burning, burying or dumping of any waste materials, vegetation, litter or refuse shall be permitted.
- Remove, or appoint a suitable service provide to remove solid waste from site on a weekly or fortnightly basis.
- Solid waste must be recycled where possible and the remainder spoiled at an approved municipal land fill site or waste disposal service provider.
- Disposal certificates for each waste removal event shall be issued and kept in the site environmental file for auditing purposes.
- Safe disposal certificates for general, hazardous and recycled waste should be retained for a minimum period of five years in accordance with the provisions of the National Waste Information Regulations promulgated in Government Notice ("GN") No. R. 625 of 13 August 2012.
- Waste must be categorised by the Contractor and disposed of in a suitable manner into separate waste streams (this includes general and hazardous waste).
- The Contractor must provide an adequate number of waste receptacles for general waste at points around the construction site, and a single collection point for hazardous waste.
- The frequency of collections/emptying of waste receptacles will be at least once per week or at such a frequency that waste receptacles do not overflow.
- Particular care shall be taken with the disposal of materials that could be wind-borne or waterborne to ensure that the release of these materials is minimised (the latter is a requirement for hazardous waste). Alternatively, bins with weighted lids must be used.
- The use of netting covers or similar sealed containers must be implemented as and when required by the ECO/ESCO.

- Areas demarcated for specific activities including food consumption must have suitable waste receptacles provided.
- General waste to be further categorized to ensure recycling is implemented (eg. glass, paper, plastic, metal etc.)
- No dumping within the surrounding area (within and offsite) is to be permitted.
- No burning of solid waste is allowed.
- All material used by the Contractor during the construction phase shall be managed in such a way that it does not cause pollution, or that minimises pollution.
- Do not allow burning of cleared vegetation on site. Chipping or composting of vegetation shall be allowed where viable.
- In the event of a spillage, the Contractor must have suitably trained personnel who can correctly clean up any spillage in an efficient and environmentally sound manner.
- Should any general and hazardous waste be generated during the construction phase, these must be stored and handled separately. Should these waste streams be mixed, the entire volume should be viewed as hazardous and handled accordingly.

3) <u>Hazardous Waste:</u>
   - All hazardous waste must be stored in a demarcated area and disposed of using registered and licensed waste disposal contractors. All documents relating to volumes and type of waste must be kept on site for inspection (eg. waste registers and manifests).
   - In the event of a spillage, the Contractor must have suitably trained personnel who can correctly clean up any spillage in an efficient and environmentally sound manner.
   - Storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment.
   - The Contractor shall keep manufacturer specific MSDS on-site for all potentially hazardous materials used.
   - Suitably trained personnel shall be available on the site during working hours so that in the event of human exposure to any hazardous materials, the correct first aid actions are taken. This training must also include environmental spill containment procedures.
   - Any spills occurring on site must be cleaned up, removed and disposed of safely as soon after detection as possible to minimize pollution risk.
   - Chain of Custody documentation must be provided for any hazardous substances disposed of as proof of end recipient.
   - All significant spills of harmful product/waste into the soil or water resources that might lead to environmental degradation must be reported to all relevant authorities. This requirement is in terms of Section 30 (10) of the National Environmental Management Act, No. 107 of 1998 (NEMA).
   - For any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

4) <u>Ablution Facilities</u>

- Chemical toilet facilities are to be supplied and managed by the Contractor. These are to be located in specific areas agreed to by the ECO/ESCO prior to placement and to be used by all personnel.
- The number of chemical toilets required on site (i.e. the ratio of persons working on site to number of toilets) must be determined by the Contractor in conjunction with the Competent Local Authority prior to works starting on site.
- These toilets are to be secured (e.g. held down with four separate cables, r guy ropes or staked down) to ensure that they are not knocked over or blown over by the wind.
- Ablution facilities provided will include shelter, toilets and hand washing facilities/hand sanitizer.
- Toilets will be provided as required.
- Sanitation facilities shall be located within 100m of any point of work, but not closer than 50m from any water body, storm water channels and no-go areas; or according to the customer EMPr.
- All temporary/portable toilets will be secured to the ground to prevent them toppling due to wind or any other cause.
- Entrances to toilets will be adequately screened from public view. The height and width of the screen must be able to cover the entire entrance.
- Ablution facilities provided will be maintained in a hygienic state and serviced regularly to ensure proper operation.
- Toilet paper will be supplied at ablutions.
- No spillage will be allowed when the toilets are cleaned or serviced.
- The contents of chemical toilets will be removed by a registered and licensed contractor to a registered disposal site. The Contractor must provide a valid disposal permit for the landfill/treatment site and keep it on file.
- The toilets will be serviced at least twice a week or as required. The Contractor to maintain a waste register for all the services and have waste manifests for all the waste collected.
- Waste disposal certificates for mobile chemical toilets must be retained for a minimum of five years.

4.2.12 Trenching and excavations

Objectives: Adequate topsoil and subsoil management during trenching.

Measures

- Topsoil and subsoil excavated during trenching may be stockpiled next to the trench, but must be set back from the edge of the trench by a minimum distance of 1m. Subsoil can be used – if suitable – for road construction.

4.2.13 Excavations and stockpiling

Objectives: Correct excavation and stockpiling protocol implemented on site.

Measures:

- The movements of the construction vehicles must be confined to the immediate vicinity of each tower location.
- All construction activities (i.e. vehicle movement) in cultivated fields should be minimised and contained within clearly demarcated areas.
- Topsoil is to be stockpiled upslope of the excavation where possible.

- Rocks and debris are to be stockpiled separately within the immediate construction site and used as fill where necessary.
- Rocks can be stacked as walls to prevent the loss of top and subsoil on cut or fill banks.
- Banks must not be steeper than 1:3 and cut back where the ECO/ESCO deems necessary.
- Berms must be specified on sloped sites, depending on the gradient and length of slope affected.
- Any stockpiling of gravel, cut, fill or any other material including spoil shall be in areas approved by the ECO/ESCO within the defined working area.
- Ensure that stockpiled material is not lost due to exposure to the elements. If the stockpiled material is in danger of being washed or blown away, cover it with a suitable material, such as hessian or plastic. Do not cover stockpiles of topsoil with plastic.
- Do not allow stockpiling of any material within the 100m of any residential areas or 20m of any no-go area.

4.2.14 Sanitation

Objectives: Ensure adequate sanitation for staff on site

Measures

- Provide adequate washing and toilet facilities at the construction site camp.
- Provide portable chemical toilets at a ratio of one toilet per 15 workers.
- The toilet facilities must be easily accessible.
- All temporary/portable toilets shall be secured to the ground to the satisfaction of the PM to prevent them from toppling over or being blown over by wind.
- The type and exact location of the toilets shall be approved by the PM prior to establishment. No septic tanks are to be established.
- Ensure maintenance of all toilets in a clean sanitary condition to the satisfaction of the PM. Toilets are to be serviced at least once per week and toilet paper shall be provided.Ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from the site to an appropriate location/facility. The Contractor/service provider is to provide proof that the toilet contents are disposed of at an appropriate facility.
- Discharge of waste from toilets into the environment and burial of toilet waste is strictly prohibited.
- Waste disposal certificates for mobile chemical toilets must be retained for a minimum of five years.

4.2.15 Health Awareness

A Prevention Management Plan must be implemented on the WEF site during the pre- construction, construction and operational phases. (Provided this is still relevant at the time)

4.2.16 Environmental Awareness

Objectives: Provide adequate environmental training

Measures

- Provide adequate environmental training.
- Ensure that all employees undergo project induction on environmental awareness.
- Provide evidence that the environmental awareness induction courses have been presented.

- Place emphasis on any (potential) environmental impacts relating to the construction activities on site and to the related environmental precautions taken to avoid or mitigate these impacts.

  The environmental training must, as a minimum, include the following: The importance of conformance with all environmental policies; The significance of environmental impacts, actual or potential, as a result of their work activities; Their roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements; The mitigation measures required to be implemented when carrying out their work activities; The importance of not littering; The need to use water sparingly; Details of, and encouragement to, minimise the production of waste and re-use, recover and recycle waste where possible; Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed must these be encountered; The procedures which must be followed must a grave or any significant archaeological finding be encountered, or unearthed during the construction phase; Details regarding fauna and flora of special concern, including protected/endangered plant and animal species, and the procedures to be followed must these be encountered during the construction phase.
- Conduct a training needs analysis in consultation with the ECO/ESCO, to identify the appropriate environmental and health training programmes, and the appropriate target groups amongst the employees of the Contractor.
- File the results of the environment and health training needs analysis with the environmental records.
- Environmental awareness training programmes must contain the names, positions and responsibilities of personnel to be trained, the framework for appropriate training plans, and a schedule for the presentation of the training courses.
- Maintain records of all training interventions. The ECO/ESCO shall monitor the records and undertake regular follow ups.

4.2.17 Safety and First Aid Management

Objectives: To minimise any potential safety or health related incidents on site.

Targets: To ensure compliance with the local authority by-laws and any other statutory requirements relating to health and safety on a construction site.

Measures:

- All people working on site are responsible for their own safety on site. Contractors and Principal Agent/s shall at all times comply with the relevant statutory requirements including the Occupational Health and Safety Act (Act 85 of 1993).
- A comprehensive site specific first aid kit must be available on site at all times.
- At least one person trained in safety and first aid and familiar with the first aid equipment on site must be present on the site at all times.
- Emergency procedures must also be established prior to the start of construction operations on site and appended to this EMPr.
- First Aider/Safety Officer to ensure that there is a bin for medical waste were all the bandages, plasters etc are disposed

- Safety precautions must be taken to ensure that residents in the area do not come to harm. The construction site shall be off limits to the general public at all times during the construction period and during site clean-up.
- Clearly demarcate construction areas, open sewers, trenches and other potential construction-related danger areas with hazard tape and/or appropriate fencing.
- Erect hazard warnings and maintain in good condition warning signs in the relevant languages and at appropriate positions, warning traffic of construction activities ahead and at problem sites.
- Ensure that all staff is compliant with the relevant safety regulations on site and wear applicable safety clothing and gear at all times while on site.

4.2.18 Emergency preparedness

Objectives: Compile and maintain environmental emergency procedures

Measures:

- Compile and maintain environmental emergency procedures to ensure an appropriate response to unexpected or accidental incidents that may cause environmental impacts.
- Activities that may be addressed in the environmental emergency procedures include, for example, accidental exposure of employees to hazardous substances, veld fires and accidental spillage of hazardous substances.
- Ensure that the necessary materials and equipment for dealing with the spills and leaks are available on site at all times.
- The site shall have a supply of absorbent material readily available to absorb any accidental hydrocarbon spills. The quantity of such material shall be able to absorb/deal with a minimum of 200 litres of spill.
- Contain any spill using sand berms, sandbags, sawdust or absorbent materials. The area shall be cordoned off and secured.
- Notify the ECO/ESCO, PM and relevant authorities of any spills that occur.
- Assemble and clearly list the relevant emergency telephone contact numbers for staff and brief staff on the required procedures. These contact details shall be listed in English, and any other relevant language, in the site office, construction camp and any other suitable areas.
- The treatment and remediation of areas affected by emergencies shall be undertaken to the satisfaction of the PM and ECO/ESCO at the cost of the Contractor where his staff have been proven to be responsible for the emergency.

- The environmental emergency procedures plan must include the following:
    - A list of key personnel
    - Details of emergency services applicable to the various areas along the route that turbine components will need to be transported and for the site itself (e.g. the fire department, spill clean-up services, etc.)
    - Internal and external communication plans, including prescribed reporting procedures where required by legislation; Actions to be taken in the event of different types of emergencies; Incident recording, progress reporting and remediation measures required to be implemented.
    - Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

- Training plans, testing exercises and schedules for effectiveness.
- Comply to emergency preparedness and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended and/or any other relevant legislation.
- Maintain an environmental incident register to record incidents that occur on site as a result of the activities associated with the contract. Environmental incidents constitute all those activities and incidents that may have a negative impact on the surrounding natural environment.
- Ensure that each environmental incident is investigated by the ECO/ESCO and forward an environmental incident report to the Contractor, Proponent and relevant authority, including details on the manner in which the incident was remedied.
- Ensure that each environmental incident report contains as a minimum, a description of the incident, a statement on the severity and significance of the impact, and actions taken to remediate the resultant damage.

4.2.19 Air Quality (Dust Impacts) Management

Objectives: To minimise potential air quality impacts during construction related activities.

Targets: To ensure compliance with the National Dust Control Regulations (GN No. R. 827) of 1 November 2013, promulgated in terms of National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)) relating to air quality These regulations prohibit a person from conducting any activity in such a way as to give rise to dust in such quantities and concentrations that the dust, or dust fallout, has a detrimental effect on the environment.

Measures:

- Ensure that all vehicles and plant used are maintained in good working order to help reduce air emissions.
- The burning of substances that may emit foul smelling smoke or vapour, e.g. oil rags, tar paper, etc. is not permitted.
- Wind-blown dust and sand may generate considerable negative impacts (e.g. reduced visibility for vehicles travelling along adjacent roads and nuisance to neighbours/adjacent erven). Therefore, the following is required to be taken into account:
    - The use of water bowsers and wetting down of loose soil areas (preferably with non-potable water), as well as the erection of shade netting screens to prevent off-site movement of dust.
    - The use of straw stabilisation or mulching of exposed sandy areas must also be considered in consultation with the ECO/ESCO.
    - Speed limits for vehicles on unpaved roads and minimisation of haul distances must be implemented on site.
    - All material loads need to be properly covered during the transportation process.
    - Avoid the excavation, handling and transport of erodible materials under high wind conditions.
    - Soil stockpiles shall be wetted and/or sheltered from the wind, as required.

  - Location and treatment of material stockpile must take into consideration the prevailing winds direction and location of sensitive receptors.
  - Adherence to ear duct loads and protective gear which is stipulated in the Occupational Health and Safety Act (Act No. 85 of 1993).
- In particular, no potable water may be used for dust suppression purposes.
- During the dry season and during the wind season, a water bowser must be present on site at all times to ensure that all dust is wetted and managed appropriately.
- Dust reduction techniques must be used before and during surface clearing, excavation, or blasting activities.
- Appropriate dust suppression techniques must be implemented on all exposed surfaces during periods of high wind. Such measures may include wet suppression, chemical stabilisation, the use of a wind fence, covering surfaces with straw chippings and re-vegetation of open areas.
- Construction activities be limited on days where there are extreme high winds to limit dust emissions.
- Should a need arise, dust monitoring must be conducted on site.

4.2.20 Water Quality Management (Wastewater and Contaminated)

Objectives: To minimise any potential impacts on the water quality of the site and off site through direct and indirect impacts.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to water quality.

Measures:

Prepare a Method Statement on the control and management of wastewater on site, including providing for the appropriate disposal of contaminated water.

- No grey water runoff or uncontrolled discharges from the site/working areas (including wash down areas) to adjacent or nearby water bodies shall be permitted.
- Discharge water containing environmental pollutants into a conservancy tank, where appropriate, for removal from site.
- Prevent runoff loaded with sediment and other suspended materials from the site/working areas from discharging to adjacent watercourses and/or stormwater infrastructure.
- Potential pollutants of any kind and in any form shall be kept, stored and used in such a manner that any escape can be contained.
- Wash down areas must be approved by the PM and ECO/ESCO and shall not pollute the surrounding environment.
- Notify the PM and ECO/ESCO of any pollution incidents on site.
- Site staff shall not be permitted to use any stream, river, open water body or natural water source adjacent to or within the designated site for the purposes of bathing, washing of clothing, drinking or for any construction or related activities.
- Bowser water (or another source approved by the Principal Agent and ECO/ESCO) must instead be used for all activities such as washing of equipment, dust suppression, concrete mixing, compaction, etc. with the latter taking place well outside any identified sensitive areas and within a demarcated area approved by the ECO/ESCO.
- In particular, no potable water must be used for dust suppression purposes.

- Before an operation occurs near a waterbody, vehicles must be checked for leaks, to reduce soil and water contamination from vehicle fluids.
- Re-fuelling areas for vehicles must be bunded and located away from water resources and sensitive environments to prevent any accidental spillage contaminating soil or seeping into groundwater aquifers. All servicing area run-off must be directed towards a fully contained collection sump for recovery and appropriate disposal.
- Old engine oil must NOT be thrown on the ground or down a stormwater drain but rather collected in containers and recycled.
- If soil contamination occurs (such as due to a spill), the soil must be removed from the site and legally disposed of appropriately.
- Any spills that occur during all phases of the development must be recorded in the Environmental Register. All clean-up actions must also be recorded that was used to remediate the spillage. All actions need to be agreed in conjunction with the ECO/ESCO prior to commencing any work.

4.2.21 Hazardous Material / Substance (Bitumen Oils and Lubricants) Management

Objective: To minimise any potential hazardous material from causing environmental damage through the use, storage and/or handling of such hazardous material during the construction works.

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to hazardous materials.

Measures:

All potentially hazardous materials are to be handled by the Contractor's trained staff and stored on site in accordance with manufacturer's instructions and legal requirements.

- Clearly label products and provide symbolic safety/hazard warning signs (MSDSs).
- The Contractor shall ensure that all hazardous materials are stored within a bunded area.
- All hazardous material containers are required to be inspected regularly to ensure that no leaks occur.
- When hazardous materials are required to dispensed, proper dispensing equipment must be used and made available on the site for such activities.
- The dispensing equipment is required to be stored in a waterproof container when not in use.
- Hazardous material must be used in moderation and dispensed at designated areas, which are controlled appropriately.
- Ensure that areas for the storage of fuel and other flammable materials comply with standard fire safety regulations.
- Provide appropriate training for the handling and use of such materials as necessary. This includes providing for any spills and pollution threats that may occur.
- The Contractor shall take all reasonable and necessary precautions to prevent accidental and incidental spillage during the use of such materials.
- In the event of a hazardous material spill, the Contractor must isolate and contain the hazardous material spillage.
- The Contractor shall clean up the spill, either by removing the contaminated soil and/or by the application of absorbent material in the event of a larger spill.
- Treatment and remediation of the spill will be undertaken to the reasonable satisfaction of the Engineer.

- The Contractor must advise that Engineers and the ECO/ESCO of where any Bitumen is being stored.
- The storage area of hazardous waste must comprise of a smooth impermeable floor (concrete and/or 250um plastic cover).
- A spill kit is required to be present on the site at all times.
- The Contractor must develop a spill kit checklist and maintain it to ensure that the contents of the spill kit are complete at all times
- Locate fuel and chemical depot(s) at least 100m from any water body.
- Retain the relevant MSDS on site. Procedures detailed in the MSDS shall be followed in the event of an emergency situation.
- Where hazardous substances are removed from site for disposal, proof of disposal for auditing purposes shall be kept in the form of disposal certificates.
- For any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.
- Safe disposal certificates for general, hazardous and recycled waste should be retained for a minimum period of five years in accordance with the provisions of the National Waste Information Regulations promulgated in Government Notice ("GN") No. R. 625 of 13 August 2012.

4.2.22 Hazardous Material (Fuels, Oils and Others) Management

Objective: To minimise any hazardous fuel and oil material from causing environmental damage through the use, storage and/or handling of such hazardous material during the construction works.

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to hazardous materials.

Measures:

- Obtain all necessary approvals regarding storage and dispensing, where fuel is to be stored on site, from the appropriate authorities.
- Fuel must be stored on site in an area which was been approved by an Engineer and the ECO/ESCO.
- Ensure that all liquid fuels and oils are stored in tanks with lids and that these are kept firmly locked at all times. The design and construction of the storage tanks shall be in accordance with a recognised code and as approved by the PM.
- A chemical register must be placed on the entrance of the hazardous store to identify all the chemicals in the store.
- The tanks or bowsers are required to be located / stored on smooth impermeable surfaces (concrete or plastic) with an earth bund.
- Where reasonably practical, plant shall be refuelled at a designated refuelling area or at the workshop as applicable. If it is not reasonably practical then the surface under the temporary refuelling area shall be protected against pollution to the reasonable satisfaction of the PM

prior to any refuelling activities.

- The impermeable lining shall extend to the crest of the bund and the volume of the bund will be 130% of the total of the storage tanks and/or bowsers located on the site.
- The bunded area is required to be sheltered from the rain.
- Provisions shall be made for refuelling at the fuel storage area, by protecting the open soil with bunding.
- If fuel will be dispensed from 200l drums, only empty clean drums will be able to be stored on the bare ground.
- All empty dirty drums must be stored on a bunded area.
- Should the use of a 200l drum be required, proper dispensing mechanisms are required to be used and the drum will not be allowed to be tipped in order to dispense the fuel.
- The dispensing mechanism for the fuel drums will be stored in a waterproof container when it is not in use.
- The Contractor will be required to prevent unauthorised access to the fuel storage area. Keep fuel under lock and key at all times.
- The Contractor must ensure that adequate fire-fighting equipment is readily available at the fuel storage area.
- Where practical, the plant shall be refuelled at the fuel storage area or at the workshop as applicable. If it is not possible then the surface under the refuelling area must be bunded with plastic and/or wooden pallets.
- The Contractor must obtain the Engineer's and ECO/ESCO approval for any refuelling or maintenance activities.
- All hazardous material containers are required to be inspected regularly to ensure that no leaks occur.
- The storage of general waste in excess of 100m³ and/ or the storage of hazardous waste in excess of 80m³, excluding the storage of waste in lagoons or the temporary storage (i.e. less than 90 days) of such waste, requires the applicant to comply with GN No. 926 of 29 November 2013: National Norms and Standards for the Storage of Waste.
- Remove storage tanks on completion of the works.
- No smoking shall be allowed in the vicinity of the fuel storage area. Erect at least one no-smoking warning sign, which is clearly visible at the fuel storage area, to warn all staff of associated dangers.
- The Contractor to ensure that there is always a supply of absorbent material readily available to absorb/break down any hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200l of hydrocarbon liquid spill. This material must be approved by the PM prior to any refuelling or maintenance activities.
- In the case of a spill, contaminated material must be removed from the site immediately and disposed of at an appropriate hazardous waste facility.

4.2.23 Workshop, Equipment Maintenance and Storage Management

Objective: To minimise any potential dangerous material from causing environmental damage through the use, storage and/or establishment of such areas during the construction works.

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to such storage and/or workshop and/or equipment maintenance areas.

Measures:

- Should any leaking equipment be present on this site, this equipment is required to be removed from the site immediately.
- All maintenance of equipment and vehicles on site must ideally be repaired off site or at a designated workshop area, which is appropriately bunded. Contractor to provide a method statement for such servicing.
- Should emergency maintenance work be undertaken outside of the workshop area then this emergency work is required to be bunded appropriately and further such works must be approved by the Engineer and ECO/ESCO prior to commencement.
- The Contractor must ensure that the workshop and/or any other maintenance areas (such as emergency maintenance areas) do not result in the contamination of the soil and/or vegetation.
- The workshop must have a smooth impermeable floor (concrete and/or plastic).
- The floor of the workshop is required to be angled towards an oil trap and/or sump to ensure that any dangerous spills are contained in the workshop area.
- Should servicing of equipment be required to be undertaken on the site then drip trays are required to be used to contain any waste oil and other lubricants.
- Drip trays are required to be used for all stationery equipment such as generator sets and compressors and all parked equipment such loaders, scrapers and vehicles on the construction site.
- All drip trays must be monitored and emptied on a daily basis.
- During rainy days and/or the rainy season the drip trays are required to be monitored continuously to ensure that they do not overflow. Where possible the Contractor is encouraged to place the drip trays and equipment during the rainy periods in sheltered areas, which will ensure that the drip trays do not overflow.
- The washing of any equipment on the site must be limited to urgent and/or preventative maintenance requirement only.
- As washing of any equipment must be undertaken off site and/or in the workshop area if necessary.
- The use of detergents for washing equipment must be restricted to detergents that have a low phosphate and nitrate content.
- The store man will be responsible for stacking and storage of material in the storage area at the site camp.
- Bricks, sandstone blocks, building sand, plaster sand and stone will be stored “open” on site but with special care that materials are not contaminated i.e. that different types of sand are not mixed.
- Cement will be stored in a lockable and waterproof container and will be stacked. Otherwise, cement bags to be covered and placed on a protective sheet.
- Not more than 13 pockets high. Cement will be used, as far as possible, on a first-in first-out basis;
- Reinforcing bars will be stored in the open but will be placed on timber poles to avoid “contamination” by mud or soil.
- Steel door and window frames will be stored in the open but within a fenced-off secure area;
- Paint will be stored in a ventilated lockable store.

Natural Materials: Sourcing

- Materials must be sourced in a legal and sustainable way to prevent off-site environmental degradation.
- Where possible, a signed document from the supplier of natural materials must be obtained confirming that they have been obtained in a sustainable manner and in compliance with relevant legislation (legitimate source).
- Where materials are borrowed (mined), permit must be provided of authorization to mine these materials.

Stockpile Areas

- Sites for stockpile areas are to be agreed with the Principal Agent and ECO/ESCO.
- Materials are not permitted to be stockpiled underneath or against the trunks of trees, on streams, riverbanks or within floodplains.
- No material will be permitted to be stockpiled in drainage lines or where there is a potential for the stockpiled material to be washed away.
- Stockpiles must not obstruct natural water pathways.
- Stockpiles must not exceed 2m in height.
- Stockpiles to be kept clear of alien invasive weeds.

4.2.24 Noise Impact Management

Objectives: To minimise any potential noise impacts related to the construction operations on site.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements (specifically Western Cape Noise Control Regulations of 2013 (Provincial Notice 200/2013) requirements relating to noise impacts.

Measures:

Noise levels could exceed 45 dBA (the WHO recommended night-time noise limit for residential use) and noises may increase annoyance with the project, especially if the noise include an impulsive component or any tones. To minimize potential annoyance with the project, it is therefore recommended that the applicant:

- ***Do not permit road construction or upgrading activities, closer than 350 m from any NSR, at night;***
- ***If possible, plan to located access roads further than 100 m from NSR;***
- ***NSR should be notified of road construction and upgrading activities that could create inconveniences when construction activities are required closer than 500 m from an NSR at night;***
- ***Only allow construction activities at one WTG location (closer than 1,000m from an NSR). Simultaneous construction activities can take place at other WTG locations located further then 1,000m from an NSR;***
- ***Minimise active equipment at night, planning the completion of noisiest activities (such a pile driving, rock breaking and excavation) during the daytime period.***
- ***Include a component covering environmental noise in the Health and Safety Induction to***

sensitize all employees and contractors about the potential impact from noise, especially those employees and contractors that have to travel past receptors at night, or might be required to do work close (within 1,000m) to NSRs at night;

- ***Evaluate the noise impact should the layout be revised where any wind turbines are located closer than 1,000 m from a confirmed NSR, or the number of WTG within 2,000m are increased;***
- ***Noise monitoring to confirm that noise levels associated with operating WTG are less than 45 dBA at all NSR***
- ***Reached agreement with the land owner(s) that certain dwellings will no further be used for permanent residential purposes if the project proceed; or***
- Day-time Construction of WEF and upgrading of roads
    - While the significance of road construction activities was assessed as low, noises from such activities can increase annoyance levels with the project, not only due to noise levels, but other perceived issues (such as delays and inconveniences). Mitigation measures below are included for the developer to consider:
    - No road construction or upgrading activities, closer than 500m from any NSR, must be permitted at night;
    - If possible, access roads should be located further than 100m from NSR;
    - NSR should be notified of road construction and upgrading activities that could create inconveniences
    - Potential for a noise impact is low for daytime construction activities and additional mitigation measures are not required for daytime construction activities.
- Noise from day time and night-time construction traffic
    - While the significance of construction traffic noises was assessed as low, noises from such activities can increase annoyance levels with the project, not only due to noise levels, but other perceived issues (such as delays and inconveniences). Mitigation measures below are included for the developer to consider:
    - If possible, access roads should be located further than 100m from NSR. If roads are located closer than 100m from NSR, it is recommended that construction activities be planned that these roads are not used at night; and
    - NSR should be notified of road construction and upgrading activities that could create inconveniences.
    - Minimize night-time construction traffic at locations where the access road is closer than 100m from any NSR;
- Night-time Construction of WEF and upgrading of roads
    - The potential significance of noise impact due to night-time construction activities is moderate, mainly due to the strict impact assessment criteria and the low ambient sound levels measured onsite during the site visit. Mitigation is recommended and highlighted below to ensure that the significance of the noise impact is reduced.
    - When construction activities are required closer than 1,000m from an NSR, the applicant should:
    - Only allow construction activities at one WTG location (when working closer than 1,000m from an NSR). Simultaneous construction activities can take place at other WTG locations located further then 1,000m from an NSR; and
    - Minimise active equipment at night, planning the completion of noisiest activities (such a pile driving, rock breaking and excavation) during the daytime period.

  - It is recommended that access roads that would carry more than 10 heavy vehicles per hour (based on an Average Annualized Daily Traffic volume of more than 160) are not located closer than 60m from structures used for residential purposes. If possible, plan to located access roads further than 100m from NSR;
  - NSR should be notified of road construction/upgrading activities that could create inconveniences when construction activities are required closer than 500m from an NSR at night;
- Design and implement a noise monitoring programme (noise measurements and discussions with potentially affected NSR) to define noise levels and potential annoyance with project activities;
- Ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures. Engine bay covers over heavy equipment could be pre-fitted with sound absorbing material. Heavy equipment that fully encloses the engine bay should be considered, ensuring that the seam gap between the hood and vehicle body is minimised;
- Include a component covering environmental noise in the Health and Safety Induction to sensitize all employees and contractors about the potential impact from noise, especially those employees and contractors that have to travel past receptors at night, or might be required to do work close (within 1,000m) to NSRs at night. This could include issues such as minimising the use of vehicle horns;
- The contractor and Environmental Control Officer (ECO/ESCO) must liaise with local NSR on how best to minimise impact and the NSR must be kept informed of the nature and duration of intended activities with regard to unavoidable noisy night-time construction activities in the vicinity of NSR (closer than 1,000m from any identified NSR);
- Where practicable, mobile equipment should be fitted with broadband (white-noise generators/alarms 36 37), rather than tonal reverse alarms;

4.2.25 Blasting/Drilling/Demolitions Management

Objectives: To minimise impacts associated with blasting/drilling/demolition on site during construction.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to blasting and/or drilling and/or demolitions and to minimise nuisance impacts.

Measures:

- The following recommendations will be implemented in addition to normal health and safety requirements as stipulated in the Occupational Health and Safety Act (Act No. 85 of 1993).
- These activities will only take place via a competent and appropriately qualified and legally compliant Contractor.
- The Contractor shall take all necessary precautions to prevent damage to special features and the general environment, which includes the prevention of any fly rock.
- Environmental damage caused by the above activities shall be repaired and/or rehabilitated at the Contractor's expense to the satisfaction of the ECO/ESCO and Principal Agent.
- None of the above activities may be carried out on Sundays or Public Holidays without the approval of all relevant authorities.
- Careful sealing off of the site and surrounding area will be carried out to ensure that all personnel are removed from the site and its immediate surrounds.
- Adequate notification and warning of blasting activities must be provided to all adjacent and

or affected parties.

- Borrow materials must be obtained only from authorised and permitted sites.
- Appropriate anti-erosion measures such as silt fences must be installed in disturbed areas.

4.2.26 Concrete Mixing (Batching) Management

Objectives: To ensure that appropriate and efficient measures are undertaken on site to manage concrete mixing areas during the construction phase.

Targets: To ensure compliance with the local authority by laws, Visual Specialist recommendations and any other statutory requirements relating to concrete mixing.

Measures

- Batching plants are to be located in areas of low environmental sensitivity.
- The batching plant area shall be operated in a way that prevents contaminated water run-off from the batching site and polluting nearby water bodies.
- Suitable measures, such as diversion berms, to be installed to direct the wastewater to a suitable catchment area.
- Suitable screening and containment must be in place to prevent wind-blown contamination from cement storage, mixing, loading and batching operations.
- Topsoil must be cleared from the area demarcated for the batching plant prior to establishment and stockpiled for later rehabilitation purposes.
- Topsoil (300mm) should be stored at an appropriate site on each farm for future rehabilitation after decommissioning.
- No batching / mixing activities must occur on the ground or on any permeable surface.
- Protect the batching plant on the up-slope side (where applicable) with an earth berm or sandbags to deflect clean surface run-off water away from the plant.
- Cleaning of equipment and flushing of mixers must occur in designated wash bays (with contaminated water collected, stored/contained) to ensure that contaminated wash water does not enter the environment.
- Aggregates (Stone, Crusher Sand and River Sand) will be stored in dedicated “bins”. The bins will have three walls each to contain the aggregates.
- All visible remains of excess concrete and aggregate must be removed from site and disposed of in an appropriate manner.
- Cement bags must not become litter after use. They must be disposed of in bins/skips (see waste management).
- Concrete Truck Drivers to adhere to the following:
    - Appropriate License Code
    - Competence certificate
    - Medical Examination
    - Training given on daily checklists etc.

4.2.27 Establishment of Construction Lay Down Area

Objectives: To minimise impacts associated with the establishment and operation of construction site lay down area.

Targets: To ensure proper management of the construction site from a centralised point

Measures:

Establishment of Construction Sites:

- The contractor shall not locate the site camps in any areas in which vegetation is pristine (as defined by each contract's specifications), nor within 100m of any watercourse, nor in any area that could cause nuisance or safety hazards to surrounding landowners, inhabitants or the general public unless otherwise instructed by the Engineer and ECO/ESCO.
- The site camp/office is to be clearly signposted and no unauthorised access is permitted. Relevant contact details are to be made easily visible and available to the public for the purposes of complaints/concerns or emergencies.
- A plan showing the construction site layout, including the positions of all buildings, fuel storage and hazardous materials storage areas, stockpiles, storm water management infrastructure, access points for deliveries and services, the position of site offices and ablutions and other infrastructure must be prepared and submitted to the Engineer and ECO/ESCO for approval and a copy kept on site.
- The plan will detail all pollution control measures. The sites are demarcated by means of a security fence
- Access to the sites will be limited to authorised persons and will be security controlled
- The placement of buildings and equipment will be done to minimise the footprint and visual impact of the sites
- Locate Materials and soil stockpile areas, fuels and chemical storage areas and batching areas away from environmentally sensitive areas.
- Down lighting will be used and it will be ensured that lighting on site does not interfere with road traffic or cause a reasonably avoidable disturbance to the surrounding community or other users of the area
- Smoking areas to be provided and these areas must have a fire extinguisher. Fire extinguishers to be monitored (i.e. for expiry) and a register for this monitoring to be made available by the EO.
- Workers will be instructed to dispose of cigarette butts in designated areas.

Demarcation and Access Control:

- Sound environmental principles must be followed whilst establishing access to the site.
- The construction sites will be properly identified and demarcated.
- The selected accesses must consider minimising nuisance impacts on neighbours.
- Any new access tracks must be approved by the Customer/Engineer and ECO/ESCO prior to construction. No roads or access tracks may be created on an ad-hoc basis.
- The utility and safety of any exiting access shall not be compromised by use for the construction work or construction-related activities, nor shall spillage, littering, accelerated erosion, or other environmental impact, occur.

Clearing and Grubbing:

- Prior to clearing the ECO/ESCO must be notified in order to identify and demarcate any indigenous trees or plants, nesting sites or heritage sites that require protection or translocation.
- Areas of the construction site requiring clearance shall only be cleared immediately prior to construction activities commencing e.g. at the last practical stage.
- No indigenous trees or shrubs may be felled, lopped, pruned or removed without the prior permission of the ECO/ESCO.

- Pruning of branches of indigenous trees will be completed under direct competent supervision and sealant will be applied to cut surfaces in excess of 50mm in diameter.

4.2.28 Fire Management

Objectives: To ensure that fire as a result of the construction related activities are controlled and managed appropriately.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to fire management.

Measures

- Take all reasonable and precautionary steps to ensure that fires are not started as a consequence of construction activities.
- Contractor to provide adequate firefighting equipment on-site. Fire-fighting equipment must be in working order and serviced to date.
- Contractor to provide fire-fighting training to selected construction staff. Appoint a Fire Officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedures to be followed. Forward the name of the Fire Officer to the ECO/ESCO for his approval within seven days of being on site.
- Flammable materials must be stored under conditions that will limit the potential for ignition and the spread of fires.
- Smoking shall not be permitted in those areas where there is a fire hazard, e.g. fuel storage areas and areas susceptible to the rapid spread of fires.
- Hold fire prevention talks with staff to create an awareness of the risks of fire.
- Preferentially no fire will be lit on the site, however if required, fires must be limited to use for cooking and heating use only within a designated area. This area will be suitable distance from any fuel source.
- No burning of waste will be permitted on site.
- Suitable precautions will be taken when working with welding or grinding equipment near potential sources of combustion.
- The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase will be compensated for. The agreement must be signed before the construction phase commences.
- The option of establishing a fire-break around the perimeter of the site prior to the commencement of the construction phase should be investigated.
- Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas.
- Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care must be taken during the high risk dry, windy summer months.
- No construction staff, with the exception of security staff, to be accommodated on site over night.
- As per the conditions of the Code of Conduct, in the advent of a fire being caused by

construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the firefighting costs borne by farmers and local authorities. The Applicant must establish a 30-meter firebreak around the proposed WEF.

The Fire Management Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure L of the EMPr

4.2.29 Traffic Control Management

Objectives: To ensure that traffic impacts as a result of the construction related activities are minimized.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to construction traffic. To ensure that the impacts on current traffic flows in the vicinity of the site are minimised and that complaints relating to traffic associated with the site's activities are minimised.

Measures:

- Implementation of the Traffic/Transport Management Plan ***in Annexure J***
- Stagger component delivery to the site.
- Dust suppression
- Reduce the construction period
- The use of mobile batching plants in close proximity to the site would decrease the impact on the surrounding
- road network.
- Staff and general trips should occur outside of peak traffic periods.

The Transportation Management Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure J of the EMPr

4.2.30 Avifauna Management

Objectives: To minimise or prevent, where possible, the disturbance and displacement of avifaunal Species of Conservation Concern. To avoid the mortality of avifaunal Species of Conservation Concern where practicably possible.

Targets: To ensure compliance with the statutory requirements and obligations in the approved EMPr relating to management of avifaunal resources.

Measures:

- Habitat Destruction
    - Laydown and other temporary infrastructure to be placed within very low sensitivity areas, preferably previously transformed areas, wherever possible;
    - Appropriate run-off and erosion control measures are to be implemented where required;
    - All contractors are to adhere to the EMPr and should apply good environmental practice during construction;

- All hazardous materials should be stored in the appropriate manner to prevent contamination of the site and downstream environments. Any accidental chemical, fuel and oil spills that occur at the site should be cleared as appropriate for the nature of the spill;
- Existing roads and farm tracks should be used where possible;
- The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths;
- No off-road driving should be permitted in areas not identified for clearing;
- An Environmental Site Officer (ESO) must form part of the on-site team to ensure that the EMPr is implemented and enforced and an Environmental Control Officer (ECO)/ ESCO must be appointed to oversee the implementation activities and monitor compliance for the duration of the construction phase.

- Disturbance and Displacement of avifaunal Species of Conservation Concern
  - Infrastructure to avoid Very High Sensitivity areas
  - Existing and novel access roads are to be suitably upgraded or constructed to prevent damage and erosion resulting from increased vehicular traffic and construction vehicles;
  - No off-road driving in undesignated areas;
  - Speed limits (30km/h) should be strictly enforced on site to reduce unnecessary noise;
  - Construction camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate;
  - The movement of construction personnel should be restricted to the construction areas on the project site;
  - No dogs or cats other than those of the landowners should be allowed on site;
  - The appointed Environmental Officer must be trained to identify the avifaunal Species of Conservation Concern as well as the signs that indicate possible breeding by these species;
  - The Environmental Site Control Officer (ESCO) must then, during audits/site visits, make a concerted effort to look out for such breeding activities of avifaunal Species of Conservation Concern (e.g. Black Harrier, cranes, bustards), and such efforts may include the training of construction staff (e.g. in Toolbox talks) to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species.

- Direct Avifauna Mortality
  - The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.
  - If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined), construction activities within 500m of the breeding site must cease, and an Avifaunal Specialist shall be appointed for further assessment of the situation and instruction on how to proceed.
    - Should a new nest be confirmed, within one day (24 hours) following its discovery the Developer and/or Avifaunal Specialist is required to inform BLSA and ORCT.

- The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.
- The type of bird flight diverter (BFD) and spacings of the BFDs must be optimised for Denham's Bustards and Blue Cranes in consultation with an avifauna specialist prior to their fitment;
- Internal power lines must be buried, unless it is not ecologically, technically or financially feasible;
- Fatalities of avifaunal Species of Conservation Concern are to be appropriately recorded and reported by the ESCO to the Developers and/or the Client and Avifaunal Specialist as soon as reasonably practicable after first being detected or observed on-site during operational monitoring whereby appropriate and/or feasible measures will be taken, as per the recommendation of the Avifaunal Specialist, if applicable. These reports must be made available to relevant stakeholders each quarter. Any fatality of avifaunal Species of Conservation Concern must be reported to BLSA and ORCT within 24 hours.
- Maximum use of existing access road and servitudes;
- No off-road driving in undesignated areas;
- Speed limits (30 km/h) should be strictly enforced on site to reduce probability of vehicle collisions;
- The movement of construction personnel should be restricted to the construction areas on the project site;
- No dogs or cats other than those of the landowners should be allowed on site;
- Any holes dug e.g. for foundations should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter;
- If double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences;
- Temporary fencing must be suitably constructed, e.g. if double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences;
- Roadkill is to be reported to the ECO and removed as soon as possible.
- The installation of cattle grids should be done in such a manner as to allow the escape of chicks should they fall in
- Appropriate (Eskom approved) Bird flight diverters (BFDs) to be affixed to the entire length of novel above-ground overhead power lines;
- The type of bird flight diverter (BFD) and spacings of the BFDs are optimised for Denham's Bustards and Blue Cranes in consultation with an avifauna specialist prior to their fitment;

4.2.31 Bat Management

Objectives: To minimise or prevent, where possible, the disturbance, displacement or destruction of bats and bat roost areas.

Targets: To ensure compliance with the statutory requirements relating to management of bat resources.

Measures:

- Destruction of bat roosts due to earthworks and blasting
    - It may be possible to limit roost abandonment by avoiding construction activities near roosts. No roosts were found on site but there may be more potential roosts that bats may be using including trees and buildings.
    - It is recommended that potential roosts, specifically trees and buildings, are buffered by 200 m inside which no turbine infrastructure may be placed. These buffers have been mapped (Figure 2) and are to blade tip. No construction activities must occur within 1 km of any confirmed roost.
    - It is recommended that a bat specialist survey the confirmed turbine locations and all other proposed site infrastructure for the presence of roosts within 200 m before any construction activities commence
    - If occupied roosts are confirmed these should be buffered based on best practise guidance, which includes a minimum buffer of 200 m

- Loss of foraging habitat and habitat modification
    - Adhere to the sensitivity map.
    - During construction, laydown areas and temporary access roads should be kept to a minimum in order to limit direct vegetation loss and habitat fragmentation.
    - Construction should, where possible, be situated in areas that are already disturbed. This impact must be reduced by limiting the removal of vegetation, particularly trees, as far as possible. Habitat modification should also not occur in the no-go areas of the sensitivity map.
    - Following construction, rehabilitation of all disturbed areas (e.g. temporary access tracks and laydown areas) must be undertaken and a habitat restoration plan must be developed by a botanical specialist and included within the EMPr
- Light Pollution
    - This impact can be mitigated by using as little lighting as possible, and only where essential for operation of the facility.
    - Where lights need to be used such as at the substation and switching station and elsewhere, these should have low attractiveness for insects such as low-pressure sodium and warm white LED lights (Rydell 1992; Stone 2012). High pressure sodium and white mercury lighting is attractive to insects (Blake et al. 1994; Rydell 1992; Svensson & Rydell 1998) and should not be used as far as possible.
    - Lighting should be fitted with movement sensors to limit illumination and light spill, and the overall lit time. In addition, the spread of light should be directed downward (below the horizontal plane) to minimise light trespass and sky glow.
    - Increasing the spacing between lights, and the height of light units can reduce the intensity and volume of the light to minimise the area illuminated and give

4.2.32 Aquatic/ Wet Environment Management

Objectives: To ensure that the best practice is followed with regards to wet environments management, rehabilitation, management and operations.

Targets: To ensure that the wetland and rivers areas on site are not impacted during the establishment of the proposed development, and to ensure that all statutory requirements are adhered to.

Measures:

- ***A pre-construction walkthrough with an aquatic specialist is recommended and they can assist with the development of the stormwater management plan and Aquatic Rehabilitation and Monitoring plan, coupled to micro-siting of the final layout.***
- ***Where large cut and fill areas are required these must be stabilised and rehabilitated during the construction process, to minimise erosion and sedimentation.***
- ***Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).***
- ***To minimise the impact of the access roads:***
    - ***Use existing roads or upgrade existing tracks to cross wetlands rather than constructing entirely new roads wherever possible.***
    - ***Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.***
    - ***Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.***
    - ***All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. Crossings that are installed below the natural ground level are to be constructed with an appropriate drop inlet structure on the upstream side to ensure that headcut erosion does not develop as a result of the gradient change from the natural ground level to the invert level of the culvert.***
    - ***The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown.***
    - ***Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.***
    - ***Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.***
    - ***All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated.***
    - ***It is the contractor's responsibility to continuously monitor the area for newly***

established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.

- Construction areas within 50m of any freshwater ecosystem must have clearly defined, approved work areas / footprints, which must be clearly demarcated on site, to limit the risk of potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5m on either side of the crossing may be implemented and the reaches of the freshwater ecosystem up- and downstream of the construction ROW must be designated 'no- go' areas;
- As far as possible, the use of hard engineering techniques such as gabions, reno mattresses and so forth to manage erosion and sedimentation must be avoided. Where feasible, employment of 'soft' techniques such as biodegradable hessian sheeting with coir logs, brush cutting stabilised with additional cobbles and soil, or step-cutting and revegetation with indigenous flora is preferred for bank stabilisation. Further detail in this regard is provided in the freshwater rehabilitation and management plan (FEN, 2023);
- Further to the above, Acacia spp. were noted to occur within several drainage systems within the Overberg WEF project boundary. Removal of these trees is recommended albeit not within the duty of care of the proponent; however, felled tree trunks and larger branches without seeds and roots (to avoid perpetuating growth of these species) could be utilised in slope and bank stabilisation;
- Vegetation cleared from construction areas is to be limited to the approved development footprint. Indigenous vegetation which is viable for replanting is to be retained for utilisation in disturbed areas post-construction. Alien vegetation must be removed to a licensed waste facility and may not be stockpiled, mulched, composted or burnt on site, with the exception of trunks and sturdy branches which are to be used for erosion control as above;
- Accumulated sediment and debris within freshwater ecosystem crossings is to be removed manually or by the lightest equipment possible to minimise disturbances to soil and hydraulic patterns within the freshwater ecosystems;
- Management of potential sources of contamination within the batching areas (specifically batching areas 1 and 2) is extremely important, given that both sites are within 30m and upgradient of freshwater ecosystems. A clean and dirty water separation trench and berm must be developed between these sites and the downgradient watercourses, which must be restored to pre-development topography and rehabilitated during decommissioning of the batching sites;
- Additional care must be taken around temporary laydown area 2B, and batching plants 3 and 3, as these are high-traffic, high utilisation areas during the construction phase, and are upgradient and within 30 m of various freshwater ecosystems. Thus the potential for indirect impacts is greatly increased.
- Concrete and cement-related mortars can be toxic to aquatic life. Proper handling and disposal should minimise or eliminate discharges into the freshwater ecosystems. High alkalinity associated with cement can dramatically affect and contaminate both soil and ground water. The following measures are specific to concrete works within the batching sites and must be adhered to:
    - Fresh concrete and cement mortar should not be mixed near the freshwater ecosystems. Mixing of cement may be done within the batching site, on an impervious

surface only, and must be within a lined, bound or bunded portable mixer. Consideration must be given to the use of ready mix concrete if possible;
    - No mixed concrete maybe deposited directly onto the ground within the freshwater ecosystems, outside of the designated area (e.g. at road crossings, no closer than 5 m to the freshwater ecosystem). All concrete for any works within the freshwater ecosystems must be brought in via a cement mixing truck which must remain 5 m from the crossing, and cement must be piped down to the construction site. Any areas that require manual application of cement require that mixed cement be placed on a batter board or other suitable platform/mixing tray until it is deposited;
    - A washout area must be designated outside of the freshwater ecosystems, and wash water must be treated on-site or discharged to a suitable sanitation system
    - At no point may batter boards/mixing trays or cement trucks be rinsed off on site and run- off water be allowed into the freshwater ecosystems;
    - Cement bags (if any) must be disposed of in the demarcated hazardous waste receptacles and the used bags must be disposed of through the hazardous substance waste stream; and
    - Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.
- Water is planned to be abstracted from existing boreholes within the Overberg WEF project boundary. Abstraction must be carefully managed according to the recommendations made by the geohydrologist, to ensure that groundwater levels are maintained and that dewatering of freshwater ecosystems does not occur; and
- As far as possible, underground cabling must be installed across freshwater ecosystems by means of pipe-jacking/micro-tunnelling. If trenching cannot be avoided, the following measures must be taken:
    - Trenching must, as far as practically possible, be undertaken during the dry, summer low- flow period, to contain the impacts from the construction phase;
    - The construction footprint must be limited to the width of the trench and a construction ROW (to allow for the temporary stockpiling of soil and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation;
    - The stockpiles must remain as small as possible and may not exceed 2m in height to prevent excessive dust generation that could smother wetland vegetation and impact the downstream reach of the freshwater ecosystem;
    - The duration of open trenching through any freshwater ecosystem must be kept as short as possible;
    - Trenching will potentially result in bank destabilisation, and cause bank incision and sedimentation of the freshwater ecosystem therefore, sediment control devices (such as geotextile sediment traps) must be installed prior to trenching activities downgradient of the construction works to limit any sediment from entering the downstream reach. Sediment traps should allow for surface runoff should a rainfall event occur;
    - During trenching through the freshwater ecosystem, soil may be stockpiled on the upgradient edges of the excavation in order to limit potential sedimentation of the freshwater ecosystem. In cases where the space does not allow for the stockpiling of excavated material, then protective sheeting must be used to stockpile soil on the

downgradient edges. Mixture of the lower and upper layers of the excavated soil should be kept to a minimum;

- During trenching activities, seepage water may be present within the trench - invariably this will be filled with silt and have high suspended solid loads. Therefore, any seepage must not be discharged directly into the downstream reach of the freshwater ecosystem but must rather dewatered and pumped into a small stilling basin first before being released to the receiving environment;
- The stockpiled soil must be used to backfill the trench, immediately after constructing the pipeline;
- Material used as bedding material (at the bottom of the excavated trench) should be stockpiled outside of the delineated boundary of the freshwater ecosystem. Once the trench has been excavated, the bedding material should directly be placed within the trench rather than stockpiling it alongside the trench;
- The bedding layer (such as clean gravel) must be spread evenly and compacted uniformly to the required density using a hand tamper (one-man operator) in order to minimise the use of large machinery within the defined extent of any watercourses.
- Depending on the substrate of the active channel, the same channel bed material must be returned - i.e., if cobbles, cobbles must be replaced;
- Once the cabling has been installed, the stockpiled soil must be used as backfill for the trench, while keeping the disturbance footprint to a minimum – no indiscriminate movement of construction machinery by personnel. The trench must be filled with soil in the same sequence as it was removed. It is imperative that topsoil be reinstated to ensure suitable rehabilitation of vegetation;
- The trench must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion and the upper 300mm must be ripped for reestablishment of vegetation. However, consideration must be given to accounting for subsidence of the soil level over time by allowing for a slightly higher soil level in the trench (depending on the soil type). Therefore, monitoring post construction is required. Conversely, areas compacted as a result of construction activities (within the 5 m construction ROW must be loosened to natural soil compaction levels;
- Proliferation of alien vegetation must be monitored and controlled;
- Unused excavated soil/sediment must be utilised as part of the open space area or be removed from site to a registered landfill.

- Disturbance and loss of aquatic habitat
  - Where large cut and fill areas are required these must be stabilised and rehabilitated during the construction process, to minimise erosion and sedimentation.
  - Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).
  - To minimise the impact of the access roads:
    - Use existing roads or upgrade existing tracks to cross wetlands rather than constructing entirely new roads wherever possible.
    - Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion

into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.

- Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.
- All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. Crossings that are installed below the natural ground level are to be constructed with an appropriate drop inlet structure on the upstream side to ensure that 'headcut' erosion does not develop as a result of the gradient change from the natural ground level to the invert level of the culvert.
- Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.
- Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.
- All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated.
- It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.

- Potential impact on localised surface water quality
  - All liquid chemicals including fuels and oil, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely.
  - Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment).
  - Mechanical plant and bowsers must not be refuelled or serviced within 100m of a river channel.
  - All construction camps, lay down areas, wash bays, batching plants or areas and any stores should be more than 50m from any demarcated water courses.
  - Littering and contamination associated with construction activity must be avoided through effective construction camp management.
  - No stockpiling should take place within or near a water course.
  - All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.
  - ESO monitors the site on a daily basis to ensure plant is in working order (minimise leaks), spills are prevented and if they do occur, are quickly rectified

- Impact on riparian and wetland system – Changes to the Hydrological regime
    - The buffer area must be considered as a No Go area for development and large infrastructure.
    - A stormwater management plan must be developed (Annexure K) in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems.
    - The stormwater management infrastructure must be designed to ensure the runoff from the development is not highly concentrated before entering the buffer area.
    - The volume and velocity of water must be reduced through discharging the surface flow at multiple locations surrounding the development, preventing erosion.
    - Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil. Contingency plans must be in place for high rainfall events which may occur during construction.
    - Monitoring of the project activities is essential to ensure the mitigation measures are implemented. Compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report
    - Sedimentation must be minimised with appropriate measures. Any construction, within or directly upslope of a watercourse, causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using rows of silt fences, sandbags, hay bales and/or earthen berms spaced along contours at regular intervals. Construction must have contingency plans for high rainfall events during construction.
    - Energy dissipaters should be installed to prevent scour at any culvert outlet. This can be constructed of appropriately sized rock armour. Coarse bedding material or geotextile wrapped dump rock must be considered for use wherever the roads crosses wetland characterized by diffuse subsurface flows such as the seeps.
    - Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the volume/velocity of the water reduced through further structures and/or energy dissipaters.

The Aquatic Rehabilitation Monitoring Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure I of the EMPr

4.2.33 Stormwater and Erosion Management

Objectives: To ensure that erosion and storm water are controlled and managed.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to management of storm water and erosion.

Measures:

- During the construction phase, site management must be undertaken at the laydown area, batching plant and the individual turbine construction areas. This should specifically address

on-site stormwater management and prevention of pollution measures from any potential pollution sources during the construction activities such as hydrocarbon spills. Any stormwater that does arise within the construction sites must be handled suitably to trap sediments and reduce flow velocities.

- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.
- Extra care should be taken that structures of the proposed WEF development are not placed within these drainage lines and do not obstruct the flow of runoff water.
- Slow stormwater, and in such a way lessen erosion on the site. The local material such as the rocks found within the area could be applied to the stormwater runoff from the road to prevent erosion.
- Take all reasonable measures to control storm water and the erosive effects thereof and provide a Method Statement for approval by the PM and ECO/ESCO.
- Areas affected by construction related activities and/or susceptible to erosion must be monitored regularly for evidence of erosion. Ongoing monitoring must be carried out on the interventions that have been proposed to deactivate the existing erosional features to ensure that they are successful in terms of meeting their objectives. Modifications to the interventions may be required if it is found that the interventions are not entirely meeting their objectives in terms of stabilising the existing erosional features.
- As it is relatively unclear at this stage to fully understand what impact the proposed development is going to have in terms of erosion, it is recommended that the drainage lines be monitored on a regular basis to ensure that any erosion is adequately managed.
- In general, the areas where concentrated flows develop as a result of the proposed development must be monitored for erosion and corrective measures implemented accordingly. Areas of particular concern would include, but are not limited to, the discharge points from the laydown and WEF footprint areas.
- The farm road network must be monitored regularly to determine areas where stormwater may be concentrated or diverted which may lead to erosion. In addition, the crossing points at the drainage lines must be monitored for signs of erosion.
- In general, the site must be monitored following any large-scale storm event as well as periodically on an annual basis.
- A monitoring program must be developed during the final design stage to ensure that impacts, both during the construction phase, are managed.
- Protect streams, rivers, pans, wetlands, dams, and their catchments from erosion, direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products.
- Inspect storage containers regularly to prevent leaks into the aquatic system.
- On any areas where the risk of erosion is evident, special measures may be necessary to stabilise the areas and prevent erosion. These may include, but not be restricted to:
    - Confining construction activities
    - Using cut-off berms
    - Using mechanical cover or packing structures such as geo-fabric to stabilise steep slopes or hessian, gabions and mattress and retaining walls

  - Straw stabilising
  - Brush cut packing
  - Constructing anti-erosion berms.
- The erosion prevention measures must be implemented to the satisfaction of the PM and ECO/ESCO.
- Where erosion does occur on any completed work/working areas, reinstate such areas and areas damaged by the erosion at the expense of the Contractor and to the satisfaction of the PM and ECO/ESCO.
- Restrict and control traffic and movement over stabilised areas.
- Repair and maintain any damage to the stabilised areas to the satisfaction of the PM and ECO/ESCO.
- The Contractor shall be liable for any damage to downstream property caused by the diversion of overland storm water flows.

The Stormwater Management Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure K of the EMPr

4.2.34 Terrestrial Biodiversity, Botany and Terrestrial Fauna

Objectives: To aid in the conservation of terrestrial biodiversity, floral and fauna habitat, floral biodiversity and protected floral species within the subject property as well as to promote the enhancement and good management of natural environmental features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to natural environment management.

Measures:

- Impact on vegetation and listed plant species due to transformation within the development footprint as a result of the WEF. Habitat loss is included.
  - Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.
  - Ensure runoff from compacted and sealed surfaces is adequately controlled to prevent accelerated erosion.
  - Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.
  - Revegetate all cleared areas as soon as possible with species as agreed on by the land-owner(s) and in co-ordination with the vegetation specialist (latter if the area will not be re-used for agricultural purposes after completion of construction).
  - Draft an alien plant control plan, to be implemented from construction through to the decommissioning phase.
  - Strictly prohibit the use of fire (e.g. for cooking or heating) outside specifically demarcated areas, if permissible on site at all.
  - Ensure adequate spill-prevention and control measure are in place to avoid or rapidly remediate any accidental spills of chemicals including hydrocarbons as well as non- natural substances (e.g. cement components).

- Potential habitat Loss and displacement of species of conservation concern due to subterranean cables
    - Once the location of these subterranean cables is confirmed a re-assessment of the potential impact on terrestrial plant species will be necessary.
    - Intersection with natural habitat should be avoided if possible.
    - Search and rescue of SCC, aimed towards the end of the growing season, when plants can still be observed but are busy shedding fruit/seed to ensure that below-ground storage organs have been fully replenished to survive the relocation. Re-vegetation of impacted vegetation and monitoring of re-vegetation efforts and success.
    - Same/improved mitigation efforts must be applied to any future maintenance of subterranean cables.
    - Ensure runoff from compacted and sealed surfaces is adequately controlled to prevent accelerated erosion.
    - Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.
    - Revegetate all cleared areas as soon as possible with species as agreed on by the land-owner(s) and in co-ordination with the vegetation specialist (latter if the area will not be re-used for agricultural purposes after completion of construction).
    - Draft an alien plant control plan, to be implemented from construction through to the decommissioning phase.
    - Strictly prohibit the use of fire (e.g. for cooking or heating) outside specifically demarcated areas, if permissible on site at all.
    - Ensure adequate spill-prevention and control measure are in place to avoid or rapidly remediate any accidental spills of chemicals including hydrocarbons as well as non- natural substances (e.g. cement components).
    - Where cabling cross riparian and or wetland areas, ensure that the river bed or wetland is fully re-instated, with riparian revegetation after cabling has been covered up
- Potential habitat loss and displacement of species of conservation concern due to access roads
    - Intersection with natural habitat should be avoided if possible.
    - Pre-construction walkthrough to verify the absence/presence of SCC.
    - Pre-construction walkthrough is also necessary to delineate all natural remnants of threatened vegetation units, which must be avoided for all development infrastructure except for cabling in which case this needs to be assessed on a site specific level.
    - Search and rescue of SCC.
    - Re-vegetation of impacted vegetation and monitoring of re-vegetation efforts and success.
    - Ensure runoff from compacted and sealed surfaces is adequately controlled to prevent accelerated erosion.
    - Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.

- Revegetate all cleared areas as soon as possible with species as agreed on by the land-owner(s) and in co-ordination with the vegetation specialist (latter if the area will not be re-used for agricultural purposes after completion of construction).
- Draft an alien plant control plan, to be implemented from construction through to the decommissioning phase.
- Strictly prohibit the use of fire (e.g. for cooking or heating) outside specifically demarcated areas, if permissible on site at all.
- Ensure adequate spill-prevention and control measure are in place to avoid or rapidly remediate any accidental spills of chemicals including hydrocarbons as well as non-natural substances (e.g. cement components).Ensure strict speed limits are enforced to minimise the impact of dust.
- Where access roads cross riparian and or wetland areas, ensure that appropriate culverts are installed that will be wider that the drainage line, and in no way concentrate flow. Where drifts instead of culverts/bridging is considered, ensure that erosion-control structures are installed downstream of the drift.

- Potential topsoil and/or water pollution due to Construction, Service and Maintenance of Turbines
  - Prevention: ensure that hydrocarbon containers are adequately sealed and have no leaks before accessing the site.
  - If a spill occurs, it must be contained and cleaned/treated immediately to prevent/reduce spread and contamination.
  - Re-vegetation of impacted vegetation and monitoring of re-vegetation efforts and success.
  - Ensure runoff from compacted and sealed surfaces is adequately controlled to prevent accelerated spread of hydrocarbon and erosion.
  - Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.
  - Strictly prohibit the use of fire (e.g. for cooking or heating or smoking) near potentially flammable hydrocarbons.
  - Ensure adequate spill-prevention and control measure are in place to avoid or rapidly remediate any accidental spills of chemicals including hydrocarbons as well as non- natural substances (e.g. cement components).Ensure strict speed limits are enforced to minimise the impact of dust
- Terrestrial Biodiversity
  - The maximum use of the extensive available road network must be utilised where practically possible;
  - The mitigation measures recommended by the aquatic, terrestrial animal and avifaunal assessments are to be implemented to reduce impacts on the relevant habitats;
  - Where the upgrading of roads requires increasing the width of the road surface, the increased with must occur in the direction of existing modified habitat, i.e. road widths increases are to avoid the disturbance or destruction of natural habitat in areas where the road network runs adjacent to remnant patches of natural or near-natural habitat.
  - The upgrading of roads must be undertaken with particular attention given to

designs that reduce the flooding and saturation of the road surface, as the area is prone to rainfall induced damage of the internal road network;

- The upgrading of roads must include the upgrading of river or channel crossings (where technically required) as to not impede the downstream movement of water or increase erosion and sedimentation and impacts to downstream environments;
- The upgrading of roads must include appropriate water runoff management and include erosion prevention and flow control structures to prevent downstream impacts such as increased sedimentation of drainage lines and rivers.
- The upgrading of roads must be conducted using the minimum widths technically required; The fencing off some of the remnant patches of natural or near-natural vegetation accessible to grazing livestock should be considered in consultation with relevant landowners as a means of controlling livestock access to these habitats; and
- Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation (e.g. autumn burning every 15 – 20 years for Renosterveld) in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the rejuvenation of mature Renosterveld,

- Fauna
  - The maximum use of the extensive available road network must be utilised where practically possible;
  - Where the upgrading of roads requires increasing the width of the road surface, the increased with must occur in the direction of existing modified habitat, i.e. road widths increases are to avoid the disturbance or destruction of natural habitat in areas where the road network runs adjacent to remnant patches of natural or near-natural habitat.
  - The upgrading of roads must be undertaken with particular attention given to designs that reduce the flooding and saturation of the road surface, as the area is prone to rainfall induced damage of the internal road network;
  - The upgrading of roads must include the upgrading of river or channel crossings (where technically required) as to not impede the downstream movement of water or increase erosion and sedimentation and impacts to downstream environments;
  - The upgrading of roads must include appropriate water runoff management and include erosion prevention and flow control structures to prevent downstream impacts such as increased sedimentation of drainage lines and rivers.
  - The upgrading of roads must be conducted using the minimum widths technically required;
  - Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the preferred habitat of the Yellow-winged Agile Grasshopper.

The Re-Vegetation and Habitat Rehabilitation Plan must be adhered to can be reviewed under Annexure M of the EMPr

4.2.35 Heritage Resource Management

Objectives: To aid in the conservation of heritage (including archaeological) resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of such resources.

Measures

- Any artefact collection or archaeological excavations are subject to a section 35 of the NHRA permit application process. Permits for mitigation measures must be applied for from Heritage Western Cape (HWC); and
- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the Environmental Management Programme execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.
- ~~Each identified archaeological sites within the WEF boundary (J003 – J009, G001) must be buffered by 50m and these buffers declared no-go areas prior and during the construction of the WEF.~~
- ~~If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution~~
- Palaeontology
    - The EAP and ECO/ESCO must be informed of the very high palaeontological significance of the WEF area.
    - The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must be implemented during the lifetime of the WEF and must be included as part of the EMPr for this project.
    - If fossils are exposed during the lifetime of the project, a suitably qualified palaeontological specialist must be appointed to collection them and to upgrade the "Chance Find Protocol" document, if required.
    - If deep (>2m) excavations into un-weathered sedimentary rocks of the Ceres Subgroup are planned as part of the construction of the WEF, these excavations must be monitored by a suitably qualified palaeontological specialist.
    - Fossils finds must be reported immediately to HWC.
    - Recommendations contained in the PIA must be approved by HWC for inclusion in the EMPr for the project.
- Archaeology
    - Each identified archaeological sites within the WEF boundary (J003 – J009, G001) must be buffered by 50m and these buffers declared no-go areas prior and during the construction of the WEF.
    - If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist.Such heritage is the property of the state and may require excavation and curation in an approved institution.

- Cemeteries and Graves:
    - The HIA recommended that if any human burials are uncovered during development, work in the immediate area must be halted and the remains made safe but left in situ. The finds must immediately be reported to the project archaeologist and HWC and arrangements made for an inspection to assess how the find will be dealt with.

4.2.36 Geology, Soils, and Agricultural Potential

Objectives: To aid in the conservation of and to protect soils and geology and soils with agricultural potential on site.

Targets: To ensure compliance with the local authority and national statutory requirements relating to conservation and management of soils, geology and soils with agricultural potential.

Measures:

- Loss of agricultural land
    - Mitigation measures are all inherent in the project design. A system of stormwater management, which will prevent erosion, will be an inherent part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control, where they occur on steeper slopes, must be kept in tact.

4.2.37 Visual Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to mitigate visual impacts to an acceptable level.

Targets: To ensure compliance with the local authority by laws, Visual Specialist recommendations and any other statutory requirements relating to Visual Management.

Measures:

- Visual effect of construction activities on scenic resources and sensitive receptors
    - Disturbed areas to be rehabilitated / revegetated as soon as possible during the construction phase.
    - Temporary laydown areas and batching plants to be placed away from arterial or district roads.
    - Stockpiles to be located within approved construction footprints.
    - Recycling and refuse bins to be provided to eliminate litter from the site.
    - ***Ensure that visual management measures are included as part of the EMPr, monitored by an Environmental Control Officer (ECO), including siting of any construction camps, stockpiles, temporary laydown areas and batching plants outside of identified no-go areas unless otherwise approved by the visual specialists, as well as the implementation of dust suppression and litter control measures. Rehabilitation efforts to commence immediately after construction activities are completed.***

4.2.38 Topsoil Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage topsoil storage.

Targets: To ensure compliance with the local authority by laws, Specialist recommendations and any

other statutory requirements relating to Topsoil Management.

Measures

- Topsoil can only be stripped from areas as indicated below:
    - Any area which is to be used for temporary storage of materials
    - Areas which could be polluted by any aspect of the construction activity
    - Areas designated for the dumping / stockpiling of soil
- or as instructed by the Customer's Representative or ECO/ESCO. Where topsoil (300mm) stripping forms part of the contract requirement the Contractor will store the excavated topsoil in an appropriate windrow or stockpile which shall be discernibly separate from wind rows or stockpiles of any other excavated materials, for future rehabilitation after decommissioning.
- Subsoil can be used – if suitable – for road construction.
- Stripping of topsoil will be undertaken in such a manner as to minimize erosion by wind or runoff.
- Topsoil shall not be disturbed more than is absolutely necessary.
- Topsoil stripping will only take place as the area becomes necessary for works to commence.
- Topsoil will not be contaminated with anything that might impair its plant-support capacity (e.g. aggregate, cement, concrete, fuels, litter, oils, domestic and industrial waste).
- Topsoil stockpiles will not be situated such that they obstruct natural water pathways.
- Stockpiles will not exceed 2m in height.
- Stockpiles will be kept clear of weeds and alien vegetation growth by regular weeding.
- After the completion of the backfilling, re-contouring and erosion control works, the Contractor shall spread the topsoil evenly at uniform depth over the areas from which it was removed, where this is a requirement of the contract specifications.

4.2.39 Agricultural Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage agriculture impacts on site

Targets: To ensure compliance with the local authority by laws, Agricultural Specialist recommendations and any other statutory requirements relating to agricultural management

Measures:

- All construction activities (i.e. vehicle movement) in cultivated fields should be minimised and contained within clearly demarcated areas.
- Ensure that as much as possible of the planned infrastructure be confined to transformed land, or non-arable areas.
- ***Avoid areas under cultivation where reasonably practicable.***
- Ensure that use is made of existing roads and servitudes etc. where at all possible.
- ***Vegetation clearing should occur in a phased manner to minimise erosion and/or run- off.***
- Topsoil (300mm) should be stored at an appropriate site on each farm for future rehabilitation after decommissioning.
- Subsoil can be used – if suitable – for road construction.
- It is the responsibility of the owner of the renewable energy project to ensure that suitable soil

conservation works be established on the site to limit or restrict the loss of soil.

- No renewable energy structure, supporting infrastructure or access routes shall in any manner divert any run-off water from a water course to any other water course or obstruct the natural flow pattern of runoff water, except with the permission from DAFF.
- All access routes, existing or newly constructed and utilised during the construction and / or maintenance of the renewable energy structures must be restored to its original state after completion of the establishment of the structures. Every care must be taken not to damage or degrade the status of the natural resources base of the farm during the construction phase of the mentioned or to impact negatively on the farming or production practices on the farm.All service routes that will be used to gain access to the renewable energy structures for maintenance purposes have to be covered in gravel, tarred or compressed in order to limit the possibility of degradation and erosion.
- The installation of the underground power cables should not negatively impact on the resource base of the site. During the installation, no soil conservation structure may be disturbed, the soil texture must be restored, the work area should not be wider than 5m, should not be directed through existing or future cultivated land nor impact negatively on existing farming infrastructure or any farming activity.
- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- Mitigation measures are all inherent in the project design. A system of storm water management, which will prevent erosion, will be an inherent part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control, where they occur on steeper slopes, must be kept in tact.

4.3 OPERATIONAL PHASE IMPACTS

Once the construction and commissioning of the WEF is complete, the project becomes operational. During operation of the development, the large majority of the WEF sites will continue with agricultural use as it is currently. The only development related activities on- site will be routine servicing and unscheduled maintenance.

The operator of the WEF has the responsibility to ensure that the mitigation measures proposed for the operational phase of the WEF is implemented and conducted appropriately. Recommended persons as provided in Table 6.2 below should take responsibility for the implementation and monitoring to ensure that all operational mitigation measures outlined in this document, and all revisions thereof, are complied with.

4.3.1 Health Awareness

A Prevention Management Plan must be implemented on the WEF site during the pre-construction, construction and operational phases. (If still relevant at the time)

4.3.2 Hazardous Material (Fuels, Oils and Others) Management

Objective: To minimise any hazardous fuel and oil material from causing environmental damage through the use, storage and/or handling of such hazardous material during the operational phase

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to hazardous materials.

Measures:

- Fuel must be stored on site in an area which was been approved by an Engineer and the ECO/ESCO.
- The Contractor shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are firmly shut and/or in bowsers.
- The tanks or bowsers are required to be located on smooth impermeable surfaces (concrete or plastic) with an earth bund.
- The impermeable lining shall extend to the crest of the bund and the volume of the bund will be 130% of the total of the storage tanks and/or bowsers located on the site.
- The bunded area is required to be sheltered from the rain.
- Provisions shall be made for refuelling at the fuel storage area, by protecting the open soil with bunding.
- If fuel will be dispensed from 200 litre drums, only empty clean drums will be able to be stored on the bare ground.
- All empty dirty drums must be stored on a bunded area.
- Should the use of a 200l drum be required, proper dispensing mechanisms are required to be used and the drum will not be allowed to be tipped in order to dispense the fuel.
- The dispensing mechanism for the fuel drums will be stored in a waterproof container when it is not in use.
- The Contractor will be required to prevent unauthorised access to the fuel storage area.
- No smoking will be allowed within the vicinity of the fuel storage areas. The Contractor must

ensure that adequate fire-fighting equipment is readily available at the fuel storage area.

- Where reasonably practical the plant shall be refuelled at the fuel storage area or at the workshop as applicable. If it is not possible then the surface under the refuelling area must be bunded with plastic and/or wooden pallets.
- The Contractor is required to ensure that absorbent materials are readily available in the vicinity of the refuelling areas to absorb and/or breakdown and where possible be designed to encapsulate minor hydrocarbon spills.
- This absorbent material must be able to absorb a minimum spill of 200l of hydrocarbons.
- The Contractor must obtain the Engineer's and ECO's approval for any refuelling or maintenance activities.
- All hazardous material containers are required to be inspected regularly to ensure that no leaks occur.
- The storage of general waste in excess of 100m³ and/ or the storage of hazardous waste in excess of 80m³, excluding the storage of waste in lagoons or the temporary storage (i.e. less than 90 days) of such waste, requires the applicant to comply with GN No. 926 of 29 November 2013: National Norms and Standards for the Storage of Waste.
- Hazardous materials (if any) which may be generated during the operation phase must be disposed of at approved hazardous waste landfill site.
- The Proponent or Contractor acting on his behalf shall ensure that an emergency preparedness plan is in place for implementation in the case of a spill.

4.3.3 Solid waste management

Objective: Adequate solid waste management on site

Measures:

During the operation phase, the area of the development must be cleared of litter on a regular basis. Once collected, this litter shall be disposed of at an approved waste disposal site.

4.3.4 Aquatic/ Wet environment Management

Objectives: To ensure that the best practice is followed with regards to wet environments (rivers and wetlands), management and operations.

Targets: To ensure that the wet areas (rivers and wetlands) on site are not impacted during the operational phase of the facility.

Measures: *The Operation phase Impact Mitigation measures are as per the Construction phase, copied below for ease of reference:*

- ***A pre-construction walkthrough with an aquatic specialist is recommended and they can assist with the development of the stormwater management plan and Aquatic Rehabilitation and Monitoring plan, coupled to micro-siting of the final layout.***
- ***Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).***

- ***To minimise the impact of the access roads:***
    - ***Use existing roads or upgrade existing tracks to cross wetlands rather than constructing entirely new roads wherever possible.***
    - ***Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.***
    - ***Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.***
    - ***All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. Crossings that are installed below the natural ground level are to be constructed with an appropriate drop inlet structure on the upstream side to ensure that headcut erosion does not develop as a result of the gradient change from the natural ground level to the invert level of the culvert.***
    - ***The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown.***
    - ***Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.***
    - ***Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.***
    - ***All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated.***
    - ***It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.***
- ~~Construction areas within 50m of any freshwater ecosystem must have clearly defined, approved work areas / footprints, which must be clearly demarcated on site, to limit the risk of potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5m on either side of the crossing may be implemented and the reaches of the freshwater ecosystem up- and downstream of the construction ROW must be designated 'no- go' areas;~~
- As far as possible, the use of hard engineering techniques such as gabions, reno mattresses and so forth to manage erosion and sedimentation must be avoided. Where feasible, employment of 'soft' techniques such as biodegradable hessian sheeting with coir logs, brush

cutting stabilised with additional cobbles and soil, or step-cutting and revegetation with indigenous flora is preferred for bank stabilisation. Further detail in this regard is provided in the freshwater rehabilitation and management plan (FEN, 2023);

- Further to the above, Acacia spp. were noted to occur within several drainage systems within the Overberg WEF project boundary. Removal of these trees is recommended albeit not within the duty of care of the proponent; however, felled tree trunks and larger branches without seeds and roots (to avoid perpetuating growth of these species) could be utilised in slope and bank stabilisation;
- ~~Vegetation cleared from construction areas is to be limited to the approved development footprint. Indigenous vegetation which is viable for replanting is to be retained for utilisation in disturbed areas post-construction. Alien vegetation must be removed to a licensed waste facility and may not be stockpiled, mulched, composted or burnt on site, with the exception of trunks and sturdy branches which are to be used for erosion control as above;~~
- Accumulated sediment and debris within freshwater ecosystem crossings is to be removed manually or by the lightest equipment possible to minimise disturbances to soil and hydraulic patterns within the freshwater ecosystems;
- ~~Management of potential sources of contamination within the batching areas (specifically batching areas 1 and 2) is extremely important, given that both sites are within 30m and upgradient of freshwater ecosystems. A clean and dirty water separation trench and berm must be developed between these sites and the downgradient watercourses, which must be restored to pre-development topography and rehabilitated during decommissioning of the batching sites;~~
- ~~Additional care must be taken around temporary laydown area 2B, and batching plants 3 and 3, as these are high traffic, high utilisation areas during the construction phase, and are upgradient and within 30 m of various freshwater ecosystems. Thus the potential for indirect impacts is greatly increased.~~
- ~~Concrete and cement-related mortars can be toxic to aquatic life. Proper handling and disposal should minimise or eliminate discharges into the freshwater ecosystems. High alkalinity associated with cement can dramatically affect and contaminate both soil and ground water. The following measures are specific to concrete works within the batching sites and must be adhered to:~~
    - ~~Fresh concrete and cement mortar should not be mixed near the freshwater ecosystems. Mixing of cement may be done within the batching site, on an impervious surface only, and must be within a lined, bound or bunded portable mixer. Consideration must be given to the use of ready mix concrete if possible;~~
    - ~~No mixed concrete maybe deposited directly onto the ground within the freshwater ecosystems, outside of the designated area (e.g. at road crossings, no closer than 5 m to the freshwater ecosystem). All concrete for any works within the freshwater ecosystems must be brought in via a cement mixing truck which must remain 5 m from the crossing, and cement must be piped down to the construction site. Any areas that require manual application of cement require that mixed cement be placed on a batter board or other suitable platform/mixing tray until it is deposited;~~
    - ~~A washout area must be designated outside of the freshwater ecosystems, and wash water must be treated on-site or discharged to a suitable sanitation system~~
    - ~~At no point may batter boards/mixing trays or cement trucks be rinsed off on site and run- off water be allowed into the freshwater ecosystems;~~

- ~~Cement bags (if any) must be disposed of in the demarcated hazardous waste receptacles and the used bags must be disposed of through the hazardous substance waste stream; and~~
- ~~Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.~~

- Water is planned to be abstracted from existing boreholes within the Overberg WEF project boundary. Abstraction must be carefully managed according to the recommendations made by the geohydrologist, to ensure that groundwater levels are maintained and that dewatering of freshwater ecosystems does not occur; and
- ~~As far as possible, underground cabling must be installed across freshwater ecosystems by means of pipe jacking/micro tunnelling. If trenching cannot be avoided, the following measures must be taken:~~
  - ~~Trenching must, as far as practically possible, be undertaken during the dry, summer low- flow period, to contain the impacts from the construction phase;~~
  - ~~The construction footprint must be limited to the width of the trench and a construction ROW (to allow for the temporary stockpiling of soil and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation;~~
  - ~~The stockpiles must remain as small as possible and may not exceed 2m in height to prevent excessive dust generation that could smother wetland vegetation and impact the downstream reach of the freshwater ecosystem;~~
  - ~~The duration of open trenching through any freshwater ecosystem must be kept as short as possible;~~
  - ~~Trenching will potentially result in bank destabilisation, and cause bank incision and sedimentation of the freshwater ecosystem therefore, sediment control devices (such as geotextile sediment traps) must be installed prior to trenching activities downgradient of the construction works to limit any sediment from entering the downstream reach. Sediment traps should allow for surface runoff should a rainfall event occur;~~
  - ~~During trenching through the freshwater ecosystem, soil may be stockpiled on the upgradient edges of the excavation in order to limit potential sedimentation of the freshwater ecosystem. In cases where the space does not allow for the stockpiling of excavated material, then protective sheeting must be used to stockpile soil on the downgradient edges. Mixture of the lower and upper layers of the excavated soil should be kept to a minimum;~~
  - ~~During trenching activities, seepage water may be present within the trench - invariably this will be filled with silt and have high suspended solid loads. Therefore, any seepage must not be discharged directly into the downstream reach of the freshwater ecosystem but must rather dewatered and pumped into a small stilling basin first before being released to the receiving environment;~~
  - ~~The stockpiled soil must be used to backfill the trench, immediately after constructing the pipeline;~~
  - ~~Material used as bedding material (at the bottom of the excavated trench) should be stockpiled outside of the delineated boundary of the freshwater ecosystem. Once the trench has been excavated, the bedding material should directly be placed within the trench rather than stockpiling it alongside the trench;~~

- ~~The bedding layer (such as clean gravel) must be spread evenly and compacted uniformly to the required density using a hand tamper (one-man operator) in order to minimise the use of large machinery within the defined extent of any watercourses.~~
- ~~Depending on the substrate of the active channel, the same channel bed material must be returned - i.e., if cobbles, cobbles must be replaced;~~
- ~~Once the cabling has been installed, the stockpiled soil must be used as backfill for the trench, while keeping the disturbance footprint to a minimum – no indiscriminate movement of construction machinery by personnel. The trench must be filled with soil in the same sequence as it was removed. It is imperative that topsoil be reinstated to ensure suitable rehabilitation of vegetation;~~
- ~~The trench must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion and the upper 300mm must be ripped for reestablishment of vegetation. However, consideration must be given to accounting for subsidence of the soil level over time by allowing for a slightly higher soil level in the trench (depending on the soil type). Therefore, monitoring post construction is required. Conversely, areas compacted as a result of construction activities (within the 5 m construction ROW must be loosened to natural soil compaction levels;~~
- Proliferation of alien vegetation must be monitored and controlled;
- ~~Unused excavated soil/sediment must be utilised as part of the open space area or be removed from site to a registered landfill.~~

- Disturbance and loss of aquatic habitat
  - ~~Where large cut and fill areas are required these must be stabilised and rehabilitated during the construction process, to minimise erosion and sedimentation.~~
  - Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).
  - To minimise the impact of the access roads:
    - Use existing roads or upgrade existing tracks to cross wetlands rather than constructing entirely new roads wherever possible.
    - Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.
  - Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.
  - All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. Crossings that are installed below the natural ground level are to be constructed with an appropriate drop inlet structure on the upstream side to ensure that 'headcut' erosion does not develop as a result of the gradient change from the natural ground level to the invert level of the culvert.
  - Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for

any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.

- Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.
- ~~All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated.~~
- ~~It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.~~

- ~~Potential impact on localised surface water quality~~
  - ~~All liquid chemicals including fuels and oil, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely.~~
  - ~~Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment).~~
  - ~~Mechanical plant and bowsers must not be refuelled or serviced within 100m of a river channel.~~
  - ~~All construction camps, lay down areas, wash bays, batching plants or areas and any stores should be more than 50m from any demarcated water courses.~~
  - ~~Littering and contamination associated with construction activity must be avoided through effective construction camp management.~~
  - ~~No stockpiling should take place within or near a water course.~~
  - ~~All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.~~
  - ~~ESO monitors the site on a daily basis to ensure plant is in working order (minimise leaks), spills are prevented and if they do occur, are quickly rectified~~
- Impact on riparian and wetland system – Changes to the Hydrological regime
  - The buffer area must be considered as a No Go area for development and large infrastructure.
  - A stormwater management plan must be developed (Annexure K) in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems.
  - The stormwater management infrastructure must be designed to ensure the runoff from the development is not highly concentrated before entering the buffer area.
  - The volume and velocity of water must be reduced through discharging the surface flow at multiple locations surrounding the development, preventing erosion.
  - Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil. Contingency plans must be in place for high rainfall

events which may occur during construction.

- Monitoring of the project activities is essential to ensure the mitigation measures are implemented. Compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report
- Sedimentation must be minimised with appropriate measures. Any construction, within or directly upslope of a watercourse, causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using rows of silt fences, sandbags, hay bales and/or earthen berms spaced along contours at regular intervals. Construction must have contingency plans for high rainfall events during construction.
- Energy dissipaters should be installed to prevent scour at any culvert outlet. This can be constructed of appropriately sized rock armour. Coarse bedding material or geotextile wrapped dump rock must be considered for use wherever the roads crosses wetland characterized by diffuse subsurface flows such as the seeps.
- Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the volume/velocity of the water reduced through further structures and/or energy dissipaters.

The Stormwater Management Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure K of the EMPr

4.3.5 Stormwater and Erosion Management

Objectives: To ensure that erosion and storm water are controlled and managed.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to management of storm water and erosion.

- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.
- Monitoring of the site be carried out, both during and after construction, to identify potential impacts on the natural systems as a result of altered flow patterns. It is proposed that features on site be monitored after large storm events.
- The natural drainage lines, diversion channel and dam walls must be monitored for signs of erosion and scouring which may be brought about by alterations to the natural hydrological characteristics of the site in the post development scenario. Increased sediment loads entering the dams should also be monitored for in the post development scenario. In addition, the discharge points from the laydown and substation areas, as well as the areas around the Turbines must be monitored for signs of concentrated flows and erosion.
- The road network must be monitored regularly to determine areas where stormwater may be concentrated or diverted which may lead to erosion. In addition, the crossing points at the

drainage features must be monitored for signs of erosion.

- Should signs of erosion and alterations to the natural flow patterns be identified, a suitably qualified engineer must be appointed to design appropriate interventions to address the issues as they arise.
- The various protective measures that were installed during the construction phase must be properly maintained, e.g. the vegetation of road verges and cut faces must be inspected and maintained on a regular basis.

The Stormwater Management Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure K of the EMPr

4.3.6 Access and Signage

Objectives: Access control and signage on site

Measures:

- All access requirements must be identified and detailed by the Contractor. Communities, landowners and/or developers within the turbine site will be required to apply for access to the Operator. The Operator must consider each application and consult with each applicant in this regard.

- Avoid signs near wind turbines unless they serve to inform the public about wind turbines and their function. Advertising billboards must be avoided.

4.3.7 Maintenance

Objectives: Adequate maintenance on site

Measures:

- The components of the turbines and associated infrastructure shall be maintained in a good working order so as to minimise impacts associated with the malfunctioning of a wind turbine.
- Scheduled repairs must be carried out during daylight working hours during the working week.
- Road maintenance must be conducted on the service roads within and around the development site by the Developer as and when necessary.
- Spinning rotor is perceived as being useful but stationary rotor when the wind is blowing is seen as not fulfilling its purpose and a negative impression is created.

4.3.8 Flora and Fauna Management

Objectives: To aid in the conservation of floral and fauna habitat, biodiversity and protected floral species within the subject property.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to natural environment management.

Measures:

- ***Airborne soil particles***
    - ***If the proposed location of infrastructure components will change to impact natural or semi-natural impact, a re-assessment of the potential impact on terrestrial plant***

species will be necessary.

- ***Once the location of infrastructure components without proposed locations is confirmed a re-assessment of the potential impact on terrestrial plant species will be necessary.***
- ***Pre-construction walkthroughs to verify the absence/presence of Species of Conservation Concern (SCC) and extent of alien invasive plant infestations.***
- ***Pre-construction walkthrough must also be done to delineate all natural remnants of threatened vegetation units (Figure 7), which must be avoided for all development infrastructure except for cabling in which case this needs to be assessed on a site specific level.***
- ***Ensure runoff from compacted and sealed surfaces is adequately controlled to prevent accelerated erosion.***
- ***Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.***
- ***Revegetate all cleared areas (no natural vegetation remnants are to be cleared) as soon as possible with species as agreed on by the land-owner(s) and in co-ordination with the vegetation specialist (latter if the area will not be re-used for agricultural purposes after completion of construction).***
- ***Draft an alien plant control plan, to be implemented from construction through to the decommissioning phase.***
- ***Strictly prohibit the use of fire (e.g. for cooking or heating) outside specifically demarcated areas, if permissible on site at all.***
- ***Ensure adequate spill-prevention and control measure are in place to avoid or rapidly remediate any accidental spills of chemicals including hydrocarbons as well as non-natural substances (e.g. cement components).***
- ***Once the location subterranean cables is confirmed a re-assessment of the potential impact on terrestrial plant species will be necessary.***
- ***Intersection of subterranean cables with natural habitat should be avoided.***
- ***Same/improved mitigation efforts must be applied to any future maintenance of subterranean cables.***
- ***Search and rescue of impacted SCC, aimed towards the end of the growing season, when plants can still be observed but are busy shedding fruit/seed to ensure that below-ground storage organs have been fully replenished to survive the relocation.***
- ***Where cabling cross riparian and or wetland areas, ensure that the river bed or wetland is fully re-instated, with riparian revegetation after cabling has been covered up.***
- ***Where access roads cross riparian and or wetland areas, ensure that appropriate culverts are installed that will be wider that the drainage line, and in no way concentrate flow. Where drifts instead of culverts/bridging is considered, ensure that erosion-control structures are installed downstream of the drift.***
- ***Prevention of hydrocarbon spills by ensuring that containers are adequately sealed and have no leaks before accessing the site.***
- ***If a spill occurs, it must be contained and cleaned/treated immediately to prevent/reduce spread and contamination.***

- Strictly prohibit the use of fire (e.g. for cooking or heating or smoking) near potentially flammable hydrocarbons.

- Intersection with natural habitat should be avoided if possible.
- ~~Re-vegetation of impacted vegetation and monitoring of re-vegetation efforts and success.~~
- Ensure runoff from compacted and sealed surfaces is adequately controlled to prevent accelerated erosion.
- Strictly demarcate permissible areas for vehicle and machinery, and enforce no access beyond such areas - unless there is a justifiable case of emergency, after which appropriate rehabilitation and revegetation will have to be implemented.
- Revegetate all cleared areas as soon as possible with species as agreed on by the land-owner(s) and in co-ordination with the vegetation specialist (latter if the area will not be re-used for agricultural purposes after completion of construction).
- ~~Draft an alien plant control plan, to be implemented from construction through to the decommissioning phase.~~
- Strictly prohibit the use of fire (e.g. for cooking or heating) outside specifically demarcated areas, if permissible on site at all.
- Should cable cross riparian and or wetland areas, ensure that the river bed or wetland is fully re-instated with riparian revegetation after cabling maintenance has been completed
- The mitigation measures recommended by the aquatic, terrestrial animal and avifaunal assessments are to be implemented to reduce impacts on the relevant habitats;
- The fencing off some of the remnant patches of natural or near-natural vegetation accessible to grazing livestock should be considered in consultation with relevant landowners as a means of controlling livestock access to these habitats; and
- Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation (e.g. autumn burning every 15 – 20 years for Renosterveld) in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the rejuvenation of mature Renosterveld,
- The maximum use of the extensive available road network must be utilised where practically possible;
- Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the preferred habitat of the Yellow-winged Agile Grasshopper.

The Re-Vegetation and Habitat Rehabilitation Plan must be adhered to can be reviewed under Annexure M of the EMPr

4.3.9 Heritage Resource Management

Objectives: To aid in the conservation of heritage (including archaeological) resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of such resources.

Measures:
The Operation phase Impact Mitigation measures are as per the Construction phase, copied below for ease of reference:

- Any artefact collection or archaeological excavations are subject to a section 35 of the NHRA

permit application process. Permits for mitigation measures must be applied for from Heritage Western Cape (HWC); and

- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the Environmental Management Programme execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.
- ~~Each identified archaeological sites within the WEF boundary (J003 – J009, G001) must be buffered by 50m and these buffers declared no-go areas prior and during the construction of the WEF.~~
- ~~If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution~~
- Palaeontology
    - The EAP and ECO/ESCO must be informed of the very high palaeontological significance of the WEF area.
    - The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must be implemented during the lifetime of the WEF and must be included as part of the EMPr for this project.
    - If fossils are exposed during the lifetime of the project, a suitably qualified palaeontological specialist must be appointed to collection them and to upgrade the "Chance Find Protocol" document, if required.
    - ~~If deep (>2m) excavations into un-weathered sedimentary rocks of the Ceres Subgroup are planned as part of the construction of the WEF, these excavations must be monitored by a suitably qualified palaeontological specialist.~~
    - ~~Fossils finds must be reported immediately to HWC.~~
    - ~~Recommendations contained in the PIA must be approved by HWC for inclusion in the EMPr for the project.~~
- Archaeology
    - Each identified archaeological sites within the WEF boundary (J003 – J009, G001) must be buffered by 50m.
    - ~~If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist.Such heritage is the property of the state and may require excavation and curation in an approved institution.~~
- ~~Cemeteries and Graves:~~
    - ~~The HIA recommended that if any human burials are uncovered during development, work in the immediate area must be halted and the remains made safe but left in situ. The finds must immediately be reported to the project archaeologist and HWC and arrangements made for an inspection to assess how the find will be dealt with.~~

4.3.10 Avifaunal No-Net Loss

Objectives: To identify and mitigate any losses of avifaunal Species of Conservation Concern occurring as a direct result of the facility's operations.

Targets: 'No-net Loss' of avifaunal Species of Conservation Concern in connection with the facility's operations.

Measures:

- Implement the avifauna mitigation measures as stipulated in this EMPr as a key component of the No-Net Loss of avifaunal Species of Conservation Concern approach.
- Should any fatalities of avifaunal Species of Conservation Concern occur within the facility boundaries then the Avifaunal Specialist shall investigate the likely cause of such fatalities and evaluate whether the avifauna mitigation measures stipulated in this EMPr should be adjusted (with input from the Developer) or if some other mechanism is feasible eg an Offset Programme (designed by an Avifaunal Specialist).

4.3.11 Avifaunal Management

Objectives: To aid in the conservation of avifauna and ensure no net loss of Species of Conservation Concern (Black Harrier and Verreaux's Eagle).

Targets: No net loss of Species of Conservation Concern (Black Harrier and Verreaux's Eagle).

Measures:

- A Three-tiered mitigation approach will be implemented on site comprising blade painting, Observer-Led Shut Down On Demand (OLSDOD) and Automated Shut Down On Demand (ASDOD) during daylight hours, seven days a week, including public holidays from the moment blades are turning.
- Results comparing the effectiveness of OLSDOD and ASDOD will be assessed annually and systematically adjusted by the qualified and appropriately experienced Avifaunal Specialist appointed to the Project and made available to BLSA, ORCT and EWT prior to adjustments, if any, being made. The Client reserves the right to reduce tiers of mitigations as determined and advised by an Avifaunal Specialist, in consultation with BLSA and ORCT.
- The Developers will install and implement automated shutdown on demand (ASDOD) technologies, in addition to other mitigation measures identified, to be operational from the date each such turbine firsts starts operation. The Developers will determine the most suitable ASDOD technology for the species of concern on the site in consultation with qualified service providers, including an Avifaunal Specialist. The turbines on which ASDOD technology will be installed are identified in this section of the EMPr.
- The Developers will consult with BLSA and ORCT regarding the proposed ASDOD technology that will be implemented on the project turbines.
- All contractors are to adhere to the environmental management programme and should apply good environmental practice during all operations;
- A livestock carcass management plan to be implemented in collaboration with other operational WEFs (where possible) to reduce the likelihood of attracting vultures
- Livestock carcasses must be removed or covered within 8 hours of being located.
- Surveys for breeding avifaunal Species of Conservation Concern (i.e. Verreaux's Eagle and Black Harrier) during the correct breeding season must be undertaken by

appropriately trained/experienced people. This includes monitoring of the known VE nest sites in close proximity to the WEF.

- Operational phase bird monitoring and reporting in line with the latest available guidelines, must be implemented for the lifespan of the facility due to the risk of significant impacts.

- Direct mortality of avifaunal Species of Conservation Concern:
  - Fatalities of avifaunal Species of Conservation Concern are to be appropriately recorded and reported by the ESCO to the Avifaunal Specialist, the Developers and/or the Client as soon as reasonably practicable after first being detected or observed on-site during operational monitoring whereby appropriate and/or feasible measures will be taken, in consultation with an Avifaunal Specialist, if applicable. These reports must be made available to relevant stakeholders on quarterly basis (within 15 days of the completion of monitoring).
  - Any Black Harrier fatalities are to be reported to the ORCT within 24 hours.

- Monitoring:
  - Prior to operations, an OLSDOD monitoring programme is to be designed and established for the project and is required to be included in the avifaunal monitoring programme established for the project. The OLSDOD programme is to be developed by an Avifaunal Specialist, in collaboration with the Applicant. The purpose of the OLSDOD is to ensure that the ASDOD is working efficiently and to assist in the mitigation of risk and impact to the Avifauna on site.
  - As a **first-tier of mitigation**, all 39 WTGs will be manufactured with one painted (or patterned) blade to increase the visibility for birds.
  - The Developers will consult with the ORCT and BLSA (including with reference to any guidance from the South Africa Wind Energy Association) regarding the blade painting required terms of the EA that is in accordance with the best available Science and the South Africa Civil Aviation Authority (CAA) requirements.
    - The Developer will determine the appropriate blade patterning based on South Africa Civil Aviation Authority's (SACAA) requirements. The best applicable patterning is it to be presented and discussed with BLSA, ORCT and the South African Wind Energy Association.
  - Standard aviation stripes will not be implemented on the Project turbines as a means of satisfying the blade painting specifications required from an avifaunal mitigation perspective.
  - ASDOD technology will be installed on Turbine 7, and to operate such technology on a year-round basis, for the management of impacts to the Verreaux's Eagles on site.
  - WTGs 8, 9, 10 and 11, within 5.2 km of the Verreaux's Eagle nest (including rotor swept area), are to be fitted with ASDOD technology as a means of **second-tier mitigation,** and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable the approaching bird to travel through the wind farm safely.
  - ASDOD will be implemented on WTGs 14, 15, 16, 18, 19, 21, 22, 24 and 25 for the mitigation of impacts to the Black Harriers on site. The technology will be

implemented as a means of second-tier mitigation and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable the approaching bird to travel through the wind farm safely.

- OLSDOD will be implemented during daylight hours for at least the first 12 months of operation on WTG 14, 15, 16, 18, 21, 22, 24 and 25, including on weekends and public holidays.
- OLSDOD will be conducted for daylight hours, seven days a week (including weekends and public holidays), during peak Black Harrier activity (summer months, or as recommended by the Avifaunal Specialist) on WTG 1, 2, 3, 4, 5, 6, 12, 13, 17, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39 for Black Harrier and White Stork collision mitigation management.
- The Developers will notify BLSA and EWT should any collisions with a Black Harrier and Verreaux's Eagle occur, and if the monitoring data generated during the first 12-month period indicates that the ASDOD systems proves unsuitable for smaller avifaunal Species of Conservation Concern (Black Harriers), the possibility of implementing additional management or mitigation measures shall be assessed and investigated by the Developers together with an Avifaunal Specialist. Based on the monitoring data, the possibility of implementing an additional tier of mitigation (including the possibility of ASDOD on additional turbines or a suitable habitat and conservation mechanism) will be assessed by the Developers at the relevant time, if required, in response to the aforesaid monitoring data.
- The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.
- Should it become apparent that avifaunal Species of Conservation Concern (e.g. Black Harrier and Martial Eagle) are utilising the site for breeding at any time during the operational lifespan of the development, WTGs within at least 2 km of nest positions will be required to have an additional tier of mitigation. The appointed Avifaunal Specialist is to be notified to determine the appropriate additional mitigation measures, this will include i) additional observer- led shut-down-on-demand if it is not already in place, or ii) temporary curtailment during daylight hours during the breeding period or other high-risk periods, as per local specialist studies.
- If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined) the Avifaunal Specialist is to be appointed for further assessment of the situation and instruction on how to proceed, and BLSA, HWI and ORCT are to be notified within 24 hours.
- The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.
- Develop and implement an avifaunal carcass search and activity monitoring programme for Black Harrier and Verreaux's Eagle to be conducted for the lifespan of the facility in-line with the latest applicable guidelines (recognising that the intensity of monitoring required could be adapted (increasing or decreasing in intensity) in future

based on the recommendations of an Avifaunal Specialist (e.g.. for example by adjusting monitoring frequency and spacing of transects) having due regard to the efficacy and cost implications of the monitoring);

- Reviews of operational phase monitoring data (activity and carcass) and results to be conducted and reported on by the Avifaunal Specialist for the Project who will then make recommendations regarding the intensity and duration of the monitoring programme. Monitoring report(s) can be made available to stakeholders upon request provided that the reports shall be made available to BLSA, HWI, EWT and/or ORCT.
- The frequency of the review of operational phase monitoring data is to be determined by the Avifaunal Specialist, and will be conducted in accordance with the applicable guidelines and regulations at the time;
- The above reviews should strive to identify sensitive locations including WTGs and areas of increased collisions that may require additional mitigation;
- Funding should be made available to contribute to further ongoing research on the Potberg Cape Vulture Colony and Black Harrier by recognised institutions/ organisations through consultation with those institutions/organisations already involved in these activities.
- BirdFlight Diverters to be checked at least once a year and if necessary replaced when required.

4.3.12 Bat Management

Objectives: To aid in the conservation of bats

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of bats.

Measures:

- Creation of temporary bat roost infrastructure
    - Bats should be prevented from entering any possible artificial roost structures (e.g. roofs of buildings, road culverts and wind turbines) by ensuring that they are sealed in such a way as to prevent bats from entering.
    - If bats colonise Wind Farm infrastructure, a suitably qualified bat specialist should be consulted before any work is undertaken on that infrastructure or attempting to remove bats. Ongoing maintenance and inspections of buildings and road culverts must be carried out to ensure access by bats is prevented and for the safe handling of actively roosting bats.
    - Bat Mortality during commuting and/or foragingThe upward spread of light near to and above the horizontal plane should be restricted and directed to minimise light trespass and sky glow.
    - Increasing the spacing between lights, and the height of light units can reduce the intensity and volume of the light to minimise the area illuminated and give bats an opportunity to fly in relatively dark areas between and over lights.
    - Each development must avoid construction and turbine siting in bat no-go areas of the sensitivity maps determined for each site to ensure effective mitigation of cumulative impacts.
    - Apply blade feathering to prevent unnecessary free-wheeling of blades below

generation cut-in speed at operation commencement.

- Operational acoustic monitoring and carcass searches for bats must be performed, based on best practice, to monitor mortality and bat activity levels. Operational monitoring must be done for the first two years initially according to the guidelines. Depending on these findings, additional monitoring may be needed but must be determined by an appropriate bat specialist using the operational data. Thereafter, a year of impact monitoring is required in the fifth year of operation and every five years after that. Acoustic monitoring should include monitoring at height (from more than one location i.e. such as on turbines) and at ground level.
- Apply curtailment based on a curtailment plan formulated by an appropriate bat specialist using weather and bat activity data from the site if mortality occurs beyond threshold levels as determined based on applicable guidance (MacEwan et al. 2018). The threshold calculations must be done at a minimum of once a quarter (i.e. not only after the first year of operational monitoring) so that mitigation can be applied as quickly as possible should thresholds be reached.

- Mortality during migration
  - Designing the turbine layout of the project to avoid areas that are more frequently used by bats may reduce the likelihood of mortality and should be the primary mitigation measure. These areas include key microhabitats such as water features, trees and buildings. The turbine layout must adhere to the bat sensitivity buffer zones around these features (Figure 2). Turbines must be sited outside of buffer areas such that blade tips do not encroach into buffer zones. Micro-siting of turbines 3, 6, 11, 25, 27 ,52 and 41 must take place.
  - Apply blade feathering to prevent unnecessary free-wheeling of blades below generation cut-in speed at operation commencement.
  - Operational acoustic monitoring and carcass searches for bats must be performed, based on best practice, to monitor mortality and bat activity levels. Operational monitoring must be done for the first two years initially according to the guidelines. Depending on these findings, additional monitoring may be needed but must be determined by an appropriate bat specialist using the operational data. Thereafter, a year of impact monitoring is required in the fifth year of operation and every five years after that. Acoustic monitoring should include monitoring at height (from more than one location i.e. such as on turbines) and at ground level.
  - Apply curtailment based on a curtailment plan formulated by an appropriate bat specialist using weather and bat activity data from the site <u>if mortality</u> occurs beyond threshold levels as determined based on applicable guidance (MacEwan et al. 2018). The threshold calculations must be done at a minimum of once a quarter (i.e. not only after the first year of operational monitoring) so that mitigation can be applied as quickly as possible should thresholds be reached.
  - The operation of lights at substations should be limited to avoid attracting bats to the area. Where lights need to be used such as at the substation and switching station and elsewhere, these should have low attractiveness for insects such as low pressure sodium and warm white LED lights (Rydell 1992; Stone 2012). High pressure sodiumand white mercury lighting is attractive to insects (Blake et al. 1994; Rydell 1992; Svensson & Rydell 1998) and should not be used as far as possible.

4.3.13 Visual Management:

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to mitigate visual impacts to an acceptable level.

Targets: To ensure compliance with the local authority by laws, Visual Specialist recommendations and any other statutory requirements relating to Visual Management.

Measures:

- ***Ensure that visual mitigation measures are monitored by management on an on-going basis, including the maintenance of rehabilitated areas, as well as control of any signage, lighting and wastes at the proposed wind farm, with interim inspections by the environmental officer based on site.***
- The O&M building and related buildings should be placed with sufficient distance from the R319 to allow for screen planting.
- The design of the O&M building and related buildings should have a rural aesthetic compatible with farm buildings in the area.
- Consideration could be given to arranging the buildings around a farm-type werf.
- Use of available technology to minimise the visual effect of navigation lights, conforming with CAA requirements.
- Use of reflectors on general area and security lighting to conceal light sources.
- The number of internal powerline routes should be rationalised as far as possible to minimise visual intrusion in the landscape.
- The number of crossings of the R319 by powerlines must be reduced as far as possible, and crossings combined where practicable.
- The two ridgelines in the north must be avoided by Overhead powerlines because of visual impact on the skyline and users of the N2 Route.
- The alignment of internal access roads should be aligned to avoid steep slopes as far as possible.
- Existing roads should be used as far as possible, and road widths kept as narrow as practicable.

4.3.14 Agricultural Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage agriculture impacts on site

Targets: To ensure compliance with the local authority by laws, Visual Specialist recommendations and any other statutory requirements relating to agricultural management

Measures: *The Operation phase Impact Mitigation measures are as per the Construction phase, copied below for ease of reference:*

- ***Ensure that as much as possible of the planned infrastructure be confined to transformed land, or non-arable areas.***
- ***Ensure that use is made of existing roads and servitudes etc. where at all possible.***
- ***It is the responsibility of the owner of the renewable energy project to ensure that suitable soil conservation works be established on the site to limit or restrict the loss of soil.***
- ***No renewable energy structure, supporting infrastructure or access routes shall in any manner divert any run-off water from a water course to any other water course or obstruct the natural flow pattern of runoff water, except with the permission from DAFF.***

- ***All access routes, existing or newly constructed and utilised during the construction and / or maintenance of the renewable energy structures must be restored to its original state after completion of the establishment of the structures. Every care must be taken not to damage or degrade the status of the natural resources base of the farm during the construction phase of the mentioned or to impact negatively on the farming or production practices on the farm.All service routes that will be used to gain access to the renewable energy structures for maintenance purposes have to be covered in gravel, tarred or compressed in order to limit the possibility of degradation and erosion.***
- ***The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.***
- Mitigation measures are all inherent in the project design. A system of storm water management, which will prevent erosion, will be an inherent part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control, where they occur on steeper slopes, must be kept in tact.

4.3.15 Social Impact Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage social and socio-economic impacts on site

Targets: To ensure compliance with the local authority by laws, Social Specialist recommendations and any other statutory requirements relating to social and socio-economic management

Measures:

- Development of renewable energy infrastructure
    - Maximise the number of employment opportunities for local community members.
    - Implement training and skills development programs for members from the local community.
    - Maximise opportunities for local content and procurement.
- Creation of employment and business opportunities and support for local economic development
    - The enhancement measures listed in the construction phase to enhance local employment and business opportunities, also apply to the operational phase. In addition, the proponent should investigate providing training and skills development to enable locally based service providers to provide the required services for the operational phase.
- ***Generate Income for affected landowners***
    - ***Implement agreements with affected landowners where possible.***
    - ***The loss of high-quality agricultural land should be avoided and or minimised by careful planning in the final layout of the proposed WEF facilities. The recommendations of the agricultural / soil assessment should be implemented.***
- Benefits associated with the establishment of a Community Trust
    - The proponents should liaise with the SM and ODM to identify projects that can be supported by SED contributions, ***where reasonably practicable***.
    - Clear criteria for identifying and funding community projects and initiatives in the area should be identified, ***where reasonably practicable.*** The criteria should be aimed at maximising the benefits for the community as a whole and not individuals within the

community.

- ~~Strict financial management controls, including annual audits, should be instituted to manage the SED contributions.~~

- Generate income for affected landowners
  - Maintain and continue to implement the various agreements with affected landowners ***where required***.
  - Maintain complaints register.
  - ~~Keep an engaging and open communication with Landowners through~~
- Impact on sense of place and rural character of the landscape
  - Maintain technology required to minimise visual impacts
  - Maintain a complaints register
- Impact on property Values
  - The loss of high-quality agricultural land should be avoided and or minimised by careful planning in the final layout of the proposed WEF facilities.
  - The recommendations of the agricultural / soil assessment should be implemented
- Impact on tourism
  - As recommended in the VIA:
    - Use of available technology to minimise the visual effect of navigation lights, conforming with CAA requirements.
    - Use of reflectors on general area and security lighting to conceal light sources.

4.3.16 Noise Management

Objectives: To control and reduce noise impact during the WEF operation.

Targets: To ensure compliance with the statutory requirements relating to management of noise impacts.

Measures: *Operation Mitigation measures are as per the Design* ***and Construction*** *phase, copied below for ease of reference:*

- ***Evaluate the noise impact should the layout be revised where any wind turbines are located closer than 1,000 m from a confirmed NSR, or the number of WTG within 2,000m are increased;***
- ***Evaluate the noise impact should the applicant make use of a wind turbine with a maximum SPL exceeding 109.2 dBA re 1 pW;***
- ***Eelect appropriate mitigation measures to ensure that the noise levels are less than 45 dBA at all NSR during the operational phase; and***
- ***Consider a quieter WTG with a maximum PWL less than 110.0 dBA (re 1 pW) at locations closer than 2,500 m from verified NSR (this could include the use of a quieter WTG, or the use of blade fittings such as serrated trailing edges to reduce the noise emission levels). Should the project proceed, the project should be re-evaluated using the specific characteristics of the selected WTG to ensure the noise levels are less than 45 dBA at verified NSR. This will allow the optimization of the mitigation measure and minimize potential costs; or***
- ***Reached agreement with the land owner(s) that certain dwellings will no further be used for permanent residential purposes if the project proceed; or***
- ***Select a WTG that allow certain operating modes where that decrease noise emission levels. The applicant can develop and implement a noise abatement program that commit the WEF to operating certain WTG in a quieter mode during certain conditions (certain wind directions***

and wind speeds).

- ***Re-evaluate the noise impact:***
    - ***Should the layout be revised as part of an amendment process post Environmental Authorisation, where:***
        - ***any WTG, located within 2,500 m from any NSR is moved closer;***
        - ***the number of WTG within 2,500 m from any NSR is increased; and***
    - ***Should the applicant make use of a wind turbine with a maximum SPL exceeding 110.5 dBA re 1 pW.***

- ~~Operation of WTG at night~~
    - ~~re-evaluate the noise impact once the final make and model of WTG was selected to ensure that the total noise levels will be less than 45 dBA during the operational phase at all structures used for residential purposes;~~
    - ~~Select a quieter WTG with a maximum sound power emission level less than 110.0 dBA (re 1 pW) at locations closer than 2,500m from verified NSR (this could include the use of a quieter WTG , or the use of blade fittings such as serrated trailing edges to reduce the noise emission levels). Should the project proceed, the project should be re-evaluated using the specific characteristics of the selected WTG to ensure the noise levels are less than 45 dBA at verified NSR; **OR**~~
    - ~~The agreement between the land owner and the applicant that the dwellings will no further be used for residential purposes **OR**~~
    - ~~The applicant can select a WTG that allow certain operating modes where that decrease noise emission levels. The applicant can develop and implement a noise abatement program that commit the WEF to operating certain WTG in a quieter mode during certain conditions (certain wind directions and wind speeds).~~
- ~~Select appropriate mitigation measures to ensure that the noise levels are less than 45 dBA at all NSR during the operational phase; and~~
- ~~Should implement a noise monitoring program at all receptors living within the 42 dBA noise contour.~~
- Investigate any reasonable and valid noise complaint if registered by a receptor staying within 2,000m from the location where construction activities are taking place, or where an operational WTG are located. A complaint register, keeping a full record of the complaint, must be kept by the Project Developer;

4.3.17 Traffic Management

<u>Objectives:</u> To ensure that traffic impacts as a result of the construction related activities are minimized.

<u>Targets:</u> To ensure compliance with the local authority by laws and any other statutory requirements relating to construction traffic. To ensure that the impacts on current traffic flows in the vicinity of the site are minimised and that complaints relating to traffic associated with the site's activities are minimised.

<u>Measures</u>

- ***Implement and adhere to the Traffic Management Plan in Annexure J.***

4.3.18 Emergency Management

Objectives: To ensure that an appropriate and efficient response is triggered in the event of an emergency situation arising. This mmust include incidents such as medical, fire, security and environmental disaster scenarios on the site.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to emergency response.

Measures:

The Proponent or Contractor acting on his behalf shall compile and maintain environmental emergency procedures during the operational phase of the project to ensure that there will be an appropriate response to unexpected or accidental environment-related incidents, e.g. during routine maintenance and servicing.

- An environmental emergency procedure plan must include:
    - A list of key personnel, including responsibilities, accountability and liability.
    - Details of emergency services applicable to the various areas along the route that the turbine components will need to be transported as well as for the site itself.
    - Internal and external communication plans, including prescribed reporting procedures where required by legislation.
    - Actions to be taken in the event of different types of emergencies.
    - Incident management plans for the site. Incident recording, progress reporting and remediation measures required to be implemented.
    - Information on hazardous materials, including the potential impact associated with each and measures to be taken in the event of accidental release.
    - Firefighting strategy.
    - Training plans and testing exercises and schedules for effectiveness.

4.3.19 Fire Management

Objectives: To ensure that fire as a result of the operational activities are controlled and managed appropriately.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to fire management.

Measures

- The Applicant must maintain the 30-meter fire break.
- The 30-meter fire break must be kept clear of any vegetation throughout the lifecycle of the WEF.
- Weekly checks of the 30-meter firebreak must be undertaken during the operational phase of the WEF, thus ensuring that this fire break is maintained correctly.
- During the dry season the fire break must be compacted and wetted when it is in use.
- The 30-m fire break must be brush cut.
- The 30-m fire break should have significant reduced fuel loads and the height of the vegetation must be kept as low as possible.
- Waste material from the fire break preparation must be disposed off into the veld approximately 5m above the fire break or removed completely from site – by cutting, chipping

stacking or burning with the required permission.

4.3.20 A line fire breaks to avoid no populations of rear or endangered species, sensitive habitats such as wetlands and highly erodible areas.

The Fire Management Plan must be adhered to and must be implemented on-site accordingly. Please refer to Annexure L of the EMPr

5. DECOMMISSIONING IMPACTS

Please note, that the Decommissioning Impacts are typically considered equivalent to those of the construction impacts because decommissioning will entail the same type of activities. Therefore, these have not been reproduced in this Section.

In any respect, decommissioning activities would need to be applied for in a separate Environmental Permitting Process as per the requirements of the Competent Authority.

6. IMPLEMENTATION OF THE EMPR

6.1 ENTITY RESPONSIBLE FOR DEVELOPMENT OF THE PROJECT

Table 6.1: This table depicts the Project Administrative Details.

PROJECT ADMINISTRATION DETAILS	
DEVELOPMENT ENTITY	
Applicant Name (The proponent)	FE Overberg (RF) (Pty) Ltd
Responsible Person	Matteo Giulio Luigi Maria Brambilla
Address	14th Floor, Pier Place Building Heerengracht Street Foreshore CAPE TOWN 8001
Contact Details	Tel: +27(0)72 212 1531 Email: m.logan@redrocket.energy

6.2 ROLES & RESPONSIBILITIES

Formal responsibilities are necessary to ensure that key environmental management measures/procedures are executed. The Holder of the EA, will be responsible for the overall control of the facility during the pre-construction, construction, operation, decommissioning and rehabilitation phases of the project. The responsibilities will include the following:

1. Appointing an independent environmental control officer (ECO) for the duration of the Construction phase and to notify the DFFE of the ECOs qualifications and contact details;
2. Appointing and Environmental Site Compliance Officer (ESCO) for the duration of the construction phase of the project.
3. Understanding the EIA Report, the requirement of the conditions of the Environmental Authorisation (EA) and the EMPr;
4. Applying for an amendment of the EA from the DFFE in the event that the approved scope changes in line with the prevailing legislation;
5. Overall implementation of the EMPr;
6. Ensuring compliance, by all parties, and the imposition of penalties for non-compliance;
7. Implementing corrective and preventive actions, where required;
8. Preventing pollution and actions that will harm or may cause harm to the environment;
9. Ensuring the activity does not commence prior to issuance of the EA;
10. Notifying the DFFE at least 14 days prior to construction, that construction activity will commence;
11. Notifying the DFFE 14 days prior to commencement of the operational phase. Throughout the lifespan of this project, several individuals and entities will fulfil various roles and responsibilities to ensure the effective implementation of this EMPr. The key roles and responsibilities are defined in Table 6.2 and the Organogram is presented in Figure 6.1**.**

While the term ECO/ESCO is referenced in Specialist Reports, the ESCO is an independent function, reporting to the DFFE. The term used in this EMPr for the Permit Holder's onsite compliance management function is Environmental Site Compliance Officer (ESCO).

Table 6.2 Roles and Responsibilities regarding the implementation of the EMPr

RESPONSIBLE PERSON	RESPONSIBILITIES
Environmental Authority – Department of Forestry, Fisheries and the Environment (DFFE).	Role: The Department of Forestry, Fisheries and the Environment (DFFE) is the Competent Authority responsible for compliance with the relevant environmental legislation, namely the National Environmental Management Act and other Specific Environmental Management Acts (SEMA's) Responsibilities: • Ensure overall compliance with the Environmental Authorisation (EA) & EMPr. • Review this document and any revisions thereof. • Undertake site audits at their discretion. • Review ECO Reports. • Review Audit Reports • Review Incident Reports. • Enforce legal mechanisms for contraventions of this EMPr and EA.
The Proponent - Holder of the EA – Soyuz 4 (Pty) Ltd	Role: The Proponent is ultimately responsible and legally liable for ensuring compliance with all statutory requirements relating to the facility. Responsibilities: • Be fully conversant with the conditions of EA, EMPr and all relevant and associated environmental permitting documentation for the Project, and ensure compliance thereof; ; • Take appropriate action should the Holder of the EA, recognise that the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; • Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and • Ensure that activities onsite comply with all relevant environmental legislation • Ensuring compliance with the conditions set out in the Environmental Authorisation issued in terms of the NEMA, as well as those prescribed by other relevant legislation and guidelines. • Compliance with the requirements set out in this EMPr.

RESPONSIBLE PERSON	RESPONSIBILITIES
	• Ensuring all other permits, permissions and licences from all other statutory departments are in place.
Project Manager (SPV and Engineering, Procurement & Construction Contractor (EPC))	Role: • The Employer's representative role is likely to be fulfilled by the project engineer and assumes overall delegated responsibility for compliance with this EMPr, the EA, the conditions of the Planning Approval, Conditions of the WULA and all applicable legislation for the duration of the construction phase. Responsibilities: • Issue site instructions to the contractor based on the advice of the ECO/ESCO. • Ensure that all detailed design incorporates the requirements of the EMPr and EA. • Ensure that the EMPr is included in all tender documents issued to prospective contractors and sub-contractors. • Ensure the EMPr is included in final contract documents. • Ensure that the Tenderers/Contractors adequately provide for compliance with the EMPr in their submissions. • Ensure that the EMPr is fully implemented by the relevant persons. • Ensure the contractor provides the necessary method statements. • Be accountable, to the competent authority for any contravention or non-compliance by the Contractor. • Assist the contractor with input from the ECO/ESCO in finding environmentally responsible solutions to problems. • Undertake regular site audits, site visits and inspections to ensure that the requirements of the EMPr are implemented • Give instructions on any procedures and corrective actions on advice from the ECO/ESCO. • Report environmental incidents or non-compliance with the EA or EMPr to the environmental authority. • Issue spot fines, penalties or 'stop-work' orders for contravention of the EMPr and give instructions regarding corrective action.
Site Manager (SPV and EPC Contractor)	• Be fully conversant with the conditions of EA, EMPr and all relevant and associated environmental permitting documentation for the Project, and ensure compliance thereof; Approve method statements (co-approval with ESCO); • Provide support to the EO and ESCO; • Be fully conversant with all relevant environmental legislation and ensure compliance thereof;

RESPONSIBLE PERSON	RESPONSIBILITIES
	• Be responsible for the implementation of the EMPr and conditions of the EA; • Ensure that audits are conducted to monitor compliance to the EMPr and conditions of the EA; • Liaise with the Project Manager or his delegate, the ESCO and others on matters concerning the environment; • Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution and unnecessary degradation onsite; and • Confine construction activities to demarcated areas.
Environmental Officer (EPC EO)	• The EO must be appointed by the Contractor and is responsible for managing the day-to-day onsite implementation of the EMPr, and for the compilation of weekly environmental monitoring reports. In addition, the EO must act as liaison and advisor on all environmental and related issues, seek advice from the ESCO and ESCO when necessary, and ensure that any complaints received from I&APs are duly processed and addressed and that conflicts are resolved in an acceptable manner and timely manner. The EO shall be a full-time dedicated member of the Contractor's team and must be approved by Soyuz 4 (Pty) Ltd. • The following qualifications, qualities and experience are recommended for the individual appointed as the EO: o A relevant environmental diploma or degree in natural sciences, as well as experience in construction site monitoring, excluding health and safety; o A level-headed and firm person with above-average communication and negotiating skills. The ability to handle and address conflict management situations will be an advantage; and o Relevant experience in environmental site management and EMPr compliance monitoring. • The EO's responsibilities include: o Monitoring, on a daily basis, environmental specifications on site and compliance with the conditions of the EA, environmental legislation and EMPr; o Keeping a register of compliance / non-compliance with the environmental specifications; o Identifying and assessing previously unforeseen, actual or potential impacts on the environment; o Ensuring that a brief weekly environmental monitoring report is submitted to the ESCO; o Conducting site inspections during the defect's liability period, and bringing any environmental concerns to the attention of the ESCO and Contractor; o Advising the Contractor on the rectification of any pollution, contamination or damage to the construction site, rights of way and adjacent land;

RESPONSIBLE PERSON	RESPONSIBILITIES
	○ Attending site meetings (scheduled and ad hoc); ○ Presenting the environmental awareness training course to all staff, Contractors and Sub contractors, and monitoring the environmental awareness training for all new personnel on-site, as undertaken by the Contractor; ○ Ensuring that a copy of the EA and the latest version of the EMPr are available on site at all times; ○ Ensuring that the Contractor is made aware of all applicable changes to the EMPr; ○ Assisting the Contractor in drafting environmental method statements and/or the Environmental Policy where such knowledge/expertise is lacking; ○ Undertaking daily environmental monitoring to ensure the Contractor's activities do not impact upon the receiving environment. Such monitoring shall include dust, noise and water monitoring; and ○ Maintaining the following on site: ▪ A weekly site diary. ▪ A non-conformance register (NCR). ▪ An I&AP communications register, and ▪ A register of audits. • The EO will remain Employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is handed over to the Holder of the EA.
Environmental Site Compliance Officer (SPV/Independent ESCO)	Role: A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full-time basis. To assist the ECO with the day to day implementation and monitoring of the environmental management actions that are taking place on site. • Responsibilities of the ESCO include: ○ Be fully conversant with the conditions of EA, EMPr and all relevant and associated environmental permitting documentation for the Project; ○ Be fully conversant with all relevant environmental legislation and ensure compliance thereof; ○ Approve method statements (co-approval with Site Manager); ○ Remain employed until the completion of the construction activities; and ○ Report to the Project Manager, including all findings identified onsite. ○ Bi-weekly reporting to the in-office Project Manager, including all activities commencing/commenced on-site and findings identified onsite.

RESPONSIBLE PERSON	RESPONSIBILITIES
	• In addition, the ESCO will: o Undertake weekly and daily inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; o Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; o Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and – Ensure that activities onsite comply with all relevant environmental legislation. – Day to day environmental control of activities on site on site during the construction phase. – Monitoring of construction management activities during the construction phase. o Weekly reporting to the ECO.
Environmental Control Officer (Independent ECO)	Role: • The ECO fulfils an advisory role to monitor, guide and report compliance with the EMPr. Responsibilities: • A suitably qualified external ECO must be appointed by the Holder of the EA to audit the project compliance in terms of the EMPr and conditions of the EA on a monthly basis, during the construction phase, in line with Condition 21 of the EA. • The costs of the ECO shall be borne by the Holder of the EA (proof of appointment must be maintained onsite). • Revise, update and amend the EMPr if necessary and submit the amendments to the competent authority for consideration. • Ensure all relevant persons have a copy of the EMPr and any amendments thereof. • Advise the employer's representative on any additional environmental authorisations and permits that may be required. • Facilitate the Environmental Education / Induction Training with the contract staff. • Review and comment on Method Statements relevant to environmental management and make recommendations to the employer's representative. • Report any non-compliance with the EMPr or EA to the employer's representative and competent authority if necessary. • Undertake regular site inspections in compliance with this EMPr.

RESPONSIBLE PERSON	RESPONSIBILITIES
	• Monitor, audit and verify that all works comply with the EA and the EMPr. • Keep record of EMPr implementation, monitoring and audits, including a full photographic record of works. • Comply and submit regular Environmental Control Reports to the competent authority, as well as employer's representative &/ holder of the authorisation. • Report any environmental incidents or environmental impacts immediately to the employer's representative and the competent authority if necessary. • Report any environmental incidents or environmental impacts immediately to the employer's representative and the competent authority if necessary. • Assist the contractor and employer's representative planning for and implementing environmentally sensitive problem solving. • Advise the employer's representative on suggested "stop work orders.
Contractors, Staff and Service Providers	• Complying with the Holder of the EA's environmental management specifications under the auspice of the Holder of the EAs Environmental and Site Team; • Be fully conversant with the conditions of EA, EMPr and all relevant and associated environmental permitting documentation for the Project; ; and • Adhering to any environmental instructions issued by the Site Manager/Project Manager on the advice of the ESCO.

RESPONSIBLE PERSON	RESPONSIBILITIES
	● Ensure that activities onsite comply with all relevant environmental legislation ● Ensuring compliance with the conditions set out in the Environmental Authorisation issued in terms of the NEMA, as well as those prescribed by other relevant legislation and guidelines. ● Compliance with the requirements set out in this EMPr. ● Ensuring all other permits, permissions and licences from all other statutory departments are in place.
Project Manager	Role: ● The Employer's representative role is likely to be fulfilled by the project engineer and assumes overall delegated responsibility for compliance with this EMPr, the EA, the conditions of the Planning Approval, Conditions of the WULA and all applicable legislation for the duration of the construction phase. Responsibilities: ● Issue site instructions to the contractor based on the advice of the ECO. ● Ensure that all detailed design incorporates the requirements of the EMPr and EA. ● Ensure that the EMPr is included in all tender documents issued to prospective contractors and sub-contractors. ● Ensure the EMPr is included in final contract documents. ● Ensure that the Tenderers/Contractors adequately provide for compliance with the EMPr in their submissions. ● Ensure that the EMPr is fully implemented by the relevant persons. ● Ensure the contractor provides the necessary method statements. ● Be accountable, to the competent authority for any contravention or non-compliance by the Contractor. ● Assist the contractor with input from the ECO in finding environmentally responsible solutions to problems. ● Undertake regular site audits, site visits and inspections to ensure that the requirements of the EMPr are implemented ● Give instructions on any procedures and corrective actions on advice from the ECO. ● Report environmental incidents or non-compliance with the EA or EMPr to the environmental authority. ● Issue spot fines, penalties or 'stop-work' orders for contravention of the EMPr and give instructions regarding corrective action.

RESPONSIBLE PERSON	RESPONSIBILITIES
Site Manager	● Be fully conversant with the BAR, the conditions of EA and the EMPr; ● Approve method statements (co-approval with ESCO); ● Provide support to the EO and ESCO; ● Be fully conversant with all relevant environmental legislation and ensure compliance thereof; ● Be responsible for the implementation of the EMPr and conditions of the EA; ● Ensure that audits are conducted to monitor compliance to the EMPr and conditions of the EA; ● Liaise with the Project Manager or his delegate, the ESCO and others on matters concerning the environment; ● Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution and unnecessary degradation onsite; and ● Confine construction activities to demarcated areas.
Environmental Officer (EO)	● The EO must be appointed by the Contractor and is responsible for managing the day-to-day onsite implementation of the EMPr, and for the compilation of weekly environmental monitoring reports. In addition, the EO must act as liaison and advisor on all environmental and related issues, seek advice from the ESCO and ESCO when necessary, and ensure that any complaints received from I&APs are duly processed and addressed and that conflicts are resolved in an acceptable manner and timely manner. The EO shall be a full-time dedicated member of the Contractor's team and must be approved by FE Overberg (RF) (Pty) Ltd . ● The following qualifications, qualities and experience are recommended for the individual appointed as the EO: o A relevant environmental diploma or degree in natural sciences, as well as experience in construction site monitoring, excluding health and safety; o A level-headed and firm person with above-average communication and negotiating skills. The ability to handle and address conflict management situations will be an advantage; and o Relevant experience in environmental site management and EMPr compliance monitoring. ● The EO's responsibilities include: o Monitoring, on a daily basis, environmental specifications on site and compliance with the conditions of the EA, environmental legislation and EMPr; o Keeping a register of compliance / non-compliance with the environmental specifications;

RESPONSIBLE PERSON	RESPONSIBILITIES
	○ Identifying and assessing previously unforeseen, actual or potential impacts on the environment; ○ Ensuring that a brief weekly environmental monitoring report is submitted to the ESCO; ○ Conducting site inspections during the defect's liability period, and bringing any environmental concerns to the attention of the ESCO and Contractor; ○ Advising the Contractor on the rectification of any pollution, contamination or damage to the construction site, rights of way and adjacent land; ○ Attending site meetings (scheduled and ad hoc); ○ Presenting the environmental awareness training course to all staff, Contractors and Sub contractors, and monitoring the environmental awareness training for all new personnel on-site, as undertaken by the Contractor; ○ Ensuring that a copy of the EA and the latest version of the EMPr are available on site at all times; ○ Ensuring that the Contractor is made aware of all applicable changes to the EMPr; ○ Assisting the Contractor in drafting environmental method statements and/or the Environmental Policy where such knowledge/expertise is lacking; ○ Undertaking daily environmental monitoring to ensure the Contractor's activities do not impact upon the receiving environment. Such monitoring shall include dust, noise and water monitoring; and ○ Maintaining the following on site: ▪ A weekly site diary. ▪ A non-conformance register (NCR). ▪ An I&AP communications register, and ▪ A register of audits. ● The EO will remain Employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is handed over to the Holder of the EA.
Environmental Site Compliance Officer (ESCO)	Role: To assist the ECO with the day to day implementation and monitoring of the environmental management actions that are taking place on site. Responsibilities: ● A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full time basis. ● Responsibilities of the ESCO include:

RESPONSIBLE PERSON	RESPONSIBILITIES
	○ Be fully conversant with the BAR, the conditions of EA and the EMPr; ○ Be fully conversant with all relevant environmental legislation and ensure compliance thereof; ○ Approve method statements (co-approval with Site Manager); ○ Remain employed until the completion of the construction activities; and ○ Report to the Project Manager, including all findings identified onsite. ● In addition, the ESCO will: ○ Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; ○ Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; ○ Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and ● Ensure that activities onsite comply with all relevant environmental legislation. ● Day to day environmental control of contractors on site during the construction phase. ● Monitoring of construction management activities during the construction phase. ○ Weekly reporting to the ECO.
Environmental Control Officer (ECO)	Role: ● The ECO fulfils an advisory role to monitor, guide and report compliance with the EMPr. Responsibilities: ● A suitably qualified external ECO must be appointed by the Holder of the EA to audit the project compliance in terms of the EMPr and conditions of the EA on a monthly basis, during the construction phase, in line with Condition 21 of the EA. ● The costs of the ECO shall be borne by the Holder of the EA (proof of appointment must be maintained onsite). ● Revise, update and amend the EMPr if necessary and submit the amendments to the competent authority for consideration. ● Ensure all relevant persons have a copy of the EMPr and any amendments thereof.

RESPONSIBLE PERSON	RESPONSIBILITIES
	● Advise the employer's representative on any additional environmental authorisations and permits that may be required. ● Facilitate the Environmental Education / Induction Training with the contract staff. ● Review and comment on Method Statements relevant to environmental management and make recommendations to the employer's representative. ● Report any non-compliance with the EMPr or EA to the employer's representative and competent authority if necessary. ● Undertake regular site inspections in compliance with this EMPr. ● Monitor, audit and verify that all works comply with the EA and the EMPr. ● Keep record of EMPr implementation, monitoring and audits, including a full photographic record of works. ● Comply and submit regular Environmental Control Reports to the competent authority, as well as employer's representative &/ holder of the authorisation. ● Report any environmental incidents or environmental impacts immediately to the employer's representative and the competent authority if necessary. ● Report any environmental incidents or environmental impacts immediately to the employer's representative and the competent authority if necessary. ● Assist the contractor and employer's representative planning for and implementing environmentally sensitive problem solving. ● Advise the employer's representative on suggested "stop work orders.
Contractors, Staff and Service Providers	● Complying with the Holder of the EA's environmental management specifications; ● Be conversant with all EMPr and conditions of the EA, and ensure compliance thereto; and ● Adhering to any environmental instructions issued by the Site Manager/Project Manager on the advice of the ESCO.

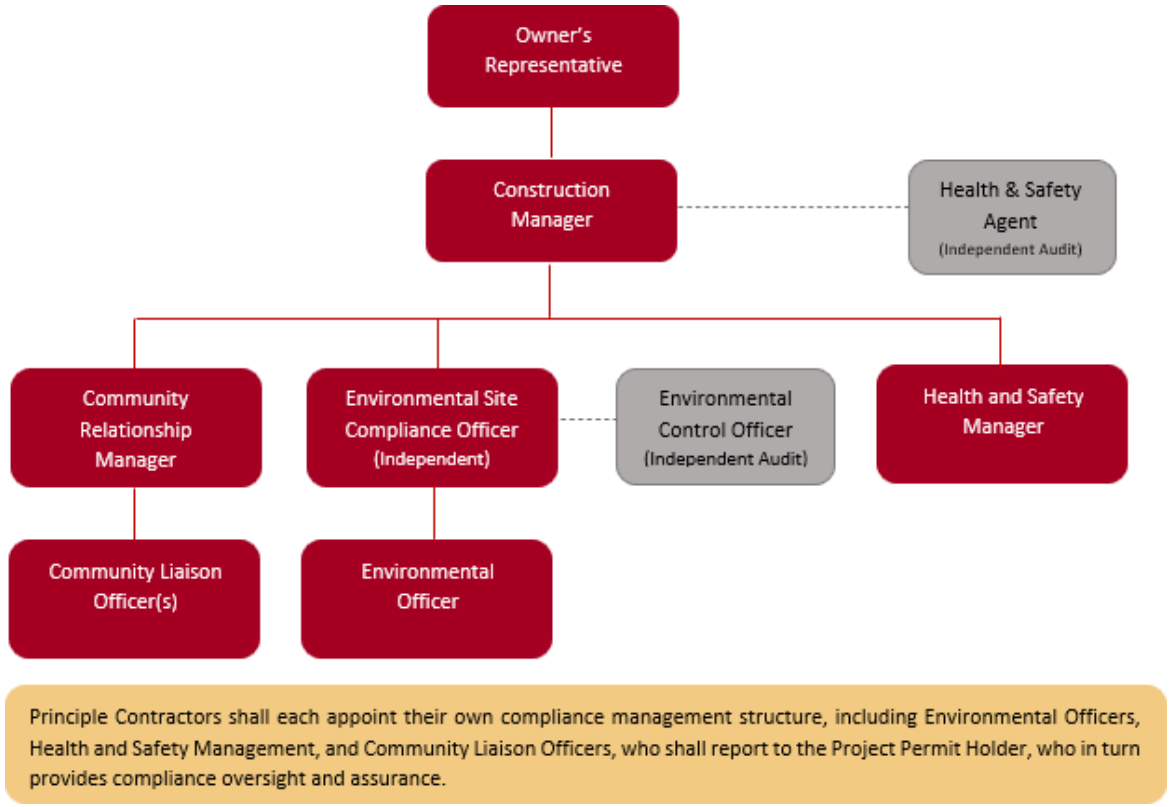


Figure 6.1. Holder of the EA Construction Phase management structure

6.3 AUDITING OF THE EA AND THE EMPR

Compliance with the Conditions of the EA and EMPr for the construction and post- construction monitoring phases must be monitored regularly by an independent environmental auditor. Compliance Reports must be submitted to the Competent Authority monthly (within 21 working days of the end of each month) for the duration of construction and quarterly (within 21 working days of the end of each quarter) for post construction operations.

An operational audit must be conducted in Year 1, 2, 5, 10, 15 and 20 calculated from the date that the facility first commences operations in accordance with Regulation 34 and Appendix 7 of the NEMA: EIA Regulations (2014, as amended). The purpose of the audit will be to determine the compliance of the WEF against the Conditions in the EA and the Mitigation Measures of this EMPr.

A compliance audit must be conducted annually from the date that the facility first commences operations in accordance with Regulation 34 and Appendix 7 of the NEMA: EIA Regulations (2014, as amended). The purpose of the audit will be to determine the compliance with the requirements of this EMPr relevant to avifaunal management.

In addition to an operational audit, an avifaunal audit will be conducted annually every year for the first 5 years of operation, after which the Avifaunal Specialist will determine whether or not to continue with the avifaunal audit.

The results of the audit must be recorded in an environmental audit report and any non-compliance must be formally recorded, along with the response-action required or undertaken. Each non-

compliance incident report must be issued to the relevant person(s), so that the appropriate corrective and preventative action is taken within an agreed upon timeframe.

Appendix 7 of Regulation 982 of the 2014 EIA Regulations contains the required contents of an Environmental Audit Report. The table below shows the legislated requirements of an audit reports, and all relevant environmental audits undertaken as part of this development (during construction and operation) should comply with these requirements.

Table 6.3 Content of an Audit Report

1) An Environmental audit report prepared in terms of these Regulations must contain:
(a) Details of – (i) The independent person who prepared the environmental audit report; and (ii) The expertise of independent person that compiled the environmental audit report.
(b) Details of – (i) The independent person who prepared the environmental audit report; and (ii) The expertise of independent person that compiled the environmental audit report.
(c) A declaration that the independent auditor is independent in a form as may be specified by the competent authority.
(d) An indication of the scope of, and the purpose for which, the environmental audit report was prepared.
(e) A description of the methodology adopted in preparing the environmental audit report.
(f) An indication of the ability of the EMPr, and where applicable the closure plan to – (i) Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis; (ii) Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and (iii) Ensure compliance with the provisions of environmental authorisation, EMPr, and where applicable, the closure plan.
(g) A description of any assumptions made, and any uncertainties or gaps in knowledge.
(h) A description of a consultation process that was undertaken during the course of carrying out the environmental audit report.
(i) A summary and copies of any comments that were received during any consultation process.
(j) Any other information requested by the competent authority.

6.4 FREQUENCY OF VISITS BY THE ECO/ESCO

12. The ESCO is required to be on site daily for the duration of the Project, unless the determined otherwise by the ECO, taking into consideration the performance and compliance of the

Contractor on site and with the EMPr respectively.

13. An independent ECO will work along-side the ESCO to conduct the required inspections of the construction activities and EMPr implementation throughout the construction phase. After each monthly inspection, the ECO will produce a monitoring report that will be submitted to the Developer / Applicant, the DFFE, and any other person(s) if required. Relevant sections of the minutes of customary (monthly) site meetings will be attached to the monitoring report.
14. The ECO/ESCO should conduct on going Basic Environmental Awareness Training sessions with the Contractor, his staff and sub-contractors prior to any work taking place. The Contractors are required to provide a facility and interpreter (if required).
15. The ECO is responsible in ensuring that daily / weekly (depending on the extent of construction activities, at any given time) monitoring of site activities take place by the ESCO to ensure adherence to the specifications contained in the EMPr
16. An initial meeting with the ECO/ESCO, local authority representative, Principal Agent and Contractor must be held to familiarise each of the parties with each other, the site, the EMPr and to confirm communication methods.
17. The frequency of subsequent meetings and ECO/ESCO visits must be agreed, depending on the performance of the Contractor. If required, the Principal Agent may introduce some form of penalty system if compliance with the EMPr proves problematic.
18. A brief summary of the findings and any recommendations made by the ECO/ESCO per visit must be emailed to all parties including the Principal Agent and Contractor. This report should also include photographs for additional information.

6.5 DOCUMENTED PROCEDURES

Method Statements (a template for these purposes is appended to this EMPr) will be required for activities that may result in significant impacts according to the ECO/ESCO.

These must address the following aspects:

- What – a brief description of the work to be undertaken
- How – a detailed description of the process of work, methods and materials
- Where – a description of the location of the work (if applicable)
- When – the sequencing of actions with commencement and completion date estimates

All Method Statements (MS) must be in place at least 5 working days prior to the relevant construction activities taking place and must be approved by the ECO/ESCO and Principal Agent prior to being implemented.

The following MS must as a minimum be made available to address the following construction related impacts:

- Erosion Management;
- Waste Management;
- Traffic Management; and
- Freshwater Management
- Road Management and construction

6.6 HANDLING OF COMPLAINTS RELATED TO THE PROJECT

A complaints or communication register must be developed and maintained by the EO and ESCO All forms of complaint must be forwarded to the EO and ECO/ESCO in writing. These must be entered into the environmental register and all responses and actions taken to address these must also be recorded. All issues raised must be addressed. It is important that the complainant feels that their concerns have been listened to and that appropriate action (within reason) has been taken to address these.

6.7 CONDUCT OF EMPLOYEES ON SITE

The following restrictions will be placed on all staff operating on the site in general:

- Adherence to relevant health and safety standards and municipal by laws
- Use of appropriate Personal Protective Equipment (PPE) at all times
- No alcohol or illegal substance use may occur on site
- No illegal disposal of rubble;
- No littering of the site or surrounding areas;
- No collection of firewood;
- No interference with any fauna or flora;
- No use of toilet facilities other than the chemical toilets provided on site;
- No lighting of open fires; and
- No burning of any waste on site.

6.8 MATTERS PERTAINING TO NON-CONFORMANCE ON SITE

"Non-conformances" would occur when there are deviations from any of the construction requirements of this EMPr. This must also include non-compliance with the relevant environmental regulations.

The Contractor is responsible for the implementation of the conditions stipulated in the EMPr on the site. The ECO/ESCO in collaboration with the Contractor's EO must undertake the following activities:

- The ECO/ESCO to investigate and identify the cause of non-conformances on the project site.
- The ECO/ESCO to report matters of non-conformance to the national Department of Environmental Affairs within a suitable timeframe, dependant on the severity of the incident.
- The EO to implement suitable corrective action as well as prevent recurrence of the problem.
- The EO to assign responsibility for corrective and preventative action.
- Any corrective action taken to eliminate the cause/s of non-conformance shall be appropriate to the magnitude of the problems and commensurate with the environmental impact encountered.

Records

The Contractor must maintain and update the environmental register at all times regarding non-conformance issues. The record shall specifically contain and list the instances of non-conformances found in the EMPr, the date of their occurrence, date of corrective action, and date of completion of

preventive action. In addition, matters of non-conformance and corrective action must be included within the audit reports. Records must be are legible, identifiable, protected and easily retrieved for review.

Fine and Penalties relating to non-conformance/contraventions

The Contractor must comply with the environmental requirements of the construction phase requirements of this EMPr on an on-going basis and any failure on his part to do so will entitle the ECO/ESCO and Principal Agent to impose a fine subject to the details set out below. Money from fines/penalties will be managed and allocated at the discretion of the Principal Agent.

1) Spot fines

Spot fines will be issued per incident in addition to any remedial costs incurred as a result of non-conformance with the EMPr, at the discretion of the Principal Agent and ECO/ESCO. The ECO/ESCO may *recommend* the imposition of fines and penalties but the Principal Agent will be responsible for imposing such fines or penalties against the account of the Contractor. Fines may be imposed on the Contractor for contraventions of the EMPr by individuals or operators employed by the Contractor and/or any sub-Contractors. The Principal Agent will inform the Contractor of the EMPr contravention and the amount of the fine. These monies will be recovered by the Principal Agent from the Contractor.

Failure by the Contractor to pay fines imposed by the Principal Agent within 14 days of the fine being imposed may result in a "Stop Works" order being issued by the Principal Agent until the matter is resolved. Any costs incurred as a result of the "Stop Works" order will be for the account of the Contractor.

The following spot fines are recommended for contraventions (plus any rehabilitation costs if applicable):

a) Any individual/s littering on site: R50 on first offence and R250 on further offences.
b) Any individual/s burning waste on site: R250 on first offence and R1 000 on further offences.
c) Any individual/s dumping waste on site: R250 on first offence and R1 000 on further offences.
d) Any violation of a Method Statement: R250 for first offence and R1 500 on further offences.
e) Any individual causing avoidable disturbance to fauna and flora on site: R250 on first offence and R1 000 on further offences.
    - This notably includes any presence, activity or disturbance of the Renosterveld remnants which must be treated as strict no-go areas.

2) Penalty fines

Penalty fines will be implemented where the Contractor repeatedly fails to comply with the specifications of this EMPr the Contractor will be liable to pay a penalty fine over and above any other contractual consequence.

The following penalty fines (per repeat offence) are recommended for transgressions:

a) Ongoing littering on site: R2 500 plus any rehabilitation costs, if applicable.
b) Ongoing dumping of any waste on site: R10 000 plus any rehabilitation costs, if applicable.
c) Ongoing burning of any waste on site: R10 000 plus any rehabilitation costs, if applicable.
d) Ongoing transgression of a Method Statement: R10 000 plus any rehabilitation costs, if

applicable.

e) Ongoing disturbance to Fauna and Flora on site: R5 000 plus any rehabilitation costs, if applicable.
    - This notably includes any presence, activity or disturbance of the Renosterveld remnants which must be treated as strict no-go areas.

3) Other fines

a) Any individual/s causing damage to identified sensitive natural areas: R5 000 plus any rehabilitation costs.
    - This notably includes any disturbance or damage to the Renosterveld remnants which must be treated as strict no-go areas.

b) Any individual/s causing damage to identified sensitive heritage areas: R5 000 plus any rehabilitation costs.

c) Any individual/s causing irreparable damage to the environment: R10 000.

d) Injuring or killing of any wildlife: R5 000 plus any rehabilitation costs, if applicable.

The above recommended fines are applicable and relevant to the construction phase of this EMPr and as such do not exempt the client from other legal obligations such as *Section 24(h)* National Environmental Management Second Amendment Act, Act No. 107 of 1998, which states that it is "*an offence for any person to contravene conditions applicable to any environmental authorization granted for a listed activity. A person convicted of an offence is liable to a fine not exceeding R5 million or to imprisonment for a period not exceeding ten years, or to both such fine and such imprisonment".*

An Environmental Management Programme constitutes a *Condition* applicable to an *Environmental Authorisation* and any transgression would thus trigger *Section 24(h)* of the above-mentioned Act. The exact penalty and fines will be decided on, subsequent to consultation with Competent Authority and the local municipality.

All staff working on-site must be made aware of the penalties and fines associated with non-conformance. The Principal Agent will be responsible for ensuring that the penalty system is maintained and enforced. Should disputes arise between the Client, Engineer, Contractor or ECO/ESCO with respect to the above then the matter will be referred to arbitration.

ANNEXURE A

GLOSSARY

TERMS USED IN THIS *EMP*

"Acceptable exposure" *means the exposure of the maximum permissible concentration of a substance to the environment that will have a minimal negative effect on health or the environment.*

"Agenda 21" *means the document by that name adopted at the United Nations Conference of Environment and Development held in Rio de Janeiro, Brazil in June 1992.*

"Agreement"*, for the purpose of NEMA EIA Regulations GNR 982 regulation 1(3) and (4) (of 2014) means the Agreement as contemplated in section 50A (2) of the Act;*

"Agri-industrial" *means an undertaking involving the beneficiation of agricultural produce.*

*"**Alternatives**", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to –*

(a) the property on which, or location where, the activity is proposed to be undertaken;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity; or
(e) the operational aspects of the activity;

And includes the option of not implementing the activity.

*"**Applicant**", means a person who has submitted or who intends to submit an application.*

"Application" *in terms of the NEMA EIA Regulations GNR 982 (2014) means an application for an –*

(a) Environmental authorisation in terms of Chapter 4 of these Regulations;
(b) Amendment to an environmental authorisation in terms of Chapter 5 of these Regulations;
(c) Amendment to an EMPr in terms of Chapter 5 of these Regulations; or
(d) Amendment of a closure plan in terms of Chapter 5 of these Regulations;

"Aquifer" *means a geological formation which has structures or textures that hold water or permit appreciable water movement through them*

"Aquatic critical biodiversity areas"*, means linkages between catchment, important rivers and sensitive estuaries whose safeguarding is critically required in order to meet biodiversity pattern and process thresholds and are spatially defined as part of a bioregional plan or systematic biodiversity plan, available on the South African National Biodiversity Institute's BGIS website (http://bgis.sanbi.org/WCBF14project.asp);*

"Associated structures, infrastructure and earthworks" *means any structures, infrastructure or earthworks, including borrow pits, that is necessary for the functioning of a facility activity;*

"Basic assessment report" *means a report contemplated in NEMA EIA Regulations GNR 982 regulation 19 (of 2014);*

"Best practicable environmental option" *means the Option that provides the most benefit or causes the least damage to the environment as a whole at a cost acceptable to society in the long term as well as in the short term*

"Biodiversity"*, this means the variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.*

"Bioregional plan" *means the bioregional plan contemplated in Chapter 3 of the National Environment Management Biodiversity Act, 2004 (Act No. 10 of 2004);*

"Borehole" *includes a well, excavation or my artificially constructed or improved underground cavity which can be used for the purpose of—*

(a) intercepting, collecting or storing water in or removing water from an aquifer;
(b) observing and collecting data and information on water in an aquifer; or
(c) recharging an aquifer;

"Buffer area" *means, unless specifically defined, an area extending 10 kilometres from the proclaimed boundary of a world heritage site or national park and 5 kilometres from the proclaimed boundary of a nature reserve, respectively, or that defined as such for a biosphere;*

"Building and demolition waste" *means waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition.*

"Business waste" *means waste that emanates from premises that are used wholly or mainly for commercial, retail, wholesale, entertainment or government administration purposes.*

"By-product" *means a substance that is produced as part of a process that is primarily intended to produce another substance or product and that has the characteristics of an equivalent virgin product or material.*

"Canal" *means an open structure that is lined or reinforced, for the conveying of a liquid or that serves as an artificial watercourse.*

"Catchment" *in relation to a watercourse or watercourses or part of a watercourse, means the area from which any rainfall will drain into the watercourse or watercourses or part of a watercourse, through surface flow to a common point or common points.*

"Channel" *means an excavated hollow bed for running water or an artificial underwater depression to make a water body navigable in a natural watercourse, river or the sea.*

"Clean production" *means the continuous application of integrated preventative environmental strategies to processes, products and services to increase overall efficiency and to reduce the impact of such processes, procedures and services on health and the environment.*

*The term '**client**' means the owner of the asset to be procured or project product, and representative of the end users of the asset.*

"Closure plan" *means a plan contemplated in NEMA EIA Regulations GNR 982 regulation 19 (of 2014);*

"Commence" *means the start of any physical activity, including site preparation or any other activity on the site in furtherance of" a waste management activity, but does not include any activity required for investigation or feasibility study purposes as long as such investigation or feasibility study does not constitute a waste management activity.*

"Commercially confidential information" *means commercial information the disclosure of which would prejudice to an unreasonable degree the commercial interests of the holder provided that details of emission levels and waste products must not be considered to be commercially confidential notwithstanding any provision of this Act or any other law.*

"Community" *means any group of persons or a part of such a group who share common interests and who regard themselves as a community.*

"Competent authority*", means the authority who in terms of the provisions of the NEMA and the EIA Regulations GNR 982 (of 2014) is identified as the authority who must consider and decide on an application in respect of a Specific listed activity.*

> *Note: the "competent authority" in terms of an application for environmental authorisation for an Activity listed in listing notice 1, 2 or 3, is not necessarily the same authority as the "licensing Authority" in terms of the NEMA:WA or NEM: AQA.*

"Concentration of animals" *means the keeping of animals in a confined space or structure, including a feedlot, where they are fed in order to prepare them for slaughter or to produce products such as milk or eggs.*

"Conservation" *in relation to a water resource means the efficient use and saving of water, achieved through measures such as water saving devices, water-efficient processes, water demand management and water rationing.*

"Constitution" *means the Constitution of the Republic of South Africa 1996 (Act No. 108 of 1996).*

"Construction" *means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.*

*The term '**Contractor**' means an organisation that contracts with a Principal to carry out the work under the contract, including construction and related services, to deliver an asset or construction product.*

*The term '**consultant**' means a professional person or organisation that contracts with a customer to provide design, management or other services.*

"Container" *means a disposable or re-usable vessel in which waste is placed for the purposes of storing, accumulating, handling, transporting, treating or disposing of that waste, and includes bins, bin-liners and skips.*

"Contaminated" *means the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro - organism directly or indirectly affects or may affect the quality of soil or the environment adversely.*

"Cultural significance"*, this means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.*

"Cumulative impact"*, in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities;*

"Dam" *when used in the Listing Notice 1 GNR 983 and Listing Notice 2 GNR 984 Regulations means any barrier dam and any other form of impoundment used for the storage of water.*

"Dangerous goods" *means goods containing any of the substances as contemplated in South African National Standard No. 10234, supplement 2008 1.00: designated "List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)" published by Standards South Africa, and where the*

presence of such goods, regardless of quantity, in a blend or mixture, causes such blend or mixture to have one or more of the characteristics listed in the Hazard Statements in section 4.2.3, namely physical hazards, health hazards or environmental hazards;

*"**Days**" means calendar days. Note: when a period of days must in terms of these regulations be reckoned from or after a particular Day, that period must be reckoned as from the start of the day following that particular day to the end of the last day of the period, but if the last day of the period falls on a Saturday, Sunday or public holiday, that period must be extended to the end of the next day which is not a Saturday, Sunday or public holiday. The period of 15 December to 2 January must be excluded.*
In the reckoning of days, where a timeframe is affected by the 15 December to 2 January period, the timeframe must be extended by the number of days falling within the 15 December to 2 January period. Where a timeframe is affected by one or more public holidays, the timeframe must be extended by the number of public holiday days falling within that timeframe.

***"Decommissioning"** means to take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned.*

*"**Department**", means the Western Cape department of environmental affairs and development planning;*

***"Derelict land"** means abandoned land or property where the lawful/legal land use right has not been exercised during the preceding ten-year period.*

*The term **'design'** means the process (and product) of converting a brief into design details ready for documentation, including concept design and design development, and then documentation or detailing of the technical and other requirements for the project in a written form that details the project product sufficiently for it to be constructed or otherwise provided.*

***"Development"** means the building, erection, construction or establishment of a facility, structure of infrastructure, including associated earthworks or borrow pits, that is necessary for the undertaking of a listed or specified activity, including any associated post development monitoring, but excludes any modification, alteration or expansion of such a facility, structure of infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint;*

***"Development footprint",** means any evidence of its physical alteration as a result of the undertaking of any activity;*

***"Development setback"** means a setback line defined or adopted by the competent authority;*

***"Disposal"** means the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land.*

***"Domestic waste"** means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes.*

***"DWA"**, the Department of Water Affairs. This Department is the custodian of South Africa's water resources. It is primarily responsible for the formulation and implementation of policy governing this sector. It also has override responsibility for water services provided by local government.*

***"Ecosystem"** means a dynamic system of plant animal and micro-organism communities and their non-living environment interacting as a functional unit.*

"Effluent" *means-*

a) Any liquid discharge into the coastal environment as waste and includes any substance dissolved or suspended in the liquid; or

b) Liquid which is a different temperature from the body of water into which it is being discharged.

"Environment", *the surroundings (biophysical, social and economic) within which humans exist and that are made up of:*

i. the land, water and atmosphere of the earth;
ii. micro-organisms, plant and animal life;
iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and
iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing;

*"**Environmental assessment practitioner**" (EAP), means the individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the NEMA EIA Regulations GNR 982 – as defined in section 1 of the Act.*

Note: if exemption from the appointment of an EAP has been applied for, the applicant must perform the tasks required of an EAP, as indicated in this guideline.

"Environmental audit report" *means a report contemplated in NEMA EIA Regulations GNR 982 regulation 34 (of 2014);*

*"**Environmental authorisation**", means the authorisation by a competent authority of a listed activity or specified activity in terms of this act, and includes a similar authorisation contemplated in a specific environmental management act.*

"Environmental Impact", *the direct effect of human activities and natural events on the components of the environment.*

"Environmental Impact Assessment" *(EIA), means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR;*

"Environmental Impact Assessment Report" *(EIR) means a report contemplated in NEMA EIA Regulations GNR 982 regulation 23 (of 2014);*

"Environmental Management Programme" *(EMPr), a document that contains recommendations for the control or management of the potential significant impacts of operations on the environment and recommendations to contain or mitigate actual impacts – as contemplated in NEMA EIA Regulations GNR 982 regulation 19 and regulation 23 (of 2014).*

*The term '**environmental opportunity**' means a potential for beneficial environmental impacts (such as an improvement in air or water quality through environmentally friendly technology alternatives).*

*The term '**environmental risk**' means a potential for adverse environmental impacts (such as pollution of a water source during construction activities).*

"Environmentally sound management" *means the taking of all practicable steps to ensure that waste is managed in a manner that will protect health and the environment.*

"Expansion" *means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.*

"Export" *means to take or send waste from the Republic to another country or territory.*

"Extended producer responsibility measures" *means measures that extend a person's financial or physical responsibility for a product to the post-consumer stage of the product, and includes—*

(a) waste minimisation programmes;
(b) financial arrangements for any fund that has been established to promote the reduction, re-use, recycling and recovery of waste;
(c) awareness programmes to inform the public of the impacts of waste emanating from the product on health and the environment; and
(d) any other measures to reduce the potential impact of the product on health and the environment

"Fatal Flaw"*: generally, this is regarded as an impact associated with an activity on a site that is of such a negative or detrimental nature that even with mitigation measures, cannot be mitigated to acceptable levels and it is therefore not considered as implementable by the relevant independent specialist or EAP.*

"Feasible", *Acceptable, capable of being used or implemented successfully, without unacceptably damaging the environment. Hydrogeological study: The study of ground water.*

"Financial year" *means a period commencing on 1 April of any year and ending on 31 March of the following year.*

"Forum" *refers to the National Environmental Advisory Forum.*

"Gazette"*, when used in relation to—*

(a) the Minister, means the Government Gazette; and
(b) the MEC, means the Provincial Gazette of the province concerned.

"General waste" *means waste that does not pose an immediate hazard or threat to health or to the environment, and includes—*

(a) domestic waste;
(b) building and demolition waste;
(c) business waste: and
(d) inert waste;

"Government waterwork" *means a waterwork owned or controlled by the Minister and includes the land on which it is situated.*

"Hazard" *means a source of or exposure to danger.*

"Hazardous waste" *means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.*

"Holder of waste" *means any person who imports, generates, stores, accumulates, transports, processes, treats, or exports waste or disposes of waste.*

"High-risk activity" *means an undertaking, including processes involving substances that present a likelihood of harm to health or the environment.*

"Import" *means any entry into the Republic other than entry for transit.*

"Important Bird and Biodiversity Areas (IBA)" *means areas/sites that hold significant numbers of globally and/or regionally threatened species (Categories A1 and C1); sites that are known or thought to hold a significant component of a group of species whose breeding distributions define and Endemic Bird Area (EBA) (Category A2); sites that are known or thought to hold a significant component of a group of species whose distributions are largely or wholly confined to one biome (Category A3);*

"Incineration" *means any method, technique or process to convert waste to flue gases and residues by means of oxidation.*

"Independent"*, in relation to an EAP, a specialist or the person responsible for the preparation of an environmental audit report, means –*

- *(a) That such EAP, specialist or person has no business, financial, personal or other interest in the activity or application in respect of which that EAP, specialist or person is appointed in terms of the NEMA EIA Regulations GNR 982 (2014); or*
- *(b) That there are no circumstances that may compromise the objectivity of that EAP, specialist or person in performing such work; excluding –*
  - *i. Normal remuneration for a specialist permanently employed by the EAP; or*
  - *ii. Fair remuneration for work performed in connection with that activity, application or environmental audit;*

"Indigenous vegetation" *refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.*

"Industrial complex" *means an area used or zoned for bulk storage, manufacturing, processing or packaging purposes.*

"Industry" *includes commercial activities, commercial agricultural activities, mining activities and the operation of power stations.*

"Inert waste" *means waste that—*

(a) does not undergo any significant physical, chemical or biological transformation after disposal;
(b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and
(c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant;

"In stream habitat" *includes the physical structure of a watercourse and the associated vegetation in relation to the bed of the watercourse.*

*"**Interested and affected party**" (I&AP), for the purposes of chapter 5 of the NEMA and in relation to the assessment of the environmental impact of a listed activity or related activity, means an interested and affected party contemplated in section 24(4)(a)(v), and which includes-*

(a) any person, group of persons or organisation interested in or affected by such operation or activity; and
(b) any organ of stale that may have jurisdiction over any aspect of the operation or activity.

"International environmental instrument" *means any international agreement declaration, resolution, convention or protocol which relates to the management of the environment.*

"Large stock unit" *means domesticated units including but not limited to cattle and horses, as well as game, including but not limited to antelope and buck with an average adult male live weight of 100 kilograms or more.*

"Life cycle assessment" *means a process where the potential environmental effects or impacts of a product or service throughout the life of that product or service are being evaluated.*

"Linear activity" *means an activity that is arranged in or extending along one or more properties and which affects the environment or any aspect of the environment along the course of the activity, and includes railways, roads, canals, channels, funiculars, pipelines, conveyor belts, cableways, powerlines, fences, runways, aircraft landing strips, and telecommunication lines;*

"Littoral active zone" *means any land forming part of or adjacent to the seashore that is-*

a) *unstable and dynamic as a result of natural processes, and*
b) *characterised by dunes, beaches, sand bars and other landforms composed of unconsolidated sand, pebble or other such material which is either un-vegetated or only partially vegetated*

"Low water mark" *means the lowest line in which coastal waters recede during spring tides.*

"Maintenance" *means actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint;*

"Maintenance management plan" *means a management plan for maintenance purposes defined or adopted by the competent authority;*

*The term '**management**' means the planning and interactive controlling of human and material resources to achieve time, cost, quality, performance, functional and scope requirements. It involves the anticipation of changes due to changing circumstances and the making of other changes to minimise adverse effects.*

"MEC" *means the Member of the Executive Council to whom the Premier has assigned the performance in the province of the functions entrusted to a MEC by or under such a provision.*

"Minimisation", *when used in relation to waste, means the avoidance of the amount and toxicity of waste that is generated and. in the event where waste is generated, the reduction of the amount and toxicity of waste that is disposed of.*

"Minimum information requirements" *means the minimum information requirements contemplated in section 24(5)(bA)(viiiA), if any are applicable at the time of the application;*

"Mitigation" *means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible;*

"Mixed use", *with regard to an activity, means the presence of two or more types of land use in an area.*

"National Appeal Regulations" *means the national appeal regulations published in terms of section 43(4) and 44 of the Act;*

"National department" *means a department of State within the national sphere of government.*

"National Environmental Management Act" *(NEMA), means the National Environmental Management Act, 1998 (Act No. 107 of 1998); To provide for co-operative environmental governance by establishing principles for*

decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith.

"National Protected Area Expansion Strategy (NPAES)" *means South Africa's national strategy for expansion of the protected area network, led by the Department of Environmental Affairs and developed in collaboration with national and provincial conservation authorities. The NPAES sets targets for protected area expansion, provides maps of the most important areas for protected area expansion, and makes recommendations on mechanisms for protected area expansion. Focus areas for protected area expansion are identified in the NPAES. They are large, intact, unfragmented areas of high importance for land-based protected area expansion, suitable for the creation or expansion of large protected areas.*

"NEM: AQA", *National Environmental Management: Air Quality Act (39 of 2004). The NEM: AQA's serves to protect the environment by providing reasonable measures for the protection and improvement of the quality of air; the prevention of air pollution and ecological degradation; and securing ecologically sustainable development while promoting economic and social development.*

"NEM: BA", *National Environmental Management: Biodiversity Act (10 of 2004). This Act serves to provide for the management and conservation of biological diversity within an area and of the components of such biological diversity. This Acts objective is to preserve species and ecosystems irrespective of whether or not they are situated in protected areas.*

"NEM: PAA", *National Environmental Management: Protected Areas Act (57 of 2003). This Act is intended to protect and conserve ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. This includes the identification and classification of various types of protected areas to give effect to this intention and underpinning this intention is the stated objective of creating a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity. These protected areas are to fall on state owned land, privately owned land and communally owned land.*

"NEM: WA", *National Environmental Management: Waste Act (59 of 2008). The NEM:WA serves to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.*

"NEMA EIA regulations*", mean the environmental impact assessment regulations promulgated in terms of the national environmental management act, 1998 (act no. 107 of 1998) ("NEMA") 12.*

*"**No-go option**" means the option of not implementing the activity.*

"Non-substantive"*, in relation to the amendment or substitution of a regulation, notice, strategy, licence, approval, or provision thereof, includes—*

> *(a) any clerical mistake, unintentional error or omission;*
> *(b) the correction of any miscalculated figure; and 45*
> *(c) the correction of any incorrect description of any person, thing, property or waste management activity;*

"Ocean-based activity" *means an activity in the territorial waters of the Republic of South Africa;*

*"**Organ of state**", means -*

(a) any department of state or administration in the national, provincial or local sphere of government; or
(b) any other functionary or institution –
I. Exercising a power or performing a function in terms of the constitution or a provincial constitution; or
Ii. Exercising a public power or performing a public function in terms of any legislation but does not include a court or a judicial officer.

Note: examples of organs of state include: municipalities (both the district and local municipality), Heritage western cape, CapeNature, the department of water affairs, etc.

"Person" *includes a natural person, a juristic person, an unincorporated body, an association, an organ of state and the Minister.*

"Phased activities" *means an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent or his or her successors.*

"Plan of study for environmental impact assessment" *means a study contemplated in NEMA EIA Regulations GNR 982 regulation 22 (of 2014) which forms part of a scoping report and sets out how an environmental impact assessment will be conducted;*

"Pollution", *manes any change in the environment caused by-*

i. *Substances*
ii. *Radioactive or other wastes; or*
iii. *Noise, odours, dust or heat.*

Emitted from any activity, including the storage to treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where the change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems or on material useful to people, or will have an effect in the future.

"Previous NEMA notices" *as contemplated in these transitional arrangements means the previous notices published in terms of section 24(2) and NEMA (Government Notices R. 386 and R. 387 in the Government Gazette of 21 April 2006, as amended, or Government Notice No. R 544, 545 and 546 in the Government Gazette of 18 June 2010, as amended);*

*"**Previous NEMA regulations**" means the environmental impact assessment regulations published in terms of: · sections 26 and 28 of the ECA, by government notice no. R. 1183 of 5 September 1997; or · NEMA, by government notice no. R. 385 in the government gazette of 21 April 2006.*

*The term '**procurement**' means the collection of activities performed by and for an agency to acquire services and products, including assets, beginning with the identification/detailing of service requirements and concluding with the acceptance (and where applicable, disposal) of the services and products.*

*The term '**project**' means an undertaking with a defined beginning and objective by which completion is identified. Project delivery may be completed using one contract or a number of contracts*

***"Proponent"** means a person intending to submit an application for environmental authorisation and is referred to as an applicant once such application for environmental authorisation has been submitted;*

***"Protection"** in relation to a water resource, means -*

(a) maintenance of the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way;
(b) prevention of the degradation of the water resource; and
(c) the rehabilitation of the water resource

***"Protected area"** means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers;*

*"**Public participation process**", means a process by which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, an application.*

***"Receipt"** means receipt on the date indicated –*

(a) On a receipt form if the application of document was hand delivered or sent via registered mail;
(b) In an automated or computer generated acknowledgment of receipt;
(c) On an acknowledgment in writing from the competent authority as the date of receipt if the application or document was sent via ordinary mail; or
(d) On an automated or computer generated proof of transmission in the case of a facsimile message;

***"Recovery"** means the controlled extraction of a material or the retrieval of energy from waste to produce a product.*

***"Recycle"** means a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.*

***"Red Flags"**: generally, this is terminology used to bring to attention, at the early stages of assessment, a potentially serious issue that needs to be assessed in greater detail and that may have undesirable impacts, even with mitigation. This can however, only be determined on detailed assessment, but serves as a good guide to the professional team and EAP and applicant early on in the process to inform further design on site.*

***"Registered environmental assessment practitioner or registered EAP"** means an environmental assessment practitioner registered with an appointed registration authority contemplated in section 24H of the Act;*

*"**Registered interested and affected parties**" in relation to an application, means an interested and affected party whose name is recorded in the register opened for that application in terms of NEMA EIA Regulations GNR 982 regulation 42 (of 2014);*
a) all persons who, as a consequence of the public participation process conducted in respect of an application have submitted written comments or attended meetings with the applicant or EAP;
b) all persons who, after completion of the public participation process, have requested the applicant or the EAP managing the application, in writing, for their names to be placed on the register; and
c) all organs of state which have jurisdiction in respect of the activity to which the application relates.

Note: to be registered as an interested and affected party the persons referred to in (a) and (b) above must provide their names, contact details and addresses to the EAP managing the application process.
Registered IA&Ps must ensure that they notify the EAP if their contact details and/or address changes during the application process.

A registered I&AP is entitled to comment, in writing, on all written submissions made to the department by the applicant or the EAP, provided that comments are submitted within the specified timeframes and the I&AP discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

***"Reserve"** means the quantity and quality of water required -*

(a) to satisfy basic human needs by securing basic water supply, as prescribed under the Water Services Act. I) 97 (Act No, 108 of 1997) for people who are now or who will, in the reasonably near future be—
(i) relying upon;
(ii) taking water from; or
(iii) being supplied from, the relevant water resource; and
(b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant watt resource.

***"Resource quality"** means the quality of all the aspects of a water resource including-*

(a) the quality, pattern, timing, water level and assurance of instream flow;
(b) the water quality, including the physical, chemical and biological characteristics of the water;
(c) the character and condition of the instream and riparian habitat; and
(d) the characteristics, condition and distribution of the aquatic biota.

***"Responsible authority"** in relation to a specific power or duty in respect of water uses means-*

(a) it that power or duty has been assigned by the Minister to a catchment management agency that catchment management agency; or
(b) it that power or duty has not so been assigned the Minister.

***"Re-use"** means to utilise articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles.*

***"Riparian habitat"** includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of Species with a composition and physical structure distinct from those of adjacent land areas.*

***"Route determination"** means the process of planning and designing a new route;*

***"SANS 1089:1999"** The Petroleum Industry: Storage and distribution of petroleum products in above-ground bulk installations.*

***"Scoping report"** means a report contemplated in NEMA EIA Regulations GNR 982 regulation 21 (of 2014);*

***"S&EIR"** means the scoping and environmental impact reporting process contemplated in NEMA EIA Regulations GNR 982 regulation 21 to regulation 24 (of 2014);*

*The term '**service provider**' means a Contractor, sub-Contractor, supplier, consultant (including an agency) and sub-consultant (contracting with a consultant), and their service providers, that contract with a customer to carry out assets construction, provide other products (including goods) and/or provide services.*

***"Significant impact"** means an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence;*

***"Site or areas listed in terms of an International Convention"** means any area and its buffer, unless specifically defined, of 5 kilometres extending from is listed boundary, listed in terms of an international convention but does not include world heritage sites, and shall include but not be limited to the Ramsar Convention on Wetlands (Ramsar, Iran, 1971);*

***"Small stock unit"** means domesticated units, including sheep, goats and pigs, as well as game, including but not limited to antelope and buck with an average adult male live weight of less than 100 kilograms.*

***"Specialist"** means an independent SACNASP registered specialist with experience with the relevant taxa and who is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports or undertaking specialist assessments;*

*"**State department**", means any department or administration in the national or provincial sphere of Government exercising functions that involve the management of the environment or that administer a law relating to a matter affecting the environment.*

Note: examples of state departments include: the department of water affairs, department of agriculture, etc. Whilst all state departments are organs of state, not all organs of state are state departments (e.g. Municipalities are organs of state, but not state departments).

***"State land"** means land which vests in the national or a provincial government, and includes land below the high water mark and the Admiralty Reserve but excludes land belonging to a local authority.*

***"Storage"** means the accumulation of waste in a manner that does not constitute treatment or disposal of that waste.*

*The term '**sub-Contractor**' means an organisation that contracts with a Contractor as the customer to carry out construction and related services, and/or provide other products.*

*The term '**supplier**' means an organisation that contracts with a Contractor/Principal to supply a product and/or service**.***

***"Sustainable development"** means the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.*

***"Systematic biodiversity plan"** is a plan that identifies important areas for biodiversity conservation, taking into account biodiversity patterns (i.e. the principle of representation) and the ecological and evolutionary processes that sustain them (i.e. the principle of persistence). A systematic biodiversity plan must set quantitative targets/thresholds for aquatic and terrestrial biodiversity features in order to conserve a representative sample of biodiversity pattern and ecological processes;*

***"the Act"** means the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended;*

- *Any reference in the associated regulations to an environmental assessment practitioner will, from a date to be determined by the Minister by notice in the Gazette, be deemed to be a reference to a registered environmental assessment practitioner, as defined.*

"Throughput capacity" *means the design capacity or maximum capable capacity of a facility, structures or infrastructure, whichever is greater;*

"Transit" *means the continuous passage from one border of the Republic to another such border without storage other than temporary storage incidental to transport.*

"Treatment" *means any method, technique or process that is designed to—*

(a) change the physical, biological or chemical character or composition of a waste; or
(b) remove, separate, concentrate or recover a hazardous or toxic component of a waste; or
(c) destroy or reduce the toxicity of a waste, in order to minimise the impact of the waste on the environment prior to further use or disposal:

"Undeveloped" *means that no facilities, structures or infrastructure have been effected upon the land or property during the preceding 10 years.*

"Unit" *in relation to a quantity standard for determining throughput of facilities or infrastructure for the slaughter of animals, has the meaning assigned to it in Regulations promulgated in terms of the Meat Safety Act, 2000 (Act No. of 40 of 2000).*

"Urban areas" *means areas situated within the urban edge (as defined or adopted by the competent authority), or in instances where no urban edge or boundary has been defined or adopted, it refers to areas situated within the edge of built-up areas.*

"Vacant" *means not occupied for the purpose of its lawful land use during the preceding ten-year period.*

"Virgin soil" *means land not cultivated for the preceding 10 years.*

"Waste" *means any substance, whether or not that substance can be reduced, re-used, recycled and recovered—*
(a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
(b) which the generator has no further use of for the purposes of production;
(c) that must be treated or disposed of; or
(d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but—
(i) a by-product is not considered waste; and
(ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste;

"Waste disposal facility" *means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.*

"Waste management activity" *means any activity listed in Schedule 1 or 40 published by notice in the Gazette under section 19, and includes—*

(a) the importation and exportation of waste;
(b) the generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste:
(c) the accumulation and storage of waste;

(d) the collection and handling of waste;
(e) the reduction, re-use, recycling and recovery of waste;
(f) the trading in waste;
(g) the transportation of waste;
(h) the transfer of waste; 50
(i) the treatment of waste; and
(j) the disposal of waste;

"Waste management services" *means waste collection, treatment, recycling and disposal services.*

"Waste minimisation programme" *means a programme that is intended to promote the reduced generation and disposal of waste.*

"Waste transfer facility" *means a facility that is used to accumulate and temporarily store waste before it is transported to a recycling, treatment or waste disposal facility.*

"Waste treatment facility" *means any site that is used to accumulate waste for the purpose of storage, recovery, treatment, reprocessing, recycling or sorting of that waste.*

"Watercourse" *means-*

(a) a river or spring;
(b) a natural channel in which water flows regularly or intermittently;
(c) a wetland lake or dam into which, or from which, water flows; and
(d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and

A reference to a watercourse includes, where relevant, its bed and banks;

"Water management area" *is an area established as a management unit in the national water resource strategy within which a catchment management agency will conduct the protection use development, conservation, management and control of water resources.*

"Water management institution" *means a catchment management agency, a water user association, a body responsible for international water management or any person who fulfils the functions of a water management institution in terms of this Act.*

"Water resource" *includes a watercourse, surface water, estuary, or aquifer.*

"Waterwork" *includes any borehole, structure, earthwork or equipment installed or used for or in connection with Water use.*

"Wetland" *means land which is transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface, or the land is periodically covered with shallow water and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated so*

ANNEXURE B

METHOD STATEMENT

TYPICAL BASELINE INFORMATION TABLE RELATING TO CONSTRUCTION WORKS

Describe in detail *what* work is to be undertaken?
Describe in detail *where* on the site the works are to be undertaken and the *extent*?
***When* the works will start and the anticipated finishing date of these works?**
***How* are the works to be undertaken?**
Typical Plant and Machinery to be used
Materials to be stored on Site

METHOD STATEMENT TABLE

PROJECT NAME	
IMPACT SOURCE(S)	
RECEPTOR(S)	
OBJECTIVE	
RISKS	
Impacts of Camp Site on Surrounding Site	
NOTES:	

ROLE	**NAME**	**COMPANY**	**DATE**	**SIGNATURE**
CLIENT				
PRINCIPAL AGENT				
CONTRACTOR				
ENGINEER				
ECO/ESCO				

Signature of this Method Statement represents a **binding agreement** to the Method Statement and associated Construction EMP by all site Contractors and sub-Contractors involved in the work for which the Method Statement is submitted.

DECLARATIONS OF RESPONSIBILITY ROLES ON PROJECT

ROLE	NAME	COMPANY	DATE	SIGNATURE
CLIENT				
PRINCIPAL AGENT				
CONTRACTOR				
ENGINEER				
ECO/ESCO				

DECLARATIONS OF UNDERSTANDING BY PARTIES

CLIENT

I understand the contents of the method statement document and associated construction EMP as well as the legal obligations in terms of ensuring that the Project Team comply with this Method Statement and associated Construction EMP.

(Print name)

(Signed) **Dated:**

CONTRACTOR

I understand the contents of the method statement document and the scope of the works required of me. I further understand that the method statement may be amended on application to the signatories of this declaration, and that the Environmental Control Officer will audit my compliance with the contents of this method statement.

(Print name)

(signed) **Dated:**

ENVIRONMENTAL CONTROL OFFICER (ECO/ESCO)

The work described in this Method Statement document, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm.

(Print Name)

(Signed) **Dated:**

PRINCIPAL AGENT

The work described in this Method Statement document, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm.

(Print name)

(Signed) **Dated:**

ANNEXURE C

RELEVANT PERMITS

ANNEXURE D

DESIGN AND PLANNING

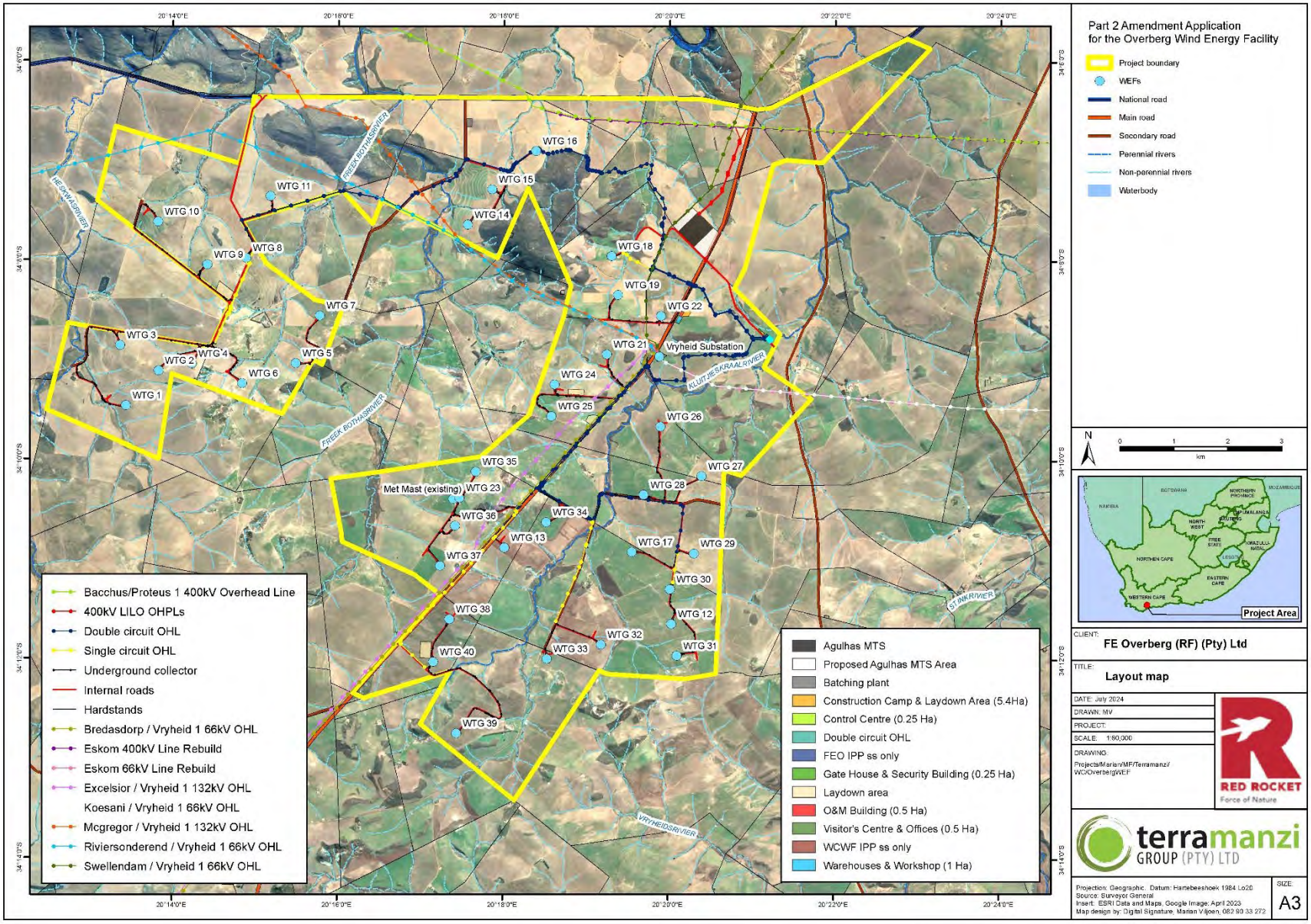


Figure 6.2. Annexure D: The Proposed Project Layout for the Overberg WEF (13 June 2024)

ANNEXURE E

ROLE OF THE ECO/ESCO

DUTIES OF THE ECO/ESCO

1. The identification of potential environmental impacts, prior to the onset of the project.
2. Ensuring that the EMPr conditions are adhered to at all times and taking action (via the engineer) where the specifications are not being followed.
3. Ensuring that environmental impacts are kept to a minimum.
4. Reviewing and approving method statements in consultation with the Principal Agent.
5. Advising the engineer and Contractor on environmental issues and assisting in developing environmentally responsible solutions to problems.
6. Reporting to the client and Principal Agent on a regular basis and advising of any environmental impacts.
7. Attending site meetings (when necessary) and giving a report back on the environmental issues at these meetings and other meetings that may be called regarding environmental matters.
8. Inspecting the site and surrounding areas regularly.
9. Establishing and monitoring an ongoing environmental awareness program in conjunction with the Contractor.
10. Requesting the removal of person(s) and/or equipment not complying with the specifications.
11. Keeping both a written and photographic record of progress on site from an environmental perspective, and an ad hoc record of all incidents or events on site with environmental ramifications. These records must be dated and accurately catalogued.
12. Undertaking continual internal review of the EMPr and submitting a report at the end of the project.
13. Submitting all written instructions and verbal requests to the Contractor via the engineer

ANNEXURE F

Specialist studies

ANNEXURE G

EAP's Curriculum Vita

ANNEXURE H

Environmental Authorisation (once available)

ANNEXURE I

Aquatic Rehabilitation Monitoring Pla

ANNEXURE J

Transportation Management Pla

ANNEXURE K

Stormwater Management Plan

ANNEXURE L

Fire Management Plan

ANNEXURE M

Re-Vegetation and Habitat Rehabilitation Plan

ANNEXURE N

Chance Fossil Finds Procedure

ANNEXURE O

DFFE Generic EMPr for the 132kV/33kV IPP Substations

Environmental Management Programme OHPL: Phase 1

FE Overberg (Pty) Ltd
2nd Floor, Cape Town Cruise Terminal Building
V&A Waterfront, Cape Town, 8001
+27 (0)21 418 3940 • info@redrocket.energy
www.redrocket.energy

Reg No: 2020/787250/07



FINAL TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

DEVELOPMENT OF THE OVERBERG 132KV OVERHEAD POWERLINE (OHPL) LOCATED SOUTHWEST OF THE TOWN OF SWELLENDAM WESTERN CAPE PROVINCE

APPLICANT: FE OVERBERG (RF) (PTY) LTD
CONTACT: MAGDALENA LOGAN

terramanzi
GROUP (PTY) LTD

people. planet. prosperity.

tel: +27 21 701 5228
fax: +27 86 558 1213
mobile: +27 82 575 3800

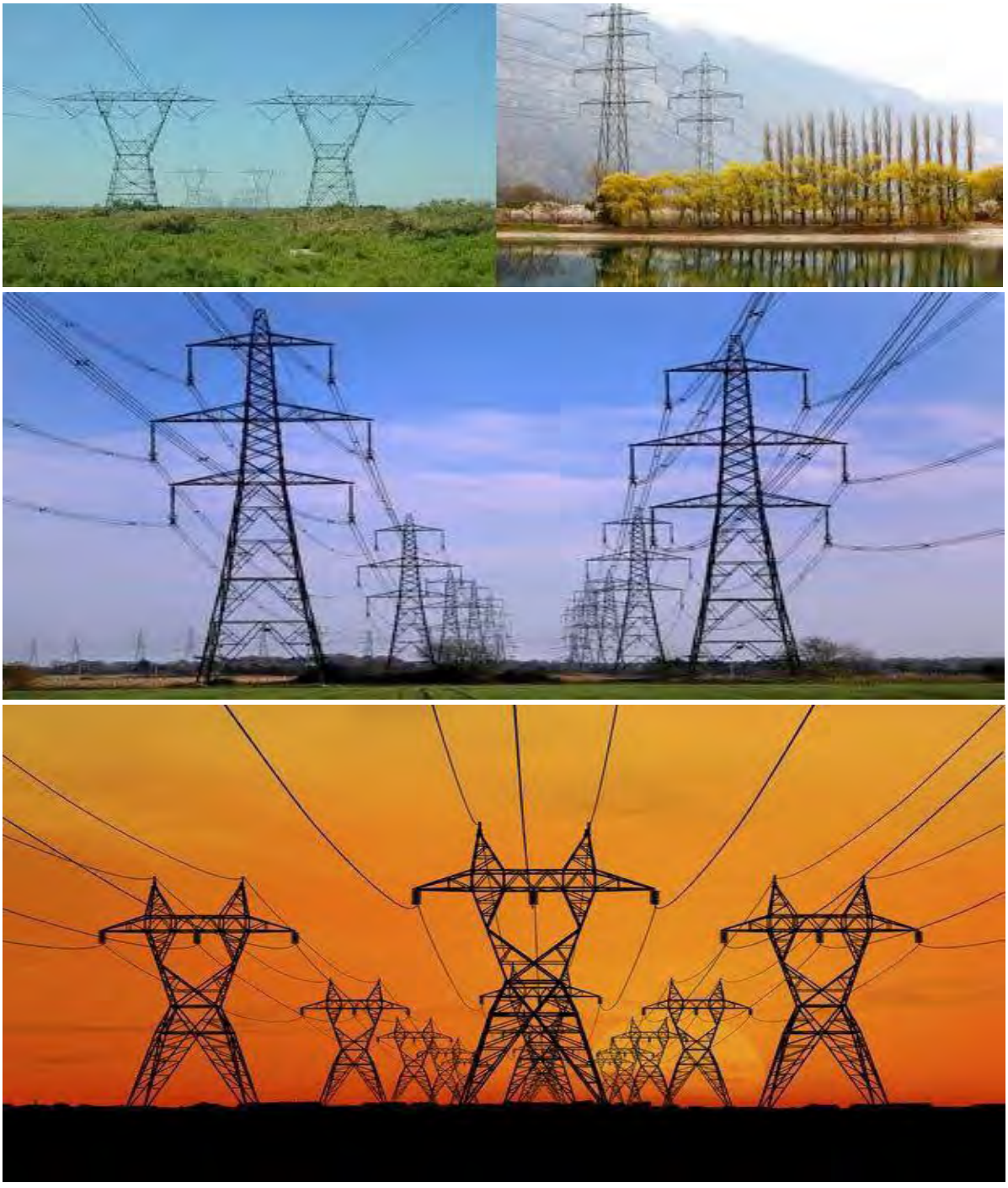
email: info@terramanzi.co.za
website: www.terramanzi.co.za

postal: postnet suite 211, private bag X26, tokai, 7966

OCTOBER 2024

APPENDIX 1

TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSIONFOR OVERHEAD ELECTRICITY TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

TABLE OF CONTENTS

INTRODUCTION 1

1. Background 1
2. Purpose 1
3. Objective 1
4. Scope 1
5. Structure of this document 2
6. Completion of part B: section 1: the pre-approved generic EMPr template 4
7. Amendments of the impact management outcomes and impact management actions 4
8. Documents to be submitted as part of part B: section 2 site specific informationand declaration 5

(a) Amendments to Part B: Section 2 – site specific information and declaration5

PART A – GENERAL INFORMATION 6

1. DEFINITIONS 6
2. ACRONYMS and ABBREVIATIONS 7

National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004) 7

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION 8
4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE 14

4.1 Document control/Filing system 14
4.2 Documentation to be available 14
4.3 Weekly Environmental Checklist 14
4.4 Environmental site meetings 15
4.5 Required Method Statements 15
4.6 Environmental Incident Log (Diary) 16
4.7 Non-compliance 16
4.8 Corrective action records 17
4.9 Photographic record 17
4.10 Complaints register 18
4.11 Claims for damages 18
4.12 Interactions with affected parties 18
4.13 Environmental audits 19
4.14 Final environmental audits 19

PART B: SECTION 1: Pre-approved generic EMPr template 20
5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS 20
5.1 Environmental awareness training 21
5.2 Site Establishment development 24
5.3 Access restricted areas 26
5.4 Access roads 27
5.5 Fencing and Gate installation 31
5.6 Water Supply Management 35
5.7 Storm and waste water management 37
5.8 Solid and hazardous waste management 38
5.9 Protection of watercourses 42
5.10 Vegetation clearing 44
5.11 Protection of fauna 50
5.12 Protection of heritage resources 54
5.13 Safety of the public 55
5.14 Sanitation 58
5.15 Prevention of disease 60
5.16 Emergency procedures 62
5.17 Hazardous substances 64
5.18 Workshop, equipment maintenance and storage 71
5.19 Batching plants 73
5.20 Dust emissions 76
5.21 Blasting 79
5.22 Noise 79
5.23 Fire prevention 81
5.24 Stockpiling and stockpile areas 83
5.25 Finalising tower positions 84
5.26 Excavation and Installation of foundations 86
5.27 Assembly and erecting towers 88
5.28 Stringing 93
5.29 Socio-economic 97
5.30 Temporary closure of site 99
5.31 Landscaping and rehabilitation 102

6 ACCESS TO THE GENERIC EMPr 106
PART B: SECTION 2 107
7 SITE SPECIFIC INFORMATION AND DECLARATION 107
7.1 Sub-section 1: contact details and description of theproject 107
7.2 Sub-section 2: Development footprint site map 110
7.3 Sub-section 3: Declaration 120
7.4 Sub-section 4: amendments to site specific information (Part B; section 2) 120
PART C 121
8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES 121
APPENDIX 1: METHOD STATEMENTS 125
APPENDIX 2: CV OF THE EAP 126

INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended, (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the competent authority (CA).

Please kindly see below an Organogram of the Applicant Company Structure (Figure 1) and Requirements for an Environmental Site Compliance Officer (ESCO):

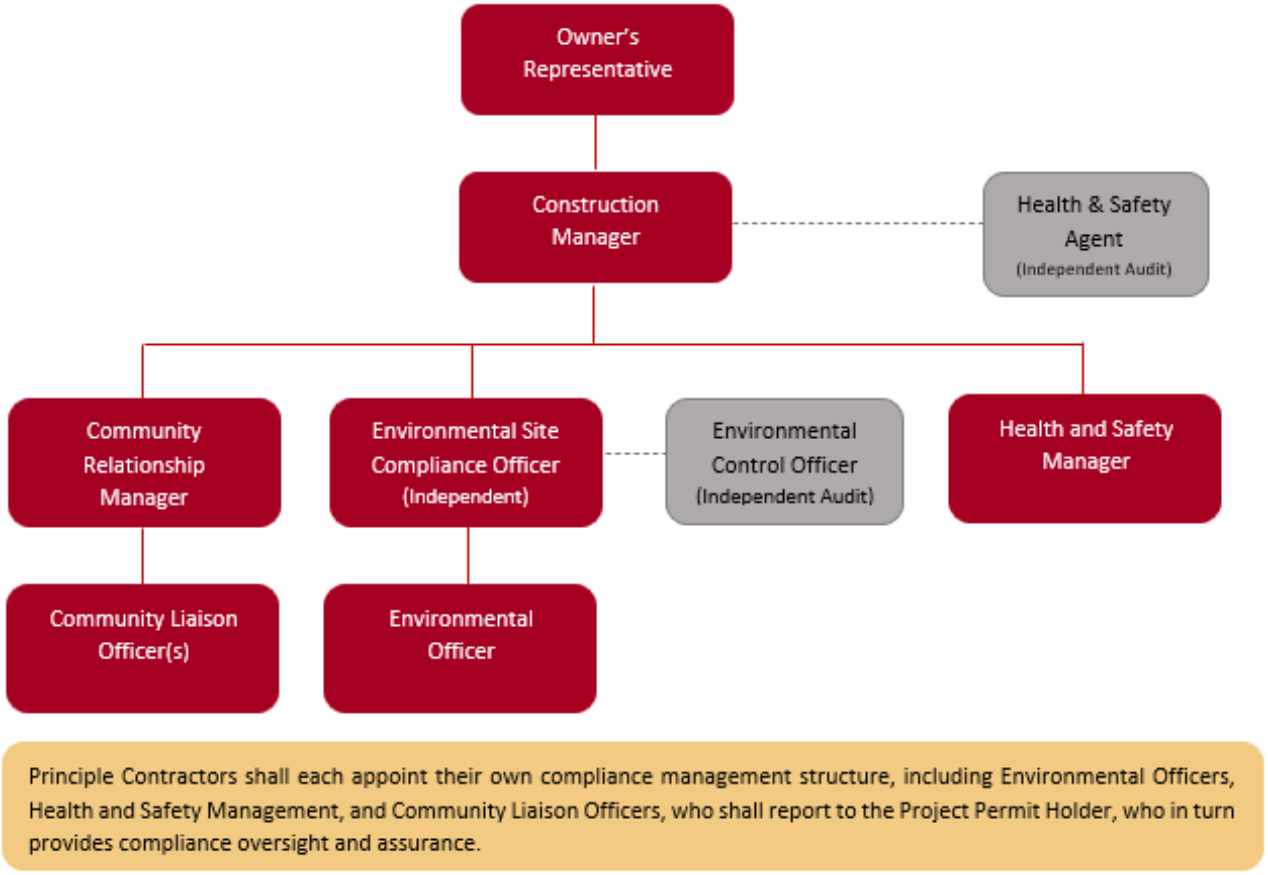


Figure 1. Organogram of the Applicant Company Structure.

A suitably qualified ESCO must be appointed by the Applicant to monitor the project compliance onsite on a full-time basis.

Responsibilities of the ESCO include:

- Be fully conversant with the BAR, the conditions of EA and the EMPr;
- Be fully conversant with all relevant environmental legislation and ensure compliance thereof;
- Approve method statements (co-approval with Site Manager);
- Remain employed until the completion of the construction activities; and
- Report to the Project Manager, including all findings identified onsite.

In addition, the ESCO will:

- Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation;
- Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and
- Ensure that activities onsite comply with all relevant environmental legislation.

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of overhead electricity transmission and distribution infrastructure, and all listed and specified activities necessary for the realisation of such infrastructure.

This EMPr has been developed for the construction and operation of the approved Overberg 132kV Overhead Powerline (OHPL) which will facilitate the connection of the approved FE Overberg WEF to the Agulhas MTS via the 132kV Switching Station. The Project is located Southwest of the town of Swellendam within the Swellendam Local Municipality in the Western Cape Province.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepareand review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realisation of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure, which are presented in the form ofa template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words “not applicable” can be inserted in the template under the “responsible persons” column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.

Part	Section	Heading	Content
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1 and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre- approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP, and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding.

Part	Section	Heading	Content
			This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
    - a 'responsible person',
    - a method for implementation,
    - a timeframe for implementation
- For monitoring
    - a responsible person
    - frequency
    - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the corridor in which the proposed overhead electricity transmission and distribution infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps must identify features both within the planned working area and any known sensitive features in the surrounding landscape within 50m from the development footprint. The overhead transmission and distribution profile must be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions must be used.

Sub-section 3 is the declaration that the applicant/proponent or holder of the EA in the case of a change of ownership must complete, which confirms that the applicant/EA holder will comply with the pre-approved generic EMPr template in Section 1 and understands that the impact management outcomes and actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

"**clearing**" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

"**construction camp**" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

"**contractor**" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"hazardous substance" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

"**method statement**" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover applicable details with regard to:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;
"solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

"**spoil**" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

"**topsoil**" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil; and

"**works**" means the works to be executed in terms of the Contract

2. ACRONYMS &ABREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environment Conservation Act No. 73 of 1989
ECO, ESCO	Environmental Control Officer, Environmental Site Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management:Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&APs	Registered interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person(s)	Role and Responsibilities
Developer's Project Manager (DPM)	Role The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO and/or ESCO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO, ESCO to perform responsibilities, and he must ensure that the ECO, ESCO is integrated as part of the project team while remaining independent. Responsibilities - Be fully conversant with the conditions of the EA. - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s). - Issuing of site instructions to the Contractor for corrective actions required. - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO, ESCO. The DSS is responsible for the day-to-day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.

Responsible Person(s)	Role and Responsibilities
	Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO). - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO, ESCO. - Must ensure that all landowners have the relevant contact details of the site staff, ECO, ESCO and cEO. - Issuing of site instructions to the Contractor for corrective actions required. - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO ESCO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties (RI&APs), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e., those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as be specified by the EA, report to the relevant CA as and when required. Responsibilities The responsibilities of the ECO will include the following: - A suitably qualified external ECO must be appointed by the Holder of the EA to audit the project compliance in terms of the EMPr and conditions of the EA on a monthly basis, during the construction phase, in line with Condition 21 of the EA. - The costs of the ECO shall be borne by the Holder of the EA (proof of appointment must be maintained onsite). - Be aware of the findings and conclusions of all EA related to the development. - Be familiar with the recommendations and mitigation measures of this EMPr. - Be conversant with relevant environmental legislation, policies, and procedures, and ensure compliance with them.

Responsible Person(s)	Role and Responsibilities
	- Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required. - Educate the construction team about the management measures contained in the EMPr and environmental licenses. - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective. - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements. - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses. - Liaison between the DPM, Contractors, authorities, and other lead stakeholders on all environmental concerns. - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr. - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO). - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken. - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken. - Assisting in the resolution of conflicts. - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor. - In case of non-compliances, the ECO, ESCO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO, ESCO may report this matter to the authorities as non-compliance. - Maintenance, update, and review of the EMPr. - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities.

Responsible Person(s)	Role and Responsibilities
	Responsibilities - Be fully conversant with the EMPr. - Be familiar with the recommendations and mitigation measures of this EMPr and implement these measures. - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s). - Confine the development site to the demarcated area. - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO). - Assist the contractors in addressing environmental challenges on site. - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared. - Assist the contractor in investigating environmental incidents and compile investigation reports. - Follow-up on pre-warnings, defects, non-conformance reports. - Measure and communicate environmental performance to the Contractor. - Conduct environmental awareness training on site together with ECO, ESCO and cEO. - Ensure that the necessary legal permits and / or licenses are in place and up to date. - Acting as Developer's Environmental Representative on site and work together with the ECO, ESCO and contractor;
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. Responsibilities - project delivery and quality control for the development services as per appointment. - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period. - ensure that safe, environmentally acceptable working methods and practices are implemented, and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely. - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones.

Responsible Person(s)	Role and Responsibilities
	- ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO, ESCO.
contractor Environmental Officer (cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer, and the public. As a minimum the cEO shall meet the following criteria: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project. - Ensure all their staff are aware of the environmental requirements, conditions, and constraints with respect to all of their activities on site. - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements. - Attend the Environmental Site Meeting. - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes. - Report back formally on the completion of corrective actions. - Assist the ECO, ESCO in maintaining all the site documentation. - Prepare the site inspection reports and corrective action reports for submission to the ECO, ESCO. - Assist the ECO, ESCO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.
Environmental Site Compliance Officer (ESCO)	- A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full time basis. - Responsibilities of the ESCO include: o Be fully conversant with the BAR, the conditions of EA and the EMPr; o Be fully conversant with all relevant environmental legislation and ensure compliance thereof; o Approve method statements (co-approval with Site Manager); o Remain employed until the completion of the construction activities; and o Report to the Project Manager, including all findings identified onsite. - In addition, the ESCO will:

Responsible Person(s)	Role and Responsibilities
	○ Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; ○ Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; ○ Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and ○ Ensure that activities onsite comply with all relevant environmental legislation

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead electricity transmission and distribution infrastructure projects as a minimum requirement.

4.1. Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2. Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3. Weekly Environmental Checklist

The ECO/ESCO's are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECO/ESCO's are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4. Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record “Matters for Attention” that will be reviewed at the next meeting.

4.5. Required Method Statements

The method statement will be done in such detail that the ECO/ESCO’s are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECO/ESCO’s.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substances;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECO/ESCO's shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6. Environmental Incident Log (Diary)

The ECO/ESCO's are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECO/ESCO's. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECO/ESCO's are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in theEMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7. Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECO/ESCO's via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended/ required corrective action; and
- Date by which the corrective action to be completed.

- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions , as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8. Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECO/ESCO's. If satisfied that the corrective action has been completed, the ECO/ESCO's are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECO/ESCO's.

4.9. Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECO/ESCO's access to take photographs of all areas, activities and actions.

The ECO/ESCO's shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;

12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10. Complaints register

The ECO/ESCO's shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECO/ESCO's to take relevant photographs); and
5. Contain a copy of the ECO/ESCO's written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECO/ESCO's shall respond as described in (section 4.11) below.

4.11. Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECO/ESCO's shall:

1. Record the full detail of the complaint as described in (section 4.10) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECO/ESCO's to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12. Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECO/ESCO's shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;

2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13. Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes must be included in the EMPr file and be submitted to the CA at intervals as indicated in the EA.

An Environmental Audit Report must be prepared monthly. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECO/ESCO's shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14. Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of overhead electricity transmission and distribution infrastructure. There is a list of aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1. Environmental awareness training

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All staff must receive environmental awareness training prior to commencement of the activities;	ECO, ESCO , cEO, dEO	Hold environmental awareness training workshops	Pre-construction Construction and Operations	ECO,dEO,ESCO	Monthly and as And when required	Attendance Register and training minutes / notes for the record
The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;	Contractor	Scheduling of sufficient sessions through consultation with the ECO / cEO / dEO	Pre-construction Construction	ECO, ESCO, dEO	Monthly and as And when required	Attendance Register and training minutes / notes for the record
Refresher environmental awareness training is available as and when required;	Ceo,dEO in consultation with the ECO, ESCO	Hold refresher environmental awareness training workshops	During the construction phase	ECO, ESCO, dEO	Monthly and as And when required	Attendance Register and training minutes / notes for the record
All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;	cEO, dEO	Hold training workshops and ensure that the EA and EMPr is readily available	During the construction phase	ECO, ESCO, dEO	Monthly and as and when required	Attendance register and training minutes / notes for the record

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering.	Contractor	Develop and place appropriate posters at key locations	Pre-construction Construction	ECO, ESCO, dEO cEO	Monthly	Photographic record
– Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention.	Ceo,dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO, ESCO, dEO	Prior to the commencement t of the environmental awareness training	Environmental awareness training material requirements checklist
A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO, ESCO, cEO, dEO	Filing system including all proof of training (i.e. attendance register and training minutes	During the construction phase	ECO, ESCO, dEO	Monthly	Completed andup to date filing system with proof of training

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		/ notes for the record)				
Educate workers on the dangers of open and/or unattended fires;	cEO, dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the dangers of open and/or unattended fire	Pre-construction Construction	ECO, ESCO, dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
A staff attendance register of all staff to have received environmental awareness training must be available.	ECO , ESCO,cEO,dEO	Filing system including all proof of training (i.e. attendance register)	During the construction phase	ECO, ESCO, dEO	Monthly	Completed and up to date filing system inclusive of all attendance registers
Course material must be available and presented in appropriate languages that all staff can understand.	ECO, ESCO, cEO, dEO	Develop environmental awareness training materialin the required languages. Training material must by readily available to all staff	During the construction phase	ECO, ESCO, dEO	Monthly	Environmental awareness training material requirements checklist and the training register which must indicate the language of the training

5.2. Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;	Contractor	Development of an appropriate method statement	Pre-construction	ECO, ESCO, dEO	Once, prior to construction	Availability of the method statement which complies with the minimum requirements listed
Location of construction camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;	DPM, ESCO	Place construction camps outside of sensitive areas identified in the Basic Assessment Report	Pre-construction Construction	ECO, ESCO, dEO	Once, prior to construction	Availability of a Layout and sensitivity map indicating avoidance of sensitive areas
Sites must be located where possible on previously disturbed areas;	DPM, ESCO	Place site outside of	Pre-construction	ECO, ESCO, dEO	Once, prior to construction	Availability of a layout and

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		sensitive areas and within previously disturbed areas identified in the BA Report				sensitivity map indicating avoidance of sensitive areas and placement within disturbed areas
The camp must be fenced in accordance with ***Section5.5: Fencing and gate installation***; and	DPM	Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr	Pre-construction& Construction	ECO, ESCO, dEO	Once, prior to construction and once during the Construction of the fencing	The camp is fenced in accordance with Section 5.5of this EMPr
The use of existing accommodation for contractor staff, where possible, is encouraged.	Not applicable – the development of new accommodation is not proposed. Staff will be accommodated in neighboring Towns.					

5.3. Access restricted areas

Impact management outcome: Access to restricted areas prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development;	dEO, cEO in consultation with the ECO, ESCO	Spatially demarcate access restricted areas informed by the BA Report	Pre-construction	ECO, ESCO	Once, prior to construction	Access restricted areas are identified and provided in a spatial format
Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and	dEO, cEO in consultation with the ECO, ESCO	Erect appropriate temporary barriers around access restricted areas	At the commencement and for the duration of the construction phase	ECO, ESCO	Monthly	Access restricted areas are closed-off through temporary barriers and barriers are maintained to a sufficient standard
Unauthorised access and development related activity inside access restricted areas is prohibited.	Contractor , dEO ,cEO, ESCO	Erect appropriate temporary barriers around access restricted areas and	During the construction phase	ECO, ESCO	Monthly, and as and when required	Photographic evidence and notes of compliance that no unauthorised access or

		provide clear signage of restricted status				activities has taken place within the

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						access restricted areas

5.4. Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area;	DPM	Undertake negotiations for access to the servitude and tower positions with landowners affected by the grid connection corridor	Pre-construction Construction Operation	dEO, ESCO	Ongoing throughout construction and operation	Proof of negotiations with affected landowners and requirements for access to the servitude and tower positions in the form of written and signed agreements

An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;	DPM Contractor	Develop access agreements with the affected landowners. Ensure that	Pre-construction	dEO ECO, ESCO	Once, prior to construction	Availability of approved and signed agreement/s.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		agreements are approved and signed				
The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;	Contractor	Develop and install signs to indicate access for the project	Pre-construction	cEO,ECO, ESCO	Once, prior to construction	Photographic record of signposted access roads and GPS co-coordinates of where these are placed
All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition	Contractor	Undertake maintenance activities on Private roads Used for construction as degradation takes place	During the construction phase	cEO,ECO, ESCO	Weekly	Photographic record of the pre-construction condition and degradation of roads, and records of the implementation and effectiveness Of maintenance activities

All contractors must be made aware of all the access routes. As well as a mandatory 40km/h speed limit for construction roads.	dEO,cEO	Develop a map illustrating all access routes associated with the project and present and	Pre-construction Construction	ECO, ESCO	Once, prior to construction	Access routes map readily available

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		provide the map to all contractors				
Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;	Contractor	All access routes developed that are not in-line with the access route agreements must be closed and re-habilitated to the pre-disturbance state	Construction and Rehabilitation	cEO,ECO, ESCO	Bi-weekly (every two weeks)	Photographic record of the closure of access roads and re- vegetation
Maximum use of both existing servitudes and existing roads must be made to minimise further disturbance through the development of new roads;	Contractor (and Eskom maintenance staff where relevant to operation)	Existing access routes to be used must be specified and the development of new roads must be avoided as far as possible	Construction and operation	cEO Operation and maintenance team	Weekly	Implementation of the approved layout
In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;	dEO,cEO	Record the conditions of private roads to be used (prior to use) as per the requirements of section 4.9 and	During the construction phase	ECO, ESCO	Prior to the use of private roads	Photographic record and proof of the road conditions agreed upon with the relevant parties

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		agree on the required condition of the roads with the landowner, DPM and contractor				
Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands;	DPM and Contractor	Design access roads to follow fence lines and avoid vegetated areas	Pre-construction	ECO, ESCO	Once during the design and once prior to construction	Implementation of the approved layout
Access roads must only be developed on pre-planned and approved roads.	Contractor	Construction of access roads only on pre- planned and approved access roads	During the construction phase	ECO, ESCO, once during the design dEO	Once during the design and weekly during the construction of access roads	Implementation of the approved layout

5.5. Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible;	Contractor	Identify and inform all relevant staff of the existing gates to be used	Pre-construction& Construction	dEO	Monthly	Existing gates are utilised on a frequent basis and only limited new access gates are developed
– Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record;	ECO, ESCO	Existing and new gates will be recorded and documented as per the requirements of section 4.9	During the construction phase	ECO, ESCO	Once, when the construction of all new gates have been completed	Photographic record of the existing and new gates as per the requirements of section4.9
– All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	Contractor	Ensure all relevant gates are fitted with locks and are always locked	Construction and Operation	ECO, ESCO, monthly, Operation and maintenance team and cEO	Bi-weekly (every second week)	All gates are locked and no complaints from landowners are received in this regard
– At points where the line crosses an existing fence in which there is no suitable gate within the extent of the	dEO	Install new gates where required with the	During the construction phase	ECO, ESCO,	Once, prior to construction and during the	New gates are installed where

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;		approval of the affected landowner			construction phase, as and when required	the power line crosses fences
Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	Contractor	Install gates in a manner so that there is a gap of no more than 100mm between the bottom of the gate and the ground	During the construction phase	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;	Contractor	Implement a reinforced concrete sill beneath gates installed for jackal proofing	During the construction phase	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
Original tension must be maintained in the fence wires;	Contractor	Maintain original tension of fences through required activities	During the construction phase	ECO, ESCO	Monthly	No tension reduction on fence wires
All gates installed in electrified fencing must be re-electrified;	Contractor	Electrify gates installed in electrified fencing	During the construction phase	ECO, ESCO	Once, during the erection of the gates during the construction phase	Gates installed in electrified fencing Is electrified

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities;	Contractor	Undertake maintenance activities on Fences and barriers	During the construction phase	ECO, ESCO	Monthly	Photographic record of maintained fences and barriers
Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora;	Contractor	Fence construction camps, batching plants, hazardous storage areas and access restricted areas. Avoid sensitive flora	During the construction phase	ECO, ESCO	Once during the erection of fencing	Photographic record of fences erected
Any temporary fencing to restrict the movement of livestock must only be erected with the permission of the landowner.	dEO,cEO Contractor	Obtain written approval from the relevant landowner where temporary fencing is Required to restrict livestock movement	During the construction phase	ECO, ESCO	To be monitored as temporary fencing is required	Written approval to be provided by the dEO
All fencing must be developed of high quality material bearing the SABS mark;	Contractor	Make use of high quality materials approved by SABS	During the construction phase	cEO	To be monitored as fencing is erected during the construction phase	Use of high quality materials for fencing approved by SABS

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The use of razor wire as fencing must be avoided as far as possible;	Contractor	Razor wire must not be sourced or used for the erection of fencing	During the construction phase	ECO, ESCO	To be monitored as fencing is erected during the construction phase	Fences erected do not make use of razor wire
Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;	DSS and Contractor	Ensure fenced areas are locked as required through the implementation of a formalised process. Appoint a security company	During the construction phase	cEO	Weekly and as and when required	Fences are locked and no complaints from landowners are received. A security company is appointed
On completion of the development phase all temporary fences are to be removed;	Contractor	Removal of all temporary fences	At the end of the Construction Phase	ECO, ESCO, dEO	Once, following the completion of the construction phase	No temporary fences associated with the project is present following the completion of the construction phase
The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Contractor	Appropriate removal of all fence uprights	At the end of the Construction Phase	ECO, ESCO, dEO	Once, following the completion of the construction phase	No temporary fence uprights associated with the project is present

						following the Completion of the construction phase

5.6. Water Supply Management

Impact management outcome: Undertake responsible water usage**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;	DMP	Ensure required authorisation has been obtained, and that metering system has been installed	After Construction	ECO, ESCO	Monthly	Proof of authorisation. Monthly abstraction monitoring records
– The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and	Contractor /dEO / cEO in consultation withthe ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	Contractor /dEO / cEO in consultation with the ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation
– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	Contractor / dEO / cEO in consultation with the ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation

5.7. Storm and waste water management

Impact management outcome: Impacts to the environment caused by stormwater and wastewater discharges during construction are avoided.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager;	Contractor	Implement measures for the control and management of runoff	During the construction phase	cEO, ESCO	Weekly	No mismanagement of runoff or contaminated water due to the temporary concrete batching plant
All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	Contractor and cEO	Obtain approved absorbent material and make use of licensed waste disposal facilities for disposal of oil	During the Construction Phase	ECO, ESCO	Monthly	Availability of approved absorbent material at the construction site and proof of disposal of oil at licensed disposal facilities
Natural stormwater runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;	DPM in consultation with the ECO, ESCO	Consultation between the DPM and the ECO to determine if water can be	During the construction phase	ECO, ESCO	As and when the need arises to discharge natural stormwater runoff and	Proof of consultation between the DPM and ECO and the outcomes thereof to be provided.

		discharged			clean water	Proof of water

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge				quality testing and the results thereof.

5.8. Solid and hazardous waste management

Impact management outcome: Waste is appropriately stored, handled and safely disposed of at a recognised waste facility**.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All measures regarding waste management must be undertaken using an integrated waste management approach;	Contractor	Develop and implement a waste management plan	During the construction phase	ECO, ESCO	Monthly	Implementation of the waste management plan and proof of waste management through proof of

						responsible disposal

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	Contractor	Provision of appropriate waste collection bins strategically placed throughout the site	During the construction phase	cEO, ESCO	Weekly	Appropriate waste collection Bins are available throughout the site
A suitably positioned and clearly demarcated waste collection site must be identified and provided;	DPM and Contractor	Identify an appropriate location for the waste collection site which must be clearly demarcated through signage and temporary fencing	Design and Construction Phase	ECO, ESCO	Once, prior to the commencement t of construction	A waste collection site is appropriately placed and demarcated
The waste collection site must be maintained in a clean and orderly manner;	Contractor	Regular collection of waste and maintenance of the area must be undertaken as per the waste requirements for the project during construction	During the Construction Phase	cEO, ESCO	Weekly	The waste collection site is maintained and clean

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;	Contractor	Provide separate and marked bins for the different waste types associated with the construction phase	During the Construction Phase	cEO, ESCO	Weekly	Separate waste bins are available on site and waste generated is separated into the relevant bins
Staff must be trained in waste segregation;	cEO / dEO in consultation with the ECO, ESCO	Include waste segregation as part of the environmental awareness training material.	Pre-construction Construction	ECO, ESCO	Monthly, and as and when required	Environmental awareness training material requirements checklist
Bins must be emptied regularly;	Contractor	Bins must be emptied before reaching total capacity and on a regular basis as required for the project	During the construction phase	ECO, ESCO	Monthly	No mismanagement of bins.
General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;	Contractor	Disposal of general waste at licensed waste disposal facilities must be undertaken as per the waste Management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Hazardous waste must be disposed of at a registered waste disposal site;	Contractor	Disposal of hazardous waste at licensed waste disposal facilities must be undertaken asper the waste management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	Contractor	Obtain certificates for safe disposal of waste	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided and filed as part of thefiling system

5.9. Protection of watercourses

Impact management outcome: Pollution and contamination of the watercourse environment and erosion are prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;	Contractor	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	During the construction phase	cEO, ESCO	Weekly	No incidents reported of Spillage of Pollutants into watercourses
In the event of a spill, prompt action must be taken to clear the polluted or affected areas;	Contractor and cEO	Develop a management plan or process for implementation should a spill take place	During the construction phase	cEO, ESCO	Weekly	Feedback must be provided by the contractor in terms of how the spill was handled and photographic evidence of the feedback must be provided and kept on record
Where possible, no development equipment must traverse any seasonal or permanent wetland	cEO and Contractor	Ensure layout has been informed by the environmental sensitivities as	Construction Phase	ECO, ESCO	Once off review that the layout used is the approved one	Confirm no development equipment traverses any seasonal or

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		determined by the basic assessment and specialist studies				permanent wetland as per the authorised layout by reviewing the detailed designs (once-off confirmation).
Development of permanent watercourse crossing must only be undertaken where no alternative access to tower position is available;	cEO, Contractor	Ensure that permeant crossings (access roads) are provided for access to the grid connection corridor if no alternative crossing is available.	During the construction phase	cEO, ESCO	Weekly	Ensure that permeant crossings are Developed if there is no alternative.
There must not be any impact on the long-term morphological dynamics of watercourses;	cEO, and Contractor	Ensure that no long-term impacts of morphological dynamics of watercourses occur	During construction and operational phases	ECO, ESCO	Monthly or as and when required.	No degradation of the watercourses photographic evidence.
Upgrading of Existing crossing points must be favored over the creation of new crossings (including temporary access)"	N/A					

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– When working in or near any watercourse, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; b) Unless authorised, there should be no altering of the bed, banks, course or characteristics of a watercourse c) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; d) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and e) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.	Contractor	Activities undertaken near watercourses must be in-line with and consider the specified environmental controls	During the construction phase	ECO, ESCO	Monthly, and as and when required	No degradation of the watercourses and no incidents ofdestruction reported

5.10. Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
General:						
Indigenous vegetation which does not interfere with the development must be left undisturbed;	cEO and contractor	Demarcate areas of indigenous vegetation to be avoided before clearance is undertaken	Construction and operation (i.e. for maintenance purposes)	ECO, ESCO, monthly, Operation and maintenance team weekly	Weekly, and as and when required	No unnecessary Clearance of indigenous Vegetation is undertaken
Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;	Contractor	Demarcate areas containing protected or endangered species to be avoided by construction activities	During the Construction Phase	ECO, ESCO,monthly and Operation and maintenance team weekly	Weekly, and as and when required	No clearance of protected or endangered species other than those permitted to be removed
Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;	Relevant specialist in consultation with the Contractor	Develop and implement a Plant Search and Rescue Plan	Pre-construction & Construction	cEO, ESCO	Weekly, and as and when required	Implementation of the Plant Search and Rescue Plan and photographic evidence and notes of the implementation of the plan
Environmental Officer (EO) to provide supervision and oversight of vegetation clearing activities within sensitive areas such as near the drainage lines.	Contractor, EO, ESCO	Develop and implement a vegetation	Pre-construction & Construction	cEO, ESCO, EO	Weekly, and as and when required	No excessive clearing of vegetation

						recorded.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		clearing method statement				
Permits for removal must be obtained from the Department of Environment, Forestry and Fisheries (DEFF) prior to the cutting or clearing of the affected species, and they must be filed; and from the Department of Agriculture, Environmental Affairs, Rural Development and Land Reform for protected plants	DPM	Undertake the permitting process in order to obtain the relevant permits for the removal of protected species. Permits must be kept on file	Pre-construction	ECO, ESCO	Once, prior to the commencement of the construction phase and removal of the protected species	DEFF permits on file
The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;	ECO, ESCO	Ensure that the audit report indicates all species rescued and replanted and provides feedback in terms of compliance with the conditions of permits for replanting	During the Construction Phase and following the completion of the Construction Phase	ECO, ESCO	Once off or as and when required	ECO confirmed rescued and replanting programme implemented correctly.

Trees felled due to construction must be documented and form part of the Environmental Audit Report;	ECO, ESCO	Ensure that the audit report documents the	During the Construction Phase and following the	ECO, ESCO	Once off or as and when required	Documentation in audit report

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		details of trees felled	Completion of the Construction Phase			
Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	Contractor	Felled trees, vegetation cuttings and debris must be disposed of at a licensed waste disposal facility	During the Construction Phase	ECO, ESCO	Monthly	No felled trees, vegetation cuttings and Debris are Dumped in inappropriate locations and disposal certificates are available as proof of responsible disposal
Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator that is appropriately trained;	DPM and Contractor	A suitably qualified pest control operator must be appointed	Construction and Operation	ECO, ESCO	As and when the use of herbicides is required	Only registered pest control operators must be appointed and proof of their registration must be provided

A daily register must be kept of all relevant details of herbicide usage;	Contractor	Develop a daily register for the documentation of the details of herbicide usage	During the construction phase	ECO, ESCO	Monthly	Daily register provided by the pest control operator

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to **Section 5.3: Access restricted areas**.	Contractor in consultation with the cEO	Spatially demarcate protected species and sensitive vegetation and implement appropriate fencing where required as per section 5.3	During the construction phase	ECO, ESCO	Once, during the undertaking of the demarcation of the areas and the erection of the fencing	Demarcation and fencing is undertaken in-line with the requirements of section 5.3
Servitude:						
Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager;	Contractor in consultation with the DPM	Identify areas of vegetation not to be trimmed.	Construction and Operation	ECO, ESCO, Operation and maintenance team	Monthly	An indication of the areas where vegetation has Not been Trimmed or where vegetation has been removed from access roads must be provided.
Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the landowner and the EA holder;	Contractor	Clearing for access must be undertaken as per the requirements provided by the	During the construction phase	ECO, ESCO	Monthly, and as and when required	Proof must be provided that only agreed Upon areas Have been cleared

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		landowner and the EA holder				
Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognized waste disposal facility;	Contractor	Undertake removal of alien invasive vegetation in accordance with the relevant guideline relevant to the project area and ensure the vegetation is disposed of at a licensed waste disposal facility	Construction and Operation	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Proof must be provided that alien invasive vegetation has been cleared in accordance to the relevant guideline and that the vegetation was disposed of at a licensed waste disposal facility
Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280;	Contractor	Develop a procedure for the trimming of vegetation in terms of the listed requirements	Construction and operation	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Proof must be provided that vegetation is trimmed in accordance with the listed requirements
Debris resulting from clearing and pruning must be disposed of at a recognized waste disposal facility, unless the landowners wish to retain the cut vegetation;	Contractor	Dispose of the debris in accordance with the waste	Construction and operation	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Proof must be provided that the debris has been disposed of at a licensed

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		management plan				waste disposal facility
In the case of the development of new overhead transmission and distribution infrastructures, a one meter "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing that limit impact to the environment must always be considered.	Contractor	Develop a procedure for the cutting of vegetation for stringing purposes	Pre-construction& Construction	ECO, ESCO,	Once, prior to the commencement of construction	Proof of implementation of the procedure for the cutting of vegetation for stringing purposes

5.11. Protection of fauna

Impact management outcome: Minimise disturbance to fauna and avifauna.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;	dEO,cEO Contractor	Develop a procedure for dealing with livestock within the affected properties	Pre-construction and during the construction phase	ECO, ESCO	Once, prior to the commencement of construction and as and when required during the construction phase	Written consent provided by the landowner and proof of representation of the landowner during interference

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The breeding sites of raptors and other wild bird species must be taken into consideration during the planning of the development programme;	dEO , cEO in consultation with the Contractor	Ensure that the planning and development programme considers breeding sites for wild bird species	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	The planning and development programme includes the consideration of breeding sites for wild bird species
Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present;	dEO , cEO in consultation with the Contractor	Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledglings	During the Construction Phase Operation Phase	ECO, ESCO, monthly, cEO and Operation and maintenance team weekly	Weekly, and as when required during the construction. Monthly, and as and when required during operation	Photographic record of intact breeding sites
Nesting sites on existing parallel lines must be documented;	dEO , cEO in consultation with the ECO, ESCO	Walk-downs of the existing lines located parallel to the project must be undertaken and nests and the details thereof documented	During the Construction Phase Operation Phase	ECO, ESCO, Operation and maintenance team	Quarterly, and as and when required	Details of walk-downs undertaken must be noted and kept on file and photographic records of nesting sites must be kept
Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;	dEO , cEO in consultation with the Contractor	All mitigation measures recommended by the avifauna	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Monthly during construction and monthly during operation	Photographic record of compliance and successful implementation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		specialist must be implemented				of the recommended measures
Bird guards and diverters must be installed on the newline as per the recommendations of the specialist;	dEO, cEO in consultation with the Contractor	Recommendations made by the specialist for the installation of bird guards and diverters must be adhered to and implemented as appropriate. Bird guards and diverters must be maintained	During the Construction Phase Operation Phase	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Photographic record of implementation and maintenance of bird guards and diverters
No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;	dEO, cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of poaching is reported

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No deliberate or intentional killing of fauna is allowed;	dEO,cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of deliberate or intentional killings reported
In areas where snakes are abundant, snake deterrents are to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages	dEO,cEO in consultation with the Contractor	Implement and maintain snake deterrents on pylons in areas where snakes are abundant	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Once, during the construction of the pylons and as and when required. Monthly during operation	Photographic record of the implementation and maintenance ofsnake deterrents
No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.	DPM in consultation with the dEO	Undertake a permitting process to obtain the required permits	Pre-construction	ECO, ESCO	Once, prior to the commencement t of construction and as and when required	Permits for removal and/relocation must be kept on file and be readily available

5.12. Protection of heritage resources

Impact management outcome: Minimise impact to heritage resources.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in Section 5.3: Access restricted areas;	DPM and a suitably qualified specialist dEO, cEO in consultation with the Contractor and ECO	Undertake a Heritage Walk-through Survey Spatially identify and demarcate areas of heritage significance as per the Heritage Impact Assessment and the Heritage Walk-through Report and as per the requirements of section 5.3	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Proof of Avoidance of sensitive heritage features through details of avoidance and photographic records
Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;	dEO (in consultation with specialists if/as required).	Ensure construction staff are adequately informed (via	During the Construction Phase	ECO, ESCO	Monthly, or as required	Environmental awareness training includes measures

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		environmental awareness training) to carry out monitoring of excavations for fossils, artefacts and important heritage material				relating to monitoring for chance finds
All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.	dEO, cEO in consultation with the Contractor and ECO, ESCO	Develop and implement procedures for situations where human remains, archaeological, palaeontolgoical or historical material are uncovered	During the Construction Phase	ECO, ESCO	As and when required	Proof of work ceased and the required procedures followed in cases where material is discovered.

5.13. Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO in consultation with the Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction Construction	cEO, ESCO	Once, prior to the commencement of construction and weekly during the construction phase	Compliance with the Emergency Preparedness, Response and Fire Management Plan
All unattended open excavations must be adequately fenced or demarcated;	Contractor	Ensure that all excavations undertaken is fenced and demarcated within a reasonable timeframe and in instances where excavations will be open for long-periods of time	During the Construction Phase	cEO, ESCO	Weekly	Excavations are fenced where required and photographic proof can be provided
Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;	Contractor	All staff must be easily identifiable and the climbing of towers and scaffolding must only be undertaken by	During the construction phase	ECO, ESCO	Monthly, and as and when required	No incidents of unauthorised climbing is reported

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		authorised personnel as managed by the Contractor				
Ensure structures vulnerable to high winds are secured;	Contractor	Ensure that sufficient stabilisation measures are implemented to secure structures vulnerable to high winds	During the construction phase	cEO	Weekly, and as and when required	No incidents of unstable structures due to high winds is reported
Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	cEO	Compile and regularly update as incidents and complaints are submitted from the public and indicate the actions taken to resolve the complaint	During the construction phase	ECO, ESCO	Monthly, and as and when required	The incidents and complaints register is complete and provides all the required details

5.14. Sanitation

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Mobile chemical toilets are installed onsite if no other ablution facilities are available;	Contractor	Mobile chemical toilets must be placed appropriately and in areas that avoid environmental sensitivities	During the Construction Phase	cEO	Weekly	Mobile toilets are installed and avoid environmental sensitivities
The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;	Contractor in consultation with the cEO	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement.	Pe-construction& Construction	ECO, ESCO	Monthly, and as and when required	No evidence of non-compliance identified
– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body;	Contractor in consultation with the cEO	The installation of the toilets by the Contractor must be as per	During the Construction Phase	cEO, ESCO, ECO	Weekly	No evidence of non-compliance identified

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;		the listed requirements				
A copy of the waste disposal certificates must be maintained.	Contractor	Certificates obtained from the licensed waste disposal facility with the emptying of the toilets must be kept on file	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Certificates for waste disposal from the licensed waste disposal facility available on site

5.15. Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Undertake environmentally friendly pest control in the camp area;	Contractor	Only environmentally-friendly pest control must be used, when required	During the Construction Phase	ECO, ESCO	As and when pest control is required for the project	Contractor to provide proof of pest control used being environmentally-friendly
Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/ AIDS;	cEO, Contractor in consultation with the ECO, ESCO	The effects of sexually transmitted diseases and HIV/ AIDS must be covered in the Environmental Awareness Training	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement t of construction and monthly during construction	Environmental awareness training material requirements checklist
The Contractor must ensure that information posters on HIV/ AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/ AIDS	During the Construction Phase	cEO	Weekly	Photographic evidence of poster placement
Information and education relating to sexually transmitted diseases to be made available to both	cEO, Contractor in	Information and education of sexually	Pre-construction& Construction	ECO, ESCO	Monthly	Environmental awareness training material

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
construction workers and local community, where applicable;	consultation with the ECO, ESCO	transmitted diseases must be covered in the Environmental Awareness Training.				requirements checklist
Free condoms must be made available to all staff onsite at central points;	Contractor	Placement of free condoms in mobile toilets and at the construction camps	During the Construction Phase	ECO, ESCO	Monthly	Proof of placement of free condoms by the contractor to be provided
Medical support must be made available;	dEO,cEO in consultation with the Contractor	Ensure that designated personnel with first aid training are available on site and that first aid kits to provide medical support is readily available	Construction and Operations	ECO, ESCO	Monthly	Check the availability of first aid trained personnel and medical kits (including if these are complete in terms of supplies)
Provide access to Voluntary HIV Testing and Counselling Services.	Contractor	Compile a HIV testing schedule and provide counselling services where required	During the Construction Phase	ECO, ESCO	Quarterly, and as and when required	Voluntary testing schedules and proof of counselling(where undertaken)

5.16. Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Compile an Emergency Response Action Plan (ERAP)prior to the commencement of the proposed project;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan compiled
The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project which covers accidents, potential spillages and fires	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan includes required specifications

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All staff must be made aware of emergency procedures as part of environmental awareness training;	cEO,dEO in consultation with the ECO	Develop environmental awareness training material which covers the relevant emergency procedures	Pre-construction	ECO, ESCO	Prior to the commencement t of the environmental awareness training	Environmental awareness training material requirements checklist
The relevant local authority must be made aware of a fire as soon as it starts;	Contractor in consultation with the ECO, ESCO	Develop and include a procedure in the Emergency Preparedness, Response and Fire Management Plan for the event of a fire and the procedure to be followed for informing the local authority	Construction	ECO, ESCO	As and when a fire occurs	The local authority was informed as per the relevant procedure setout in the Emergency Preparedness, Response and Fire Management Plan
In the event of emergency, necessary mitigation measures to contain the spill or leak must be implemented (see **Hazardous Substances section 5.17**).	Contractor	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction and Operations	ECO, ESCO	As and when a spill or leak occurs	The mitigation measures included under Section 5.17 have been adhered to

5.17. Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	cEO in consultation with the Contractor	Develop a strategy of how hazardous substances can be and should be minimised	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly During the construction phase	Contractor to provide evidence of substances used for proof of compliance
All hazardous substances must be stored in suitable containers as defined in the Method Statement;	Contractor	Develop a Method Statement for the storage of hazardous substances in	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement t of construction and monthly during the	Photographic proof that hazardous substances are stored in suitable containers as

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		suitable containers			construction phase	per the requirements of the relevant Method Statements
Containers must be clearly marked to indicate contents, quantities and safety requirements;	Contractor	Where hazardous waste is stored these must be clearly marked indicating the required details of the contents	During the Construction Phase	ECO, ESCO	Monthly	Photographic proof that containers are marked as per the requirements
All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;	Contractor	Ensure that storage areas are sufficiently bunded which are of sufficient capacity to contain a spill / leak from the stored containers	During the Construction Phase	ECO, ESCO	Monthly during the Construction Phase	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity tocontain a spill / leak from the stored containers
Bunded areas to be suitably lined with a SABS approved liner;	Contractor	Ensure that bunded storage areas are suitably lined	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase	Photographic proof that bunded storage areas are suitably lined

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;	cEO, Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS) control sheet specific to the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complete and up to date control sheet provided by the Contractor
All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	cEO, Contractor	Keep a record of all hazardous chemicals and the respective MSDS	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Record of hazardous chemicals and the respective MSDS
All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;	cEO,Contractor	Provide training for personnel working with HCS	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	Record of training provided to personnel working with HCS
Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;	cEO,Contractor	Develop environmental awareness training material which covers the relevant impacts and safety measures.	Pre-construction& Construction	ECO, ESCO	Prior to the commencement of the environmental awareness training and monthly during the construction phase for personal	Environmental awareness training material requirements checklist and all relevant personnel have undergone appropriate training

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous substances and materials			protective equipment	have access to personal protective equipment
The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	Contractor	Appropriate storage facilities must be constructed or obtained for the storing of diesel, other liquid fuel, oil and hydraulic fluid	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage tanks for the project are appropriate and no incidents are reported in this regard
The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crestof the bund and the volume inside the bund must be130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);	Contractor	Appropriate storage facilities must be constructed or obtained for tanks as per the requirements listed	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage areas for the tanks/ bowsers for the project are appropriate and no incidents are reported in this regard

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The floor of the bund must be sloped, draining to an oil separator;	Contractor	Appropriate storage facilities must be constructed as per the requirements listed	During the Construction Phase	ECO, ESCO	Once, during construction	Bunded storage areas are constructed according to the requirements
Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;	Contractor	Appropriately constructed refueling facility must be developed as per the requirements. Drip trays must be provided for use	During the Construction Phase	ECO, ESCO, cEO	Monthly Weekly	Soils at the refueling facility are protected as required and drip trays are provided and used
All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that empty dirty drums are stored appropriately as per the requirements	During the Construction Phase	ECO, ESCO,cEO	Monthly Weekly	Drip trays or bunded areas are used for the storage of dirty drums

▯ No unauthorised access into the hazardous substances storage areas must be permitted;	Contractor	Ensure through the implementation of procedures that no unauthorised access is	During the Construction Phase	ECO, ESCO	Monthly	Proof of the implementation of the relevant procedure must be provided by the contractor

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		undertaken into the storage areas				
▯ No smoking must be allowed within the vicinity of the hazardous storage areas;	Contractor	Inform all employees of the requirement and develop and place relevant signage in the relevant areas	During the Construction Phase	ECO, ESCO,cEO	Monthly Weekly	Photographic record of the signage placed must be provided
▯ Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting equipment	During the Construction Phase	ECO, ESCO	Monthly	Adequate fire-fighting equipment is available and has been serviced

Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used;	Contractor	Provide a mobile refueling unit as well as suitable ground protection, where required	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	A mobile refueling unit and suitable ground protection is available for use
An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;	Contractor	Provide an appropriate spill kit for the project for the use of hazardous substances	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The responsible operator must have the required training to make use of the spill kit in emergency situations;	cEO and Contractor	Provide training on the use of spill kits to the relevant employees	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Proof of training to be provided by the contractor
An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;	cEO and Contractor	Provide an appropriate number of spill kits in relevant areas	During the Construction Phase	ECO, ESCO	Monthly	Proof of appropriate number of spill kits in appropriate areas to be provided by the contractor

In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and waste water management and 5.8 for solid and hazardous waste management.	cEO and Contractor	Storage and disposal of contaminated soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and 5.8 of this EMPr	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Proof of storage and disposal in terms of the National Environmental Management: Waste Act must be provided. Certificates of Disposal at licensed waste disposal facilities must be provided

5.18. Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;	Contractor	Demarcate specific areas for the maintenance of vehicles and equipment	During the Construction Phase	ECO, ESCO	Monthly	A dedicated area for the maintenance of vehicles and machinery is used.

During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil.	Contractor	Ensure that a drip tray is available for an emergency repairs required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide evidence of drip tray use for emergency repairs
Leaking equipment must be repaired immediately orbe removed from site to facilitate repair;	Contractor	Ensure that where leaking equipment is identified it is repaired immediately or removed from site for repairs	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide details of equipment repaired or removed from site
Workshop areas must be monitored for oil and fuel spills;	cEO	Undertake regular inspections of the workshop areas for oil and fuel spills and keep an updated register of inspection on site	During the Construction Phase	ECO, ESCO	Monthly	Register of inspection
Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	Contractor	Provide an appropriate spill kit for the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use
The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;	Contractor	Ensure that the workshop area is sufficiently bunded in accordance with the required specification	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase and as and when required	Workshop area is bunded in accordance with the required specification

Water drainage from the workshop must be contained and managed in accordance with Section 5.7: storm and waste water management.	Contractor	Ensure that water drainage from workshop area is managed as per the requirements of section 5.7	During the Construction Phase	ECO, ESCO	Monthly	Workshop drainage is Managed in accordance with the requirements

5.19. Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Concrete mixing must be carried out on an impermeable surface;	Contractor	Provide impermeable surface for the mixing of concrete	During the Construction Phase	cEO, ESCO	Weekly	No concrete mixing is Undertaken on open ground
Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	Contractor	Implement measures for the control and management of cement laden water	During the construction phase	cEO, ESCO	Weekly	No mismanagement of laden water due to the temporary concrete batching plant

Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	Contractor	Implement measures for the control and management of dirty water to prevent soil and groundwater contamination	During the construction phase	cEO, ESCO	Weekly	No mismanagement of dirty water due to the temporary concrete batching plant and no/minimal soil and groundwater contamination

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;	Contractor	Demarcate and provide a storage area for bagged cement in-line with the listed requirements	During the Construction Phase	cEO, ESCO	Weekly	Photographic proof of bagged cement stored within the demarcated area
A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provide a washout facility for the washing of associated equipment. Enforce limitations on water use for washing of equipment	During the Construction Phase	cEO, ESCO	Weekly	No cement laden water is released into the environment. Only minimal water is used for washing

Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licensed disposal facility;	Contractor	Make use of hardened concrete where possible or Dispose of concrete in a suitable manner	During the Construction Phase	ECO, ESCO	Monthly	Certificates of disposal of concrete at licensed waste disposal facility
Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;	Contractor	Bind empty cement bags and temporarily store it in an appropriate area on site	During the Construction Phase	ECO, ESCO	Monthly	Proof of binding of empty cement bags and storage in an appropriate are on site to be provided by the Contractor
Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions)	Contractor	Ensure that sand and aggregates are kept damp or otherwise protected from dust generation	During the Construction Phase	ECO, ESCO	Monthly	Proof of Damping (or alternative dust suppression) of sand and aggregates must be provided by the Contractor
Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility;	Contractor	Ensure that all excess sand, stone and cement is removed or reused	At the completion of the Construction Phase	ECO, ESCO	Once, with the completion of construction	Certificates for the disposal of sand, stone and cement at licensed waste disposal facilities or proof of reuse must be provided
Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.	Contractor	Erect Temporary fencing	During the construction phase	cEO	Weekly	Temporary fencing around batching plants

5.20. Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;	Contractor	Apply appropriate dust suppressant. No potable water may be used.	During the Construction Phase	cEO, ESCO, ECO	Weekly	Contractor to provide proof of use of appropriate dust suppressants
Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible;	Contractor	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	During the Construction Phase and Rehabilitation	cEO, ESCO	Weekly	Plan for implementation must be provided by the Contractor
Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	Contractor	Ensure that specific limitations are placed on the transport and Handling of erodible materials during high wind conditions or when a visible	During the Construction Phase	cEO, ESCO	Bi-weekly (every second week)	No complaints submitted in this regard

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		dust plume is present				
During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;	ECO	ECO to provide adequate recommendations	During the Construction Phase	Not Applicable		
Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor	Place soil stockpiles in areas less affected by wind	During the Construction Phase	cEO, andESCO	Bi-weekly (every second week) Monthly	Soil stockpiles are adequately protected from wind erosion
Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;	Contractor in consultation with the ECO, ESCO	Contractor to implement erosion control measures as recommended and agreed with the ECO	During the Construction Phase	cEO, ESCO	Weekly, until erosion is no longer a problem	Recommendations made by the ECO have been implemented by the Contractor
Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;	cEO,dEO,contractor	Inform all drivers of speed limits and place appropriate signage along the relevant roads	During the Construction Phase Operation Phase	ECO, ESCO Operation and Maintenance team	Monthly	No complaints from community members are submitted

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;	Contractor	Ensure that straw stabilisation is undertaken asper the listed requirements	During the Construction Phase	ECO, ESCO	Monthly	Photographic record of all straw stabilisation undertaken
▯ For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	Contractor	Appropriate dust suppressant measures are implemented	During the Construction Phase	cEO, ESCO	Weekly	Photographic record of measures being implemented and the results thereof

5.21. Blasting

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Any blasting activity must be conducted by a suitably licensed blasting contractor; and	N/A					
▯ Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	N/A					

5.22. Noise

Impact Management outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Contractor must keep noise level within acceptable limits. Restrict the use of sound amplification equipment for communication and emergency only;	Contractor	Ensure that noise limits do not exceed acceptable limits and avoid the use of amplification communication	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. No amplification equipment is used.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor	Provide and implement silencing technology	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. Silencing technology is utilised.
Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;	cEO	Update complaints register. Provide daily transport to and from site for employees	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complaints register provided by the cEO and proof of transportation services provided

Develop a Code of Conduct for the construction phase in terms of behavior of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	cEO and Contractor in consultation with the ECO, ESCO	Compile a Code of Conduct for staff. Appropriate operating hours must be identified for the project.	Pre-construction and Construction	ECO, ESCO	Once, prior to the commencement of construction	No complaints registered in this regard.

5.23. Fire prevention

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Designate smoking areas where the fire hazard could be regarded as insignificant;	cEO, Contractor	Identify and demarcate through signage designated smoking areas	Pre-construction& Construction	ECO, ESCO	Monthly	Photographic record of designated smoking area
Firefighting equipment must be available on all vehicles located on site;	cEO,dEO in consultation with the Contractor	Provide all vehicles with firefighting equipment	Construction	ECO, ESCO	Monthly	All vehicles are fitted with firefighting equipment and the details thereof are provided by the cEO

The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO in consultation with the ECO, ESCO	Undertake formal consultation to inform the local FPA of the associated construction activities	Pre-construction	ECO, ESCO	Once, during the commencement of the Construction Phase	Proof of consultation with the FPA
Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;	dEO, cEO, Contractor in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the contact numbers for the FPA and emergency services. Place the contact numbers for the FPA and emergency services at a visible and central location	Pre-construction& Construction	ECO, ESCO	Prior to the commencement of the environmental awareness training and once during the construction phase	Environmental awareness training material requirements checklist and photographic record of contact numbers on display
Two-way swop of contact details between ECO and FPA.	ECO, ESCO	Consultation between the ECO and FPA in order to exchange contact details	Pre-construction	Not Applicable		

5.24. Stockpiling and stockpile areas

Impact management outcome: Erosion and sedimentation as a result of stockpiling are reduced.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, wetlands and water bodies;	Contractor	Identify and demarcate an appropriate location for the storage of excavated materials	Pre-construction& Construction	ECO, ESCO	Monthly	Excavated material is not stored within sensitive environmental areas
▯ All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;	Contractor	Implement appropriate and sufficient maintenance on stockpiled material regularly	During the Construction Phase	cEO ECO, ESCO	Bi-weekly (every second month) Monthly	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
▯ Topsoil stockpiles must not exceed 2 m in height;	Contractor	Enforce limitations for the height of topsoil stockpiles	During the Construction Phase	cEO ECO, ESCO	Bi-weekly (every second month) Monthly	Topsoil stockpiles do not exceed 2m in height
▯ During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	Contractor	Appropriate material must be provided in order to cover stockpiles when required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of appropriate material to

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**

						cover stockpiles when required
Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor	Sandbags must be provided in order to prevent erosion of stockpiled materials	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of sandbags to prevent erosion of stockpiled materials

5.25. Finalising tower positions

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No vegetation clearing must occur during survey and pegging operations;	Contractor	Implement restrictions in terms of vegetation clearing during the survey and pegging operations	Pre- construction	cEO, ESCO	Weekly	Contractor to provide photographic proof that no vegetation has been cleared

No new access roads must be developed to facilitate access for survey and pegging purposes;	Contractor	Restrict the development of new access roads for survey and pegging purposes	Pre- construction	cEO	Weekly	Contractor to provide photographic proof that no new roads have been developed
Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas;	DPM, Suitably Qualified Specialist and Contractor	Undertake consultation between the relevant responsible people and finalise the tower positions for the power line	Pre- construction	ECO, ESCO	Once the final tower positions have been finalised and agreed upon	Provision of final tower positions to the ECO
The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.	Surveyor in consultation with the ECO, ESCO	Undertake consultation between the surveyor and the ECO	Pre- construction	cEO, ESCO, ECO	Weekly	Consultation with the ECO regarding the distribution of pegs.

5.26. Excavation and Installation of foundations

Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal site, if not used for backfilling purposes;	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	ECO, ESCO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility
Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction and Rehabilitation	ECO, ESCO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor
Management of equipment for excavation purposes must be undertaken in accordance with Section 5.18: Workshop equipment maintenance and storage; and	Contractor	Undertake the management of equipment for excavation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18

▯ Hazardous substances spills from equipment must be managed in accordance with Section 5.17: Hazardous substances.	Contractor	Undertake the management of hazardous substances spills from equipment as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances spills from equipment is undertaken in line with the requirements of section 5.17
▯ Batching of cement to be undertaken in accordance with Section 5.19: Batching plants;	Contractor	Ensure correct batching of cement	During the construction phase	cEO, ESCO	Weekly	Measures in place to ensure the batching of cement is done in accordance with Section 5.19: Batching plants
▯ Residual cement must be disposed of in accordance with Section 5.8: Solid and hazardous waste management.	Contractor	Undertake the disposal of residual cement as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The disposal of residual cement is undertaken in line with section5.8.

5.27. Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Prior to erection, assembled towers and tower sections must be stored on elevated surfaces (suggest wooden blocks) to minimise damage to the underlying vegetation;	Contractor	Provide the necessary materials for the elevated surface, where towers are to be placed on indigenous vegetation	During the Construction Phase	cEO,	Weekly	Implementation of elevated surface and photographic record thereof
In sensitive areas, tower assembly must take place off-site or away from sensitive positions;	Contractor in consultation with the cEO and the ECO, ESCO	Identify sensitive areas to be avoided by tower assembly and ensure that the areas are not infringed upon	Pre-construction& Construction	cEO, ESCO	Weekly	Tower assembly is undertaken outside of sensitive areas
The crane used for tower assembly must be operated in a manner which minimises impact to the environment;	Contractor in consultation with the cEO and the ECO, ESCO	Ensure that no impact to the environment is imposed during the operation of the crane	Pre-construction& Construction	cEO, ESCO	Weekly	No environmental damages incurred as a result of the crane.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The number of crane trips to each site must be minimised;	Contractor in consultation with the cEO and the ECO, ESCO	Ensure that the utilisation of the crane is maximised when on site.	Pre-construction& Construction	cEO	Weekly	Few crane trips to each site observed.
Wheeled cranes must be utilised in preference to tracked cranes. However, Rocky terrain may require tracked cranes in the project site.	Contractor	Ensure wheeled cranes are utilised, where practical.	Pre-construction& Construction	cEO	Weekly	Wheeled cranes observed on site.
Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact;	Contractor	Contractor to undertaken erecting of towers in an environmentally acceptable manner	During the Construction Phase	ECO, ESCO	Monthly	No unacceptable environmental impacts occur with the erecting of the towers
Access to tower positions to be undertaken in accordance with access requirements specified in **Section 5.4: Access Roads**;	Contractor	Undertake access to tower positions as per the requirements of section 5.4	During the Construction Phase	ECO, ESCO	Monthly	Access to tower positions are undertaken asper the requirements of section 5.4
Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in **Section 5.10: Vegetation clearing**;	Contractor	Undertake vegetation clearance as per the requirements of section 5.10	During the Construction Phase	cEO, ESCO	Weekly	Vegetation clearance is undertaken as per the requirements of section 5.10

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor;	Contractor in consultation with the DPM and DSS	Written permission for levelling at tower sites, if required, must be obtained from the DPM and DSS prior to the undertaking of any levelling activities	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Written permission from the DPM and DSS provided to the Contractor
Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites;	Contractor	Implement appropriate measures to ensure that topsoil is removed from subsoil material	Construction and Rehabilitation	cEO	Weekly, and as and when required	Proof of appropriate measures implemented must be provided by the Contractor
Topsoil must be stored in heaps not higher than 2m to prevent destruction of the seed bank within the topsoil;	Contractor	Implement the listed requirements for the storage of topsoil	During the Construction Phase	cEO, ESCO	Weekly	Topsoil is stored as per the listed requirements
Excavated slopes must be no greater that 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes;	Contractor	Implement the listed requirements for the excavation of slopes	During the Construction Phase	cEO, ESCO	Weekly	Excavation of Slopes is undertaken as per the listed requirements

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed;	cEO, dEO, contractor	Ensure all pieces greater than 150 mm falling beyond the Working Area, are collected and removed and implement measures to try and minimise fly rock from blasting activity.	Pre-Construction Phase	ECO,EO, ESCO	During blasting activities	ECO/EO to confirm necessary measures have been undertaken to minimise fly rock from blasting activity and that no pieces greater than 150 mm are beyond the working area.
▯ Only existing disturbed areas are utilised as spoil areas;	Contractor in consultation with the ECO, ESCO	Identify, demarcate and use existing disturbed areas for spoil areas	Pre-construction& Construction	cEO, ESCO, ECO	Weekly	Only identified disturbed areas are used as spoil areas
▯ Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum;	Not Applicable					
▯ Surface water runoff is appropriately channelled through or around spoil areas;	DPM and Contractor	Design and implement appropriate surface runoff measures for spoil areas	Pre-construction& Construction	ECO, ESCO	Once, during the construction of the surface runoff measures	Implementation of surface runoff measures through and/or around spoil areas

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that;	Contractor	Develop and implement backfilling procedures which ensures that topsoil is not placed at the bottom of foundations.	Pre-construction& Construction	cEO	Weekly	Backfilling operations are undertaken as per the procedures developed
The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation;	Contractor	Rehabilitation of the surface spoil must be undertaken in accordance with the requirements of section 5.29	Rehabilitation	cEO, ESCO, ECO	Weekly	Rehabilitation of the surface spoilis undertaken as per the requirements of section 5.29
The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken, when possible, at the beginning of the dry season.	Contractor	Ensure that topsoil is spread evenly and compacted appropriately. This must be undertaken outside of the start of the dry season, where possible	Rehabilitation	cEO, ESCO	Weekly	Proof that topsoil has been spread evenly and compacted correctly must be provided by the Contractor/ cEO. Proof that the activities were undertaken outside of the start of the dry

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						season (or motivation as to why this was not possible) must be provided by the Contractor

5.28. Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid Access restricted areas and other sensitive areas;	Contractor in consultation with the ECO	Identify and demarcate areas appropriate for the siting of winch and tensioner stations which does not infringe on access restricted areas	Pre-construction& Construction	cEO, ESCO, ECO	Weekly	Winch and tensioner stations are located outside of identified sensitive areas

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		or environmentally sensitive areas				
The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks;	Contractor	Provide sufficient drip trays	During the Construction Phase	cEO	Weekly	Sufficient drip trays are available for the winch and tensioner stations and no spills occur
Refueling of the winch and tensioner stations must be undertaken in accordance with **Section 5.17: Hazardous substances;**	Contractor	The refueling of winch and tensioner stations must be undertaken as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	The refueling of winch and tensioner stations is undertaken as Per the requirements of section 5.17
In the case of the development of overhead transmission and distribution infrastructure, a one meter "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and handheld implements, with vegetation being cut off at ground level. No tracked or wheeled mechanized equipment must be used;	Contractor	Develop and implement procedures for implementation for vegetation clearing during stringing in line with the specification.	Pre-construction& Construction	ECO, ESCO and cEO weekly during stringing	Once, prior to the commencement of construction and weekly during stringing	Implementation of the procedures put in place and proof thereof from the Contractor

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter;	Contractor	Identify and implement the stringing method with the least environmental impact	During the Construction Phase	cEO	Weekly	Implementation of identified method of stringing with the least environmental impact
Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing;	Contractor	Identify prior to construction areas where protection measures will be required during stringing. Where access is to be restricted timeous written notice must be provided to the affected parties	Pre-construction& Construction	ECO, ESCO	Monthly, and as and when required	Proof of implementation of protection measures and proof of written notice to affected parties must be provided by the Contractor

No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing;	Contractor in consultation with the cEO, DPM and dEO	Avoid the damaging or disturbance of existing services. Where services will be disrupted timeous notice must be provided to the affected parties	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written notice to affected parties must be provided by the Contractor
Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner;	Contractor in consultation with the cEO, DPM and dEO	Agree crop protection requirements with landowner.	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written notice to affected parties must be provided by the Contractor
Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.	Contractor in consultation with the cEO, DPM and dEO	Agree required actions with landowner.	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written notice to affected parties must be provided by the Contractor

5.29. Socio-economic

Impact management outcome: Socio-economic development is enhanced.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Develop and implement communication strategies to facilitate public participation;	dEO / cEO	Identify and implement appropriate strategies for communication with the communities through consideration of the community needs	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction	Communication is undertaken as per the identified strategies and no complaints are submitted regarding communication
Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;	Contractor	Development and implement Grievance Mechanism which considers the community needs and provides procedures for conflict resolution	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Conflict resolution is undertaken in line with the requirements of the Grievance Mechanism. No complaints on conflict resolution is submitted by the community

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Sustain continuous communication and liaison with neighboring owners and residents	Contractor	Development and implement and Grievance Mechanism provides procedures for communication / liaison with neighboring landowners and residents	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Communication / liaison with neighboring landowners and residents are undertaken in line with the requirements of the Grievance Mechanism. No complaints on communication with neighboring landowners and residents is submitted
Create work and training opportunities for local stakeholders; and	Contractor	Develop and implement a "locals first" policy for the provision of employment opportunities	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	The "locals first" policy is considered in terms of the employment and training opportunities

Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	Contractor	Ensure no workers are permitted to stay over night on the site	Construction	ECO, ESCO	Throughout construction	No workers remaining on site over night

5.30. Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in **sections 5.17: management of hazardous substances** and **5.18 workshop, equipment maintenance and storage**;	Contractor	Regular emptying of the bunds must be undertaken. This must be undertaken as per the requirements listed in sections 5.17 and 5.18	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirements listed under sections 5.17 and 5.18
Hazardous storage areas must be well ventilated;	Contractor	Install appropriate ventilation in all hazardous storage areas	During the construction phase	ECO, ESCO	Prior to site closure for more than 05 days	Effective ventilation is installed in hazardous storage areas

Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor,cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure service records and kept up to date and filed	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records
Emergency and contact details must be displayed;	Contractor, cEO	Place emergency and contact details which are readily available and easily accessible	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Photographic proof of contact details on display
Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;	Contractor in consultation with the ECO, ESCO	Hold a workshop with all security personnel to provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel	Pre-construction& construction	ECO, ESCO	Prior to site closure for more than 05 days	Proof of the workshop held must be kept on file by the contractor.

Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;	Contractor	Regular checks of night hazards must be undertaken	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of checks of night hazards must be provided by the contractor

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO / Contractor in consultation with the ECO, ESCO	Identify any potential fire hazards and notify the relevant local authority	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of notification of the fire hazards to the local authority must be provided by the Contractor
Structures vulnerable to high winds must be secured;	Contractor	Ensure structures vulnerable to wind are secure prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Structures vulnerable to wind are secured prior to site closure
Wind and dust mitigation must be implemented;	Contractor	Implement wind and dust mitigation prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Wind and dust mitigation is implemented prior to site closure
Cement and materials stores must have been secured;	Contractor	Ensure cement and material stores are secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Cement and material stores are secured prior to site closure

Toilets must have been emptied and secured;	Contractor	Ensure toilets are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Toilets are emptied and secured prior to site closure
Refuse bins must have been emptied and secured;	Contractor	Ensure refuse bins are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	refuse bins are emptied and secured prior to site closure
Drip trays must have been emptied and secured.	Contractor	Ensure drip trays are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Drip trays are emptied and secured prior to site closure

5.31. Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**

All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided;	Contractor	Develop and implement a rehabilitation plan for the rehabilitation of all disturbed areas. Dispose of all spoil and waste at a licensed waste disposal facility	Pre-construction& Rehabilitation	cEO, ESCO	Weekly	Rehabilitation of the disturbed areas is undertaken as per the rehabilitation plan. All certificates of waste disposal at licensed facilities are available.
All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether contouring is required	Rehabilitation	cEO	Weekly	All slopes are assessed and contoured as required
All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether terracing is required	Rehabilitation	cEO	Weekly	All slopes are assessed and terraced as required
Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;	Contractor	Ensure all berms have a slope of 1:4 and is replanted with indigenous species and grasses	Rehabilitation	cEO, ESCO	Weekly	All berms have a slope of 1:4 and is replanted with indigenous species and grasses

Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;	Not applicable					
Rehabilitation of tower sites and access roads outside of farmland;	Not applicable					
Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Make use of indigenous species for rehabilitation	Rehabilitation	cEO, ESCO	Weekly	Indigenous species are used for rehabilitation

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Stockpiled topsoil must be used for rehabilitation (refer to **Section 5.24: Stockpiling and stockpiled areas**);	Contractor	Ensure stockpiled topsoil is used as per the requirements listed under section 5.24	Rehabilitation	cEO	Weekly	Stockpiled topsoil is used asper the requirements listed under section 5.24
Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;	Contractor	Ensure that topsoil is spread evenly	Rehabilitation	cEO, ESCO	Weekly	Topsoil is spread evenly
Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	Contractor	Remove all visible weeds from placement area and topsoil before spreading the topsoil	Rehabilitation	cEO, ESCO	Weekly	No weeds are visible in the placement area or the topsoil

Subsoil must be ripped before topsoil is placed;	Contractor	Undertake the ripping of subsoil prior to the spreading of topsoil	Rehabilitation	cEO	Weekly	Subsoil is ripped before topsoil is placed
The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;	Contractor	Plan the timeframe for rehabilitation in order to undertake vegetation planting during the optimal time for vegetation establishment	Rehabilitation	ECO, ESCO	At the start of rehabilitation to confirm correct timeframe	Rehabilitation is undertaken during the optimal time
Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	cEO	Weekly	Disturbed slopes are stabilised sufficiently
Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;	Contractor	Stabilise slopes as per the design specifications	Pre-construction& Rehabilitation	cEO, ESCO	Weekly	Slopes are stabilised as per the design specifications
Spoil can be used for backfilling or landscaping as longas it is covered by a minimum of 150 mm of topsoil.	Contractor	Spoil used for landscaping must be appliedas per the listed requirements	Rehabilitation	cEO, ESCO	Weekly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor

– Where required, re-vegetation including hydro- seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included;	Contractor in consultation with a suitably qualified specialist	Make use of a suitable vegetation seed mixture should enhancement be required	Rehabilitation	ECO, ESCO	As and when required	Use of a suitable vegetation seed mixture if required
c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant

PROJECT APPLICANT DETAILS	
DEVELOPMENT ENTITY	
Applicant Name	FE Overberg (RF) (Pty) Ltd
Responsible Person	Mr Matteo Giulio Luigi Brambilla
Address	14th Floor Pier Place Heerengracht Street Foreshore Cape Town 8001
Contact Details	+27 (0)21 418 3940 (T) +27 (0)72 212 1531 (C) Email: m.logan@redrocket.energy

7.1.2 Details and expertise of the EAP

Details and expertise of the EAP:	
EAP Name	Fabio Venturi - Terramanzi Group (Pty) Ltd
EAP Qualifications	BSc (Hons) Zoology, 20 years' experience as an environmental practitioner
Professional Affiliation/Registration	EAPASA (2021/4088)
Physical Address	Unit 9, 16 Bell Crescent, Westlake Business Park, Westlake, Cape Town, 7945
Telephone	021 701 5228
Cellphone	082 575 3800
Email Address	fabio@terramanzi.co.za

The EMPr was authored and signed off by: Fabio Venturi (Terramanzi Group - EAPASA 2021/4088)
The EMPr was reviewed by:

- Tarryn Frankland (Terramanzi Group - EAPASA Candidate 2022/6205)
- Ludwig Van Der Merwe (EAPASA 2020/2817, SACNASP – 133969)
- Ana Mosse (Terramanzi Group – EAPASA Candidate)
- Bryan Cloete (Terramanzi Group – EAPASA Candidate)
- Chane Olckers (Terramanzi Group)

7.1.3 Project name

The approved Overberg 132kV Powerline will connect the authorised Overberg WEF to the National Grid at the Eskom Agulhas Main Transmission Substation via the 132kV Switching Station.

7.1.4 Description of the project

Environmental Authorisation was received for the WEF on 24 October 2022 (DFFE Ref. No.: 14/12/16/3/3/1/2556) and

subsequently amended (14/12/16/3/3/1/2556/AM3, dated 26 April 2024). The Overberg 132kV Powerline and 132kV Switching Substation were approved as part of the EA (14/12/16/3/3/1/2556/AM3, dated 26 April 2024). However, in order to meet specific commercial obligations and BID requirements, the 132kV Powerline and 132kV Switching station were split out of the EA and placed into their own EA (This EA) under the responsibility of the same Applicant (FE Overberg (RF) (Pty) Ltd). The 132kV OHPL and 132kV Switching station components were placed into their own EA for commercial and contractual obligations with the plan to be ceded to Eskom in the future before the Wind Farm is operational.

The Overberg 132kV Powerline will be approximately 5 km in length with a servitude of up to 35 m, and will facilitate the connection of the FE Overberg WEF (14/12/16/3/3/1/2556/AM3, dated 26 April 2024) to the National Eskom Grid at the planned Agulhas Main Transmission Substation (MTS).

This Generic EMPr seeks to manage and mitigate the potential impacts the 132kV Powerline may have on the identified sensitivities and receiving environment. This Generic Powerline EMPr falls under the responsibility of FE Overberg (RF) (Pty) Ltd.

7.1.5 Project location:

The Powerline will traverse 2 land parcels to connect the FE Overberg WEF to the National Grid via the Eskom Agulhas Main Transmission Substation, as presented in the following table:

Details of the land parcel(s) over which the proposed FE Overberg 132kV Powerline will traverse

Property Name	Sg21 Digital Code	Farm Size (Ha)	Municipality
Remainder of Portion 2 of the Farm Kluitjieskraal No 256	C07300000000025600002	778 Hectares	Swellendam Municipality
Portion 5 of the Farm Kluitjieskraal No. 256	C07300000000025600005	207 Hectares	Swellendam Municipality

The approximate coordinates of FE Overberg Wind Energy Facility in which the proposed 132kV OHPL will be located

	Latitude	*Longitude*
Northern Boundary	34°06’21.08"S	20°17'42.66"E
Eastern Boundary	34°05'52.16"S	20°23'07.67"E
Middle Point	34°09'56.51"S	20°17'10.22"E
Southern Boundary	34°13'25.41"S	20°18'09.21"E
Western Boundary	34°09'30.87"S	20°12'30.70"E

Table 2: The Bend points GPS coordinates of the Overberg 132kV OHPL alignment are provided in the table below

Powerline to the substation	Latitude	Longitude
Start Point	34°8’44.96’’S	20°21’13.68’’E
Bend 1	34° 8'43.63"S	20°21'12.03"E
Bend 2	34° 8'37.66"S	20°21'11.37"E
Bend 3	34° 7'50.59"S	20°20'14.51"E
Middle Point	34°8’16.91’’S	20°20’46.35’’E
End Point	34°7’46.30’’S	20°20’20.13’’E

The technical details of the Overberg 132kV OHPL are summarized as follows:

Grid Connection	
Tower Type	Steel or concrete towers can be utilised at the site. Alternatively, the towers can be of a hybrid nature, comprising concrete towers with top steel sections.
Pylon height	Up to 30 m
Grid connection	***The approved 132kV OHPL will facilitate the connection of the approved FE Overberg WEF (14/12/16/3/3/1/2556/AM3, dated 26 April 2024) via the approved 132kV Switching Station to the Agulhas Main Transmission Substation (MTS).***
Grid Connection length	Up to 5km
Capacity	132kV
Corridor	Up to 300m
Servitude	Up to 35m

It should be noted that Eskom's requirements for working near Eskom servitudes will be adhered to, and all applicable Eskom standards shall be applied

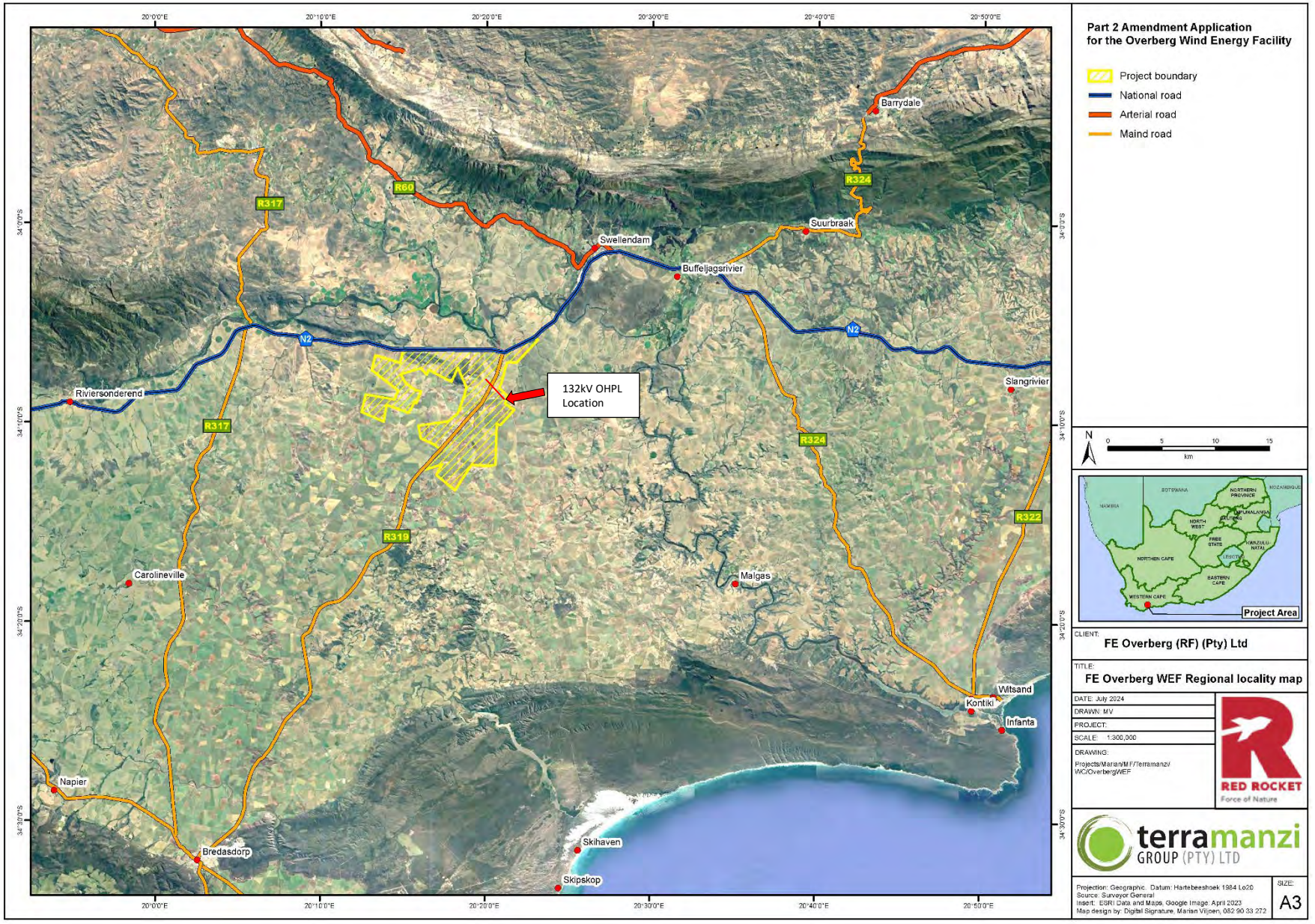


Figure 2: Regional Topographical Locality Map of the Overberg 132kV OHPL

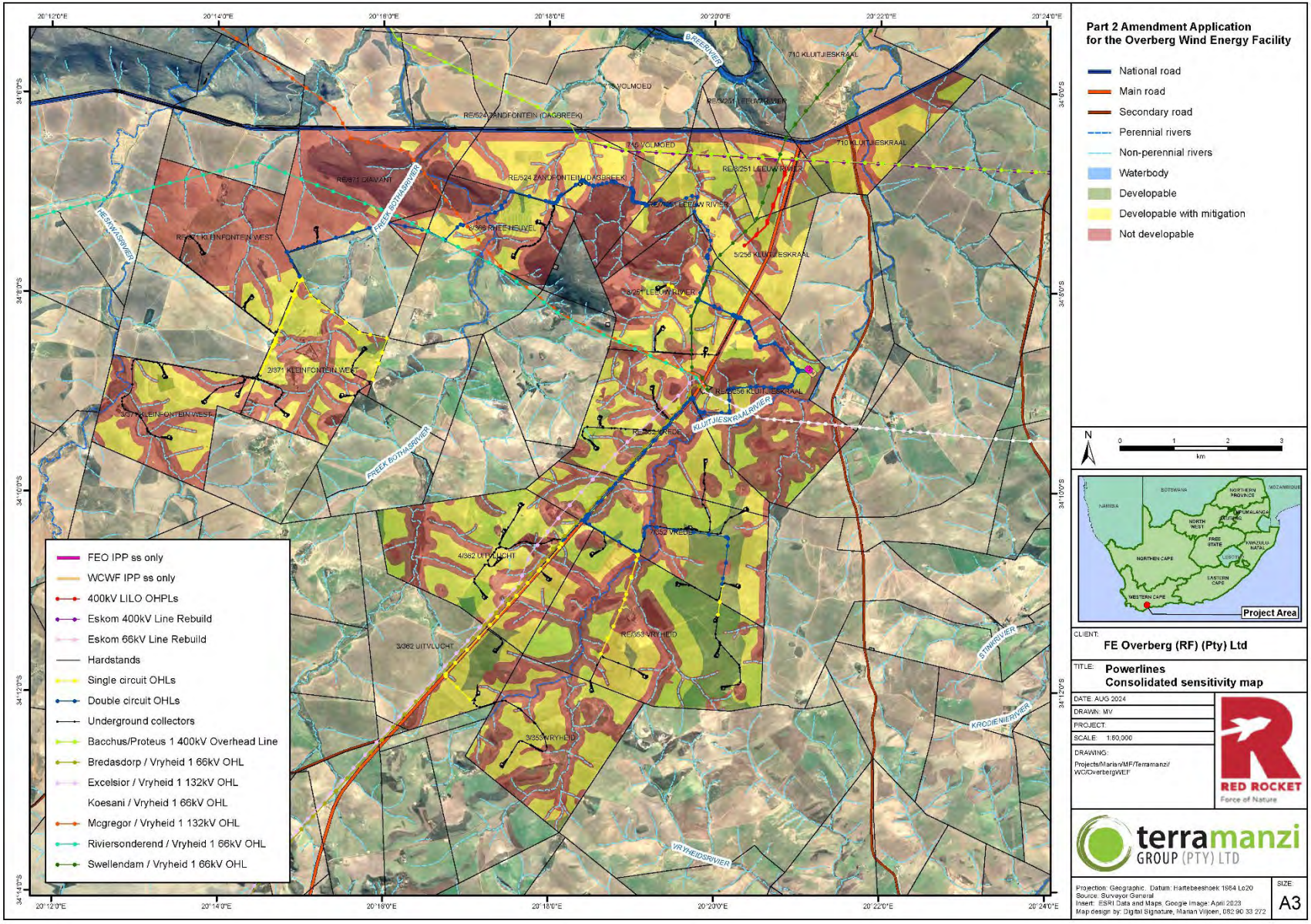


Figure 3: Site sensitivity for the Overberg WEF 132kV Powerline[1]

[1] OHPL will be spanned over not developable Freshwater systems.

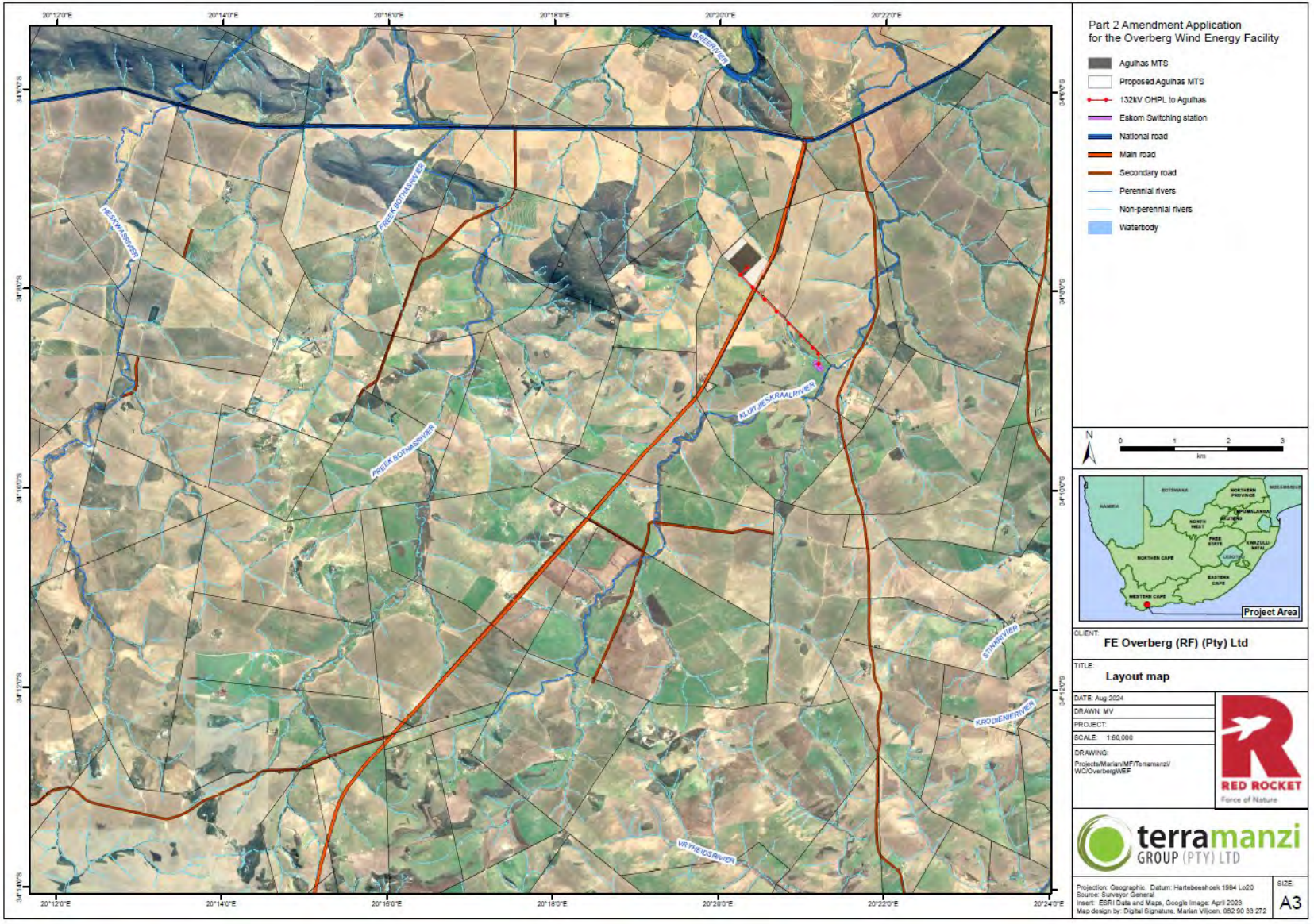
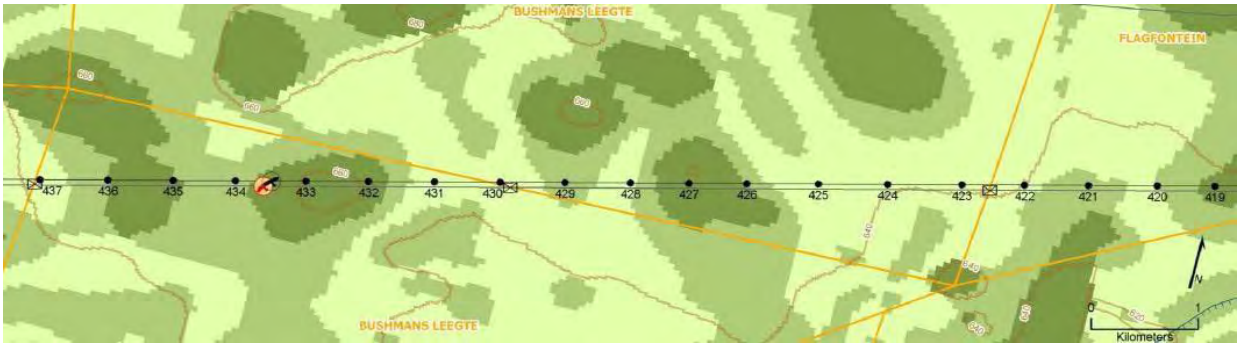


Figure 4: Final Layout (11 August 2024) showing the 132kV OHPL.

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.



Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile

The DFFE Environmental Screening Tool was utilised for this project to initially identify potential environmental sensitivities. The environmental sensitivities were then assessed by specialists. The environmental sensitives confirmed by the specialists are presented as follows:

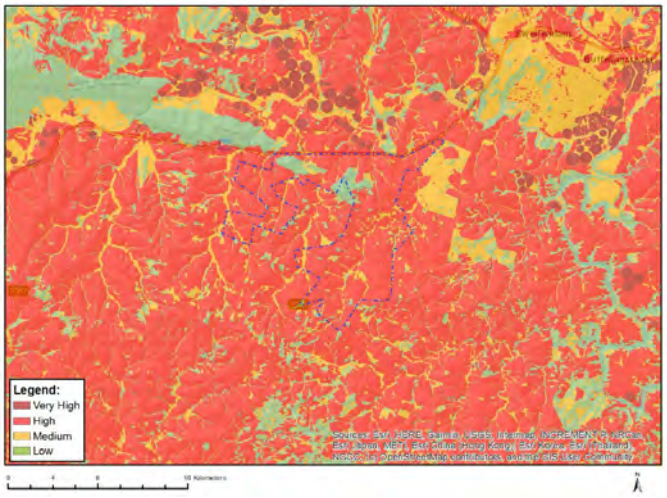


Figure 5: Agricultural DFFE Screening Tool Sensitivity Map.

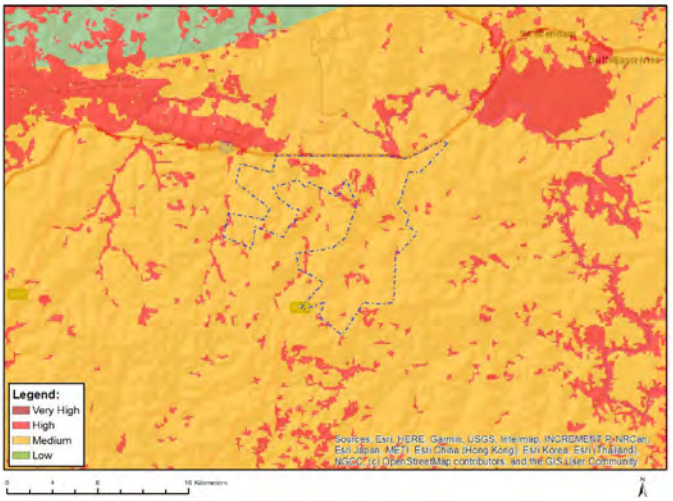


Figure 6: Animal Species DFFE Screening Tool Sensitivity Map.

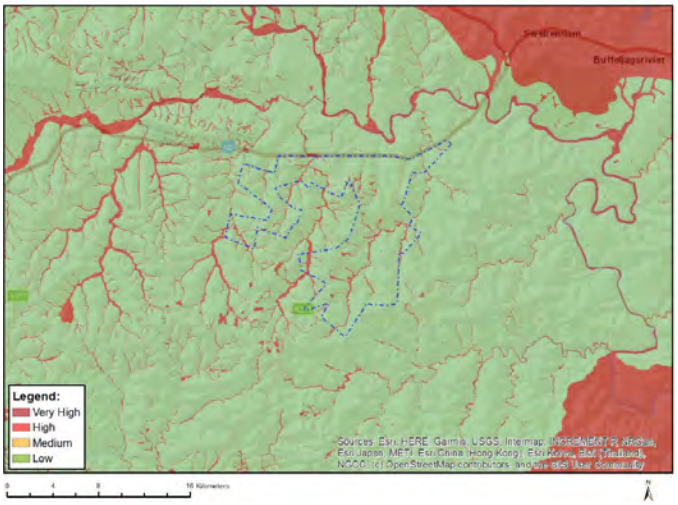


Figure 7: Aquatic Biodiversity DFFE Screening Tool Sensitivity Map.

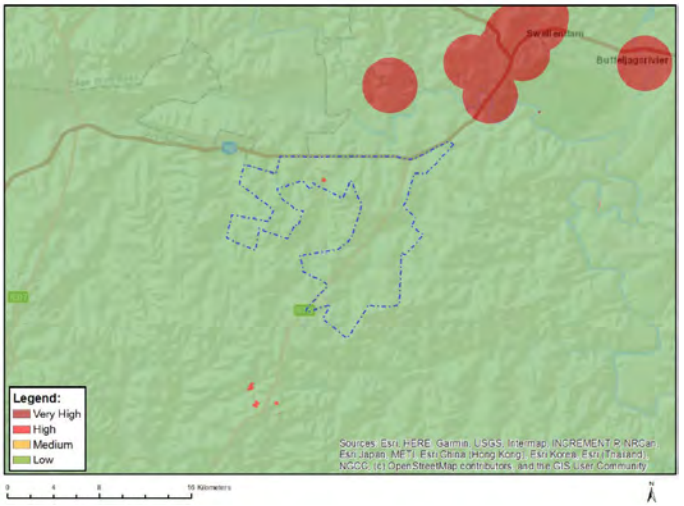


Figure 8: Archaeological DFFE Screening Tool Sensitivity Map.

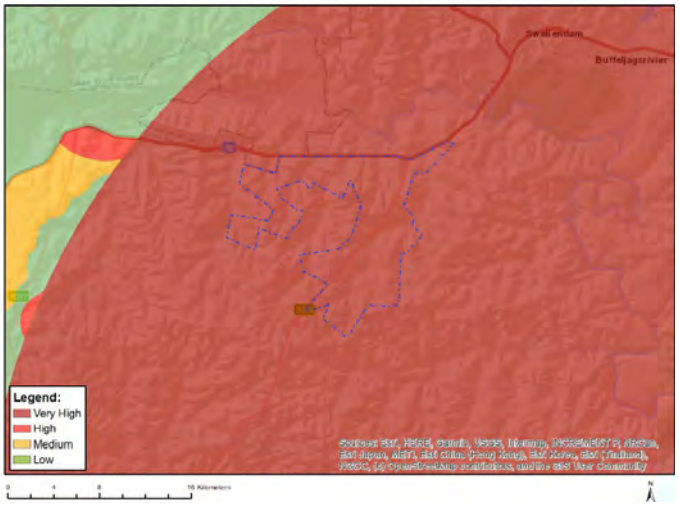


Figure 9: Avian DFFE Screening Tool Sensitivity Map.

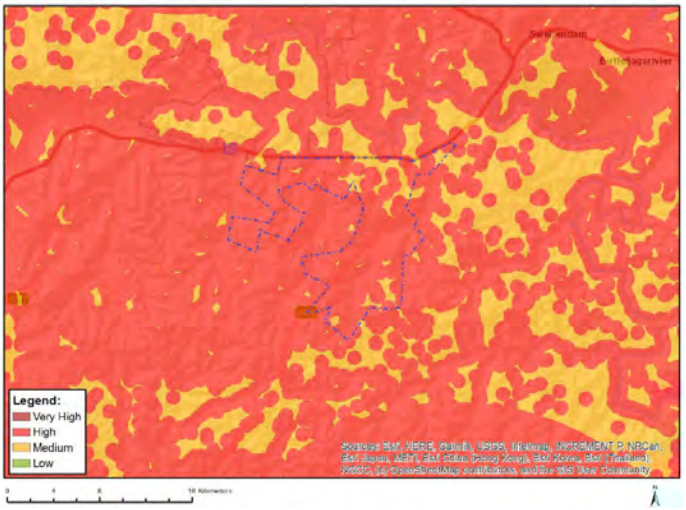


Figure 10: Bat theme DFFE Screening Tool Sensitivity Map.

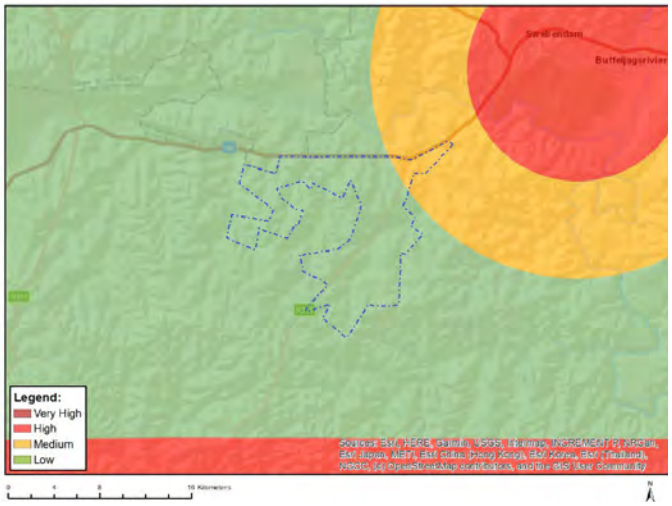


Figure 11: Civil Aviation (Wind) DFFE Screening Tool Sensitivity Map.

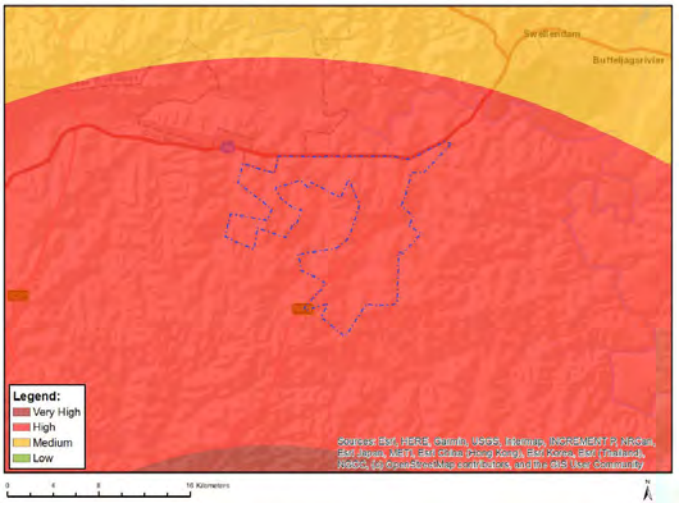


Figure 12: Defence Theme DFFE Screening Tool Sensitivity Map.

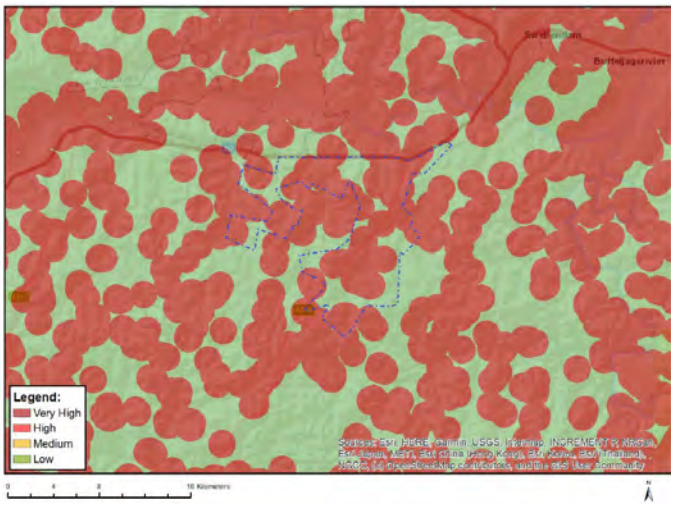


Figure 13: Flicker Theme DFFE Screening Tool Sensitivity Map.

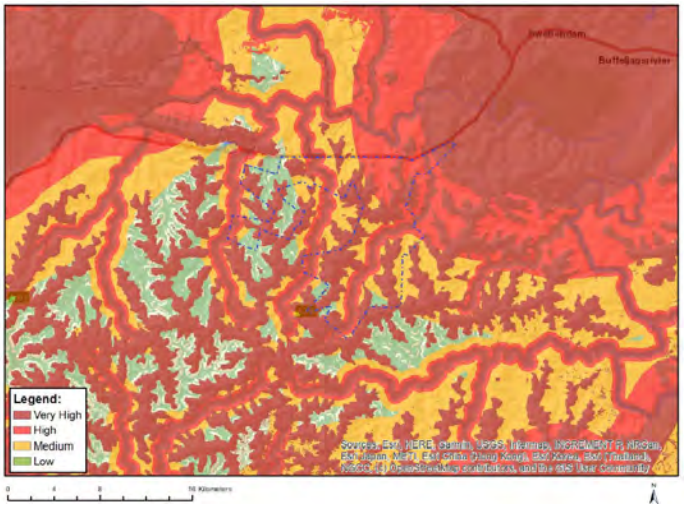


Figure 14: Landscape (Wind) Theme DFFE Screening Tool Sensitivity Map.

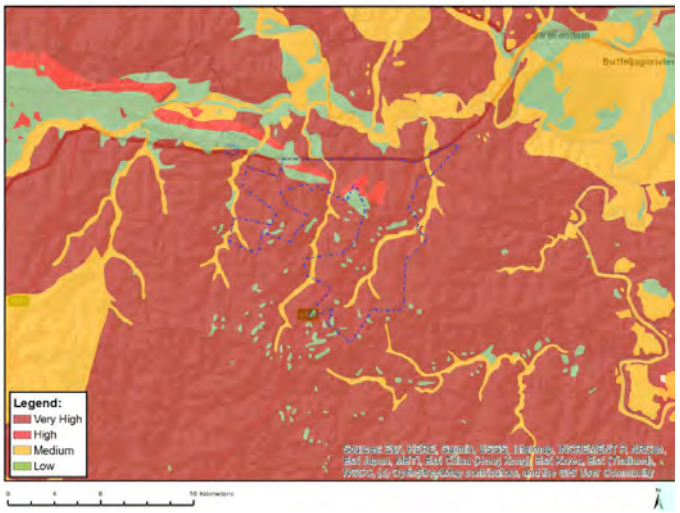


Figure 15: Palaeontological Theme DFFE Screening Tool Sensitivity Map.

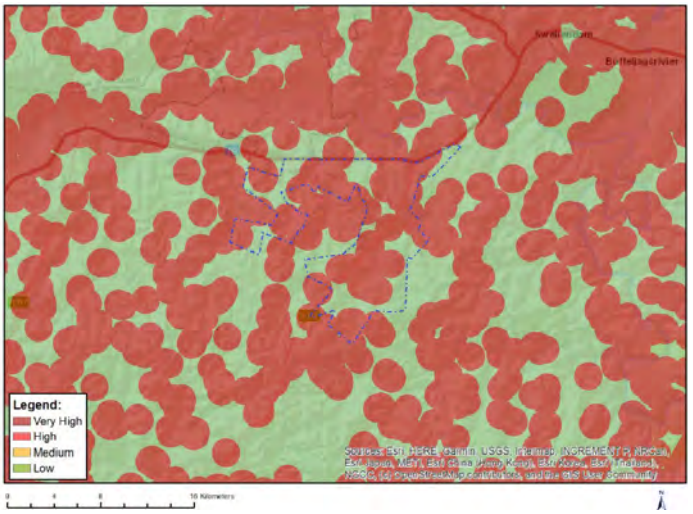


Figure 16: Noise Species DFFE Screening Tool Sensitivity Map.

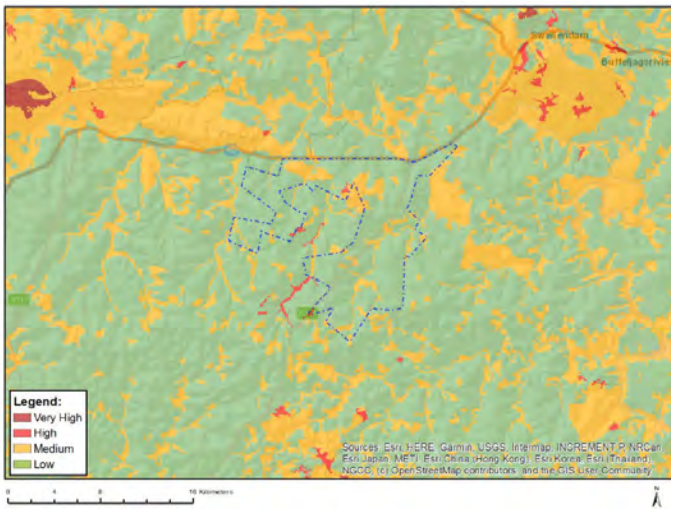


Figure 17: Plant Species DFFE Screening Tool Sensitivity Map.

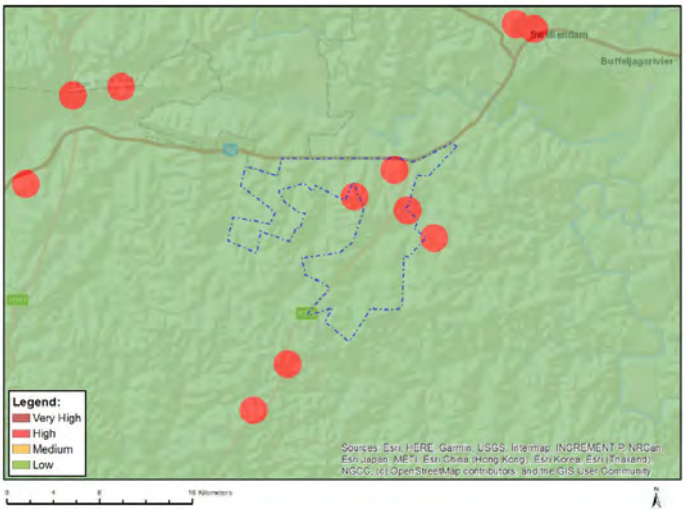


Figure 18: RFI (Wind) DFFE Screening Tool Sensitivity Map.

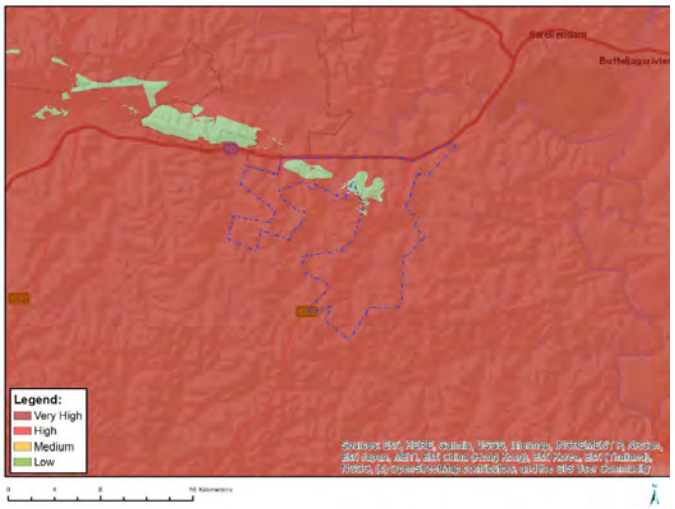


Figure 19: Terrestrial Biodiversity DFFE Screening Tool Sensitivity Map.

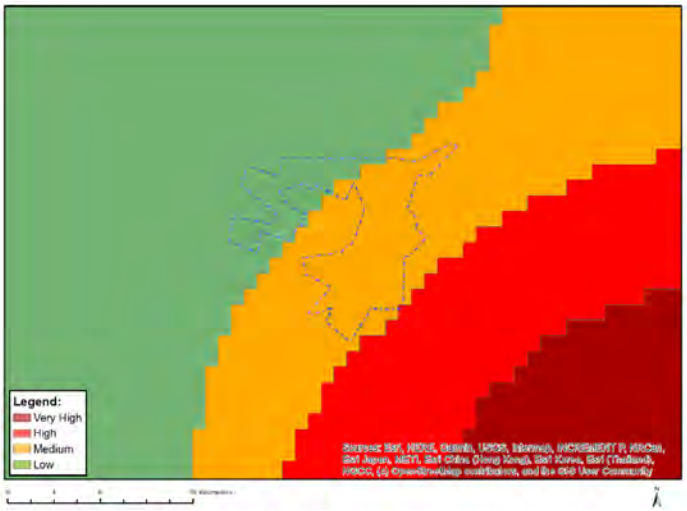


Figure 20: Vulture Species DFFE Screening Tool Sensitivity Map.

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA

Date:

DocuSigned by:

723ECD400D2E4BF...

19-Aug-24

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new holder.

PART C

8. SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

Please note: This Generic 132kV OHPL EMPr (dated August 2024) is submitted for approval. The 132kV OHPL has minor specific environmental sensitivities and or attributes provided by the Specialists, which specifically pertain to the OHPL and which require additional management, over and above what is presented in the Generic EMPr mitigation measures above. This Generic EMP will be an appendix to the Split EA (Split matrix – Appendix D) It is hereby submitted to the Competent Authority for decision.

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Terrestrial Animal Species						
Pre-construction walkthrough to verify the absence/presence of SCC and extent of alien invasive plant infestations.	Project Manger, ESCO, ECO, Ecological Specialist	Pre-construction walkthrough	Pre-Construction	Ecological Specialist	Pre-construction, frequency to be determined by the Ecological Specialist	Pre-construction walkthrough report
• The maximum use of the extensive available road network must be utilised where practically possible • Where the upgrading of roads requires increasing of the width of the road surface, the increased width must occur in the direction of existing modified habitat, i.e. road widths increases are to avoid the disturbance or destruction of natural habitat in areas where the road network runs adjacent to remnant patches of natural or near-natural habitat • The upgrading of roads must be undertaken with particular attention given to designs that reduce the	Project Manager, ECO, ESCO, Ecologist, dEO, DSS Traffic Specialist (where required)	Toolbox Talks / Environmental Training workshops, continuous reports and conversation between all relevant parties. Records of such must be kept on file.	Construction	Contractor, ESCO, ECO, Ecologist and Traffic Specialist (when required)	During the upgrading of roads	Proof of implementation in detailed design and report from specialist, ECO Compliance Report

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
flooding and saturation of the road surface, as the area is prone to rainfall induced damage of the internal road network • The upgrading of roads must include the upgrading of river or channel crossings (where technically required) as to not impede the downstream movement of water or increase erosion and sedimentation and impacts to downstream environments • The upgrading of roads must include appropriate water runoff management and include erosion prevention and flow control structures to prevent downstream impacts such as increased sedimentation of drainage lines and rivers • The upgrading of roads must be conducted using the minimum widths technically required						

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the preferred habitat of the Yellow-winged Agile Grasshopper	Project Manager, Contractor, ECO, ESCO, Ecologist, Local Fire Department , landowners, Farmers Association (if applicable)	Fire Management Plan (FMP) (Annexure L)	Operation	ECO, ESCO, Ecologist, Local Fire Department (if applicable) , landowners, Farmers Association (if applicable)	As required by the Fire Management Plan and / or relevant local fire management authority	Fire Management Plan, ESCO/ECO reports and/or checklists which detail fire activities when they occur. These reports must be in line with the requirements of the FMP.
Terrestrial Biodiversity						
• Please refer to the Mitigation measures in the 'Terrestrial Animal Species' section above, as these are also applicable to the management and mitigation of impacts to Terrestrial Biodiversity. • The mitigation measures recommended by the aquatic, terrestrial animal and avifaunal essments are to be implemented to reduce impacts on the relevant habitats • The fencing off some of the remnant patches of natural or near-natural vegetation accessible to grazing	Project Manager, Contractor, ECO, ESCO	Construction and Site inspections	Construction	ECO, ESCO	Construction phase, and when site access to an area outside the development is required.	Proof of implementation in detailed design and report from specialist.

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
livestock should be considered in consultation with relevant landowners as a means of controlling livestock access to these habitats						

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Residual Impact						
Mitigation measures are all inherent in the project design. A system of storm water management, which will prevent erosion, will be an inherent part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control,	ECO, ESCO, Contractor, Engineer, Freshwater specialist and Agricultural specialist	Pre, during and post construction	Planning and design phase	ECO, ESCO; Engineer; Freshwater Specialist	Throughout the project	Storm water management plan

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
where they occur on steeper slopes, must be kept in tact and functional after any disturbances that have been made to it as a result of construction activities or the placement of wind farm infrastructure, including roads.						

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of the effect of human activities and road mortalities						
Maintain proper firebreaks around entire development footprint.	ECO, ESCO, Fire department	Fire Management Plan – Local Fire Department.	Construction / Operation	ECO, ESCO; Fire department	Once a year / During winter season – when required. The local Fire Department and Ecologist can advise.	A report recording when Fire breaks are conducted and their frequency.
Educate construction workers regarding risks and correct disposal of cigarettes on site.	ECO, ESCO, Fire department	Fire Management Plan & Toolbox talks	Construction / Operation	ECO, ESCO	Weekly	Toolbox talk records and attendance registers

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Travelling at night should be avoided or limited as much as possible.	ECO, ESCO, Contractor, Health and Safety Officer	Security Checkpoints & Inspections	Construction / Operation	ECO, ESCO; Health and Safety Officer	Daily	Toolbox talk records and attendance registers

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Impact on Disturbance and Loss of aquatic habitat (direct)						
A pre-construction walkthrough with an aquatic specialist is recommended and they can assist with the development and implementation of the stormwater management plan and Aquatic Rehabilitation and Monitoring plan, coupled to micro-siting of the final layout.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (Where required).	Stormwater management plan and Aquatic Rehabilitation and Monitoring plan	Pre Construction	ECO, ESCO, Freshwater Specialist (when required).	Pre Construction - Frequency to be determined by the Freshwater Specialist and ESCO/ECO	Stormwater management plan and Aquatic Rehabilitation and Monitoring plan
Where large cut and fill areas are required these must be stabilised and rehabilitated during the construction process, to minimise erosion and sedimentation.	Project Manager, Engineer, ECO, ESCO, Freshwater	Stormwater management plan (SWMP)	Construction	ECO, ESCO,	Weekly	Weekly monitoring reports by the ESCO/ECO, monitoring reports as required by the SWMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
	Specialist (where required)					
Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist.	Stormwater management plan to be implemented	Construction, Operation	ECO, ESCO, Engineer and Project Manager (where required)	During construction and operation	Stormwater management plan
To minimise the impact of the access roads: • Use existing roads or upgrade existing tracks to cross wetlands rather than constructing entirely new roads wherever possible. • Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences. • Removal of vegetation must only be when essential for the continuation	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP) and Aquatic Rehabilitation and Monitoring plan (ARMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO/ECO weekly Reports, Monitoring reports as required by the SWMP and ARMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils. • All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. Crossings that are installed below the natural ground level are to be constructed with an appropriate drop inlet structure on the upstream side to ensure that headcut erosion does not develop as a result of the gradient change from the natural ground level to the invert level of the culvert. • The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown. • Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities. • Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted. • All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated. • It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.						
Construction areas within 50 m of any freshwater ecosystem must have clearly defined, approved work areas / footprints, which must be clearly demarcated on site, to limit the risk of	ECO, ESCO, Freshwater Specialist (where required),	Clearly Demarcate work and walk areas as per the Freshwater Specialist Report (12 August 2022 and	Construction	ECO, ESCO	Daily	Site Inspection and ECO , ESCO Compliance report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5 m on either side of the crossing may be implemented and the reaches of the freshwater ecosystem up- and downstream of the construction ROW must be designated 'no-go' areas	Engineer, Contractor	01 November 2023)				
As far as possible, the use of hard engineering techniques such as gabions, reno mattresses and so forth to manage erosion and sedimentation must be avoided. Where feasible, employment of 'soft' techniques such as biodegradable hessian sheeting with coir logs, brush cutting stabilised with additional cobbles and soil, or step-cutting and revegetation with indigenous flora is preferred for bank stabilisation. Further detail in this regard is provided in the freshwater rehabilitation and management plan (FEN, 2023).	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO,ECO weekly Reports, Monitoring reports as required by the SWMP
Further to the above, Acacia spp. were noted to occur within several drainage systems within the Overberg WEF project boundary. Removal of these trees is recommended albeit not within the duty of care of the proponent; however, felled tree trunks and larger branches without seeds and roots (to avoid perpetuating growth of these species) could be utilised in slope and	Project Manager, ECO, ESCO, Ecologist (where required)	Alien Invasive Management Plan (AIMP)	Construction & Operation	ECO, ESCO, Ecologist (where required)	Weekly	ESCO,ECO Reports, Monitoring reports as required by the AIMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
bank stabilisation.						
Vegetation cleared from construction areas is to be limited to the approved development footprint. Indigenous vegetation which is viable for replanting is to be retained for utilisation in disturbed areas post-construction. Alien vegetation must be removed to a licensed waste facility and may not be stockpiled, mulched, composted or burnt on site, with the exception of trunks and sturdy branches which are to be used for erosion control as above.	Project Manager, ECO, ESCO, Ecologist (Where Required)	Alien Invasive Management Plan (AIMP)	Construction	ESCO /ESCO	Weekly	Draft an onsite AIMP and conduct weekly checklists (to be included into the weekly ESCO, ECO site inspections)
Accumulated sediment and debris within freshwater ecosystem crossings is to be removed manually or by the lightest equipment possible to minimise disturbances to soil and hydraulic patterns within the freshwater ecosystems.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
Management of potential sources of contamination within the batching areas (specifically batching areas 1 and 2) is extremely important, given that both sites are within 30 m and upgradient of freshwater ecosystems. A clean and dirty water separation trench and berm	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
must be developed between these sites and the downgradient watercourses, which must be restored to pre-development topography and rehabilitated during decommissioning of the batching sites	required)					
Concrete and cement-related mortars can be toxic to aquatic life. Proper handling and disposal should minimise or eliminate discharges into the freshwater ecosystems. High alkalinity associated with cement can dramatically affect and contaminate both soil and ground water. The following measures are specific to concrete works within the batching sites and must be adhered to: ○ Fresh concrete and cement mortar should not be mixed near the freshwater ecosystems. Mixing of cement may be done within the batching site, on an impervious surface only, and must be within a lined, bound or bunded portable mixer. Consideration must be given to the use of ready mix concrete if possible; ○ No mixed concrete maybe deposited directly onto the ground within the freshwater ecosystems, outside of the designated area (e.g. at road crossings, no closer than 5 m to the freshwater ecosystem). All concrete	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
for any works within the freshwater ecosystems must be brought in via a cement mixing truck which must remain 5 m from the crossing, and cement must be piped down to the construction site. Any areas that require manual application of cement require that mixed cement be placed on a batter board or other suitable platform/mixing tray until it is deposited; ○ A washout area must be designated outside of the freshwater ecosystems, and wash water must be treated on-site or discharged to a suitable sanitation system; ○ At no point may batter boards/mixing trays or cement trucks be rinsed off on site and run-off water be allowed into the freshwater ecosystems; ○ Cement bags (if any) must be disposed of in the demarcated hazardous waste receptacles and the used bags must be disposed of through the hazardous substance waste stream; and ○ Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Water is planned to be abstracted from existing boreholes within the Overberg WEF project boundary. Abstraction must be carefully managed according to the recommendations made by the geohydrologist, to ensure that groundwater levels are maintained and that dewatering of freshwater ecosystems does not occur.	Project Manager, Contractor, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Include borehole	Pre-construction, Construction, Operation	ECO, ESCO, Engineer, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
As far as possible, underground cabling must be installed across freshwater ecosystems by means of pipe-jacking / micro-tunnelling. If trenching cannot be avoided, the following measures must be taken: ○ Trenching must, as far as practically possible, be undertaken during the dry, summer low-flow period, to contain the impacts from the construction phase; ○ The construction footprint must be limited to the width of the trench and a construction ROW (to allow for the temporary stockpiling of soil and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation; ○ The stockpiles must remain as small as possible and may not exceed 2 m in height to prevent excessive dust	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Layout Design – the Final layout accounts for the freshwater no-go areas. Regular site walk throughs - the ESCO and ECO must monitor the water crossings and boundaries to the freshwater no-go areas weekly to manage any potential impacts which may occur.	Construction & Operation	ECO, ESCO, Engineer, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
generation that could smother wetland vegetation and impact the downstream reach of the freshwater ecosystem; o The duration of open trenching through any freshwater ecosystem must be kept as short as possible; o Trenching will potentially result in bank destabilisation, and cause bank incision and sedimentation of the freshwater ecosystem therefore, sediment control devices (such as geotextile sediment traps - Figure 3) must be installed prior to trenching activities downgradient of the construction works to limit any sediment from entering the downstream reach. Sediment traps should allow for surface runoff should a rainfall event occur; o During trenching through the freshwater ecosystem, soil may be stockpiled on the upgradient edges of the excavation in order to limit potential sedimentation of the freshwater ecosystem. In cases where the space does not allow for the stockpiling of excavated material, then protective sheeting must be used to stockpile soil on the downgradient edges. Mixture of the lower and upper layers of the						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
excavated soil should be kept to a minimum. ○ During trenching activities, seepage water may be present within the trench - invariably this will be filled with silt and have high suspended solid loads. Therefore, any seepage must not be discharged directly into the downstream reach of the freshwater ecosystem but must rather dewatered and pumped into a small stilling basin first before being released to the receiving environment; ○ The stockpiled soil must be used to backfill the trench, immediately after constructing the pipeline; ○ Material used as bedding material (at the bottom of the excavated trench) should be stockpiled outside of the delineated boundary of the freshwater ecosystem. Once the trench has been excavated, the bedding material should directly be placed within the trench rather than stockpiling it alongside the trench; ○ The bedding layer (such as clean gravel) must be spread evenly and compacted uniformly to the required density using a hand tamper (one-man operator) in order to minimise the use of large						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
machinery within the defined extent of any watercourses. Depending on the substrate of the active channel, the same channel bed material must be returned - i.e., if cobbles, cobbles must be replaced; ○ Once the cabling has been installed, the stockpiled soil must be used as backfill for the trench, while keeping the disturbance footprint to a minimum – no indiscriminate movement of construction machinery by personnel (Figure 4 above). The trench must be filled with soil in the same sequence as it was removed. It is imperative that topsoil be reinstated to ensure suitable rehabilitation of vegetation; ○ The trench must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion and the upper 300 mm must be ripped for reestablishment of vegetation. However, consideration must be given to accounting for subsidence of the soil level over time by allowing for a slightly higher soil level in the trench (depending on the soil type). Therefore, monitoring post construction is required. Conversely,						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
areas compacted as a result of construction activities (within the 5 m construction ROW must be loosened to natural soil compaction levels; ○ Proliferation of alien vegetation must be monitored and controlled; ○ Unused excavated soil/sediment must be utilised as part of the open space area or be removed from site to a registered landfill.						
To minimise the impact of the access roads: • Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.	ECO, ESCO, Engineer, Freshwater specialist (if required)	Continuous monitoring throughout construction	Construction; Operation	ECO, ESCO	Operation	Proof of implementation in detailed design and report from specialist.
Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.	Project Manager, ECO, ESCO, Ecologist	The Final approved Layout must be implemented on site	Construction	ECO, ESCO,	Daily	Site Inspections and ESCO, ECO Compliance Reports
The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The	Project Manager, ECO, ESCO, Freshwater	Continuous monitoring throughout construction	Preconstructio n	ESCO, ECO	Weekly and monthly monitoring of the channel profile	Site Inspections, ESCO, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
related designs must be assessed by an aquatic specialist during a pre-construction walkdown.	specialist					
Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.	DPM, ECO, ESCO, Freshwater specialist, Engineer	Temporary water diversion design must utilise sand bags	Construction	DPM, Engineer, ESCO	When a temporary water diversion is applicable, weekly monitoring will be sufficient	Site Inspection, ESCO, ECO Compliance report
Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.	Respective Specialist, Project Manager, ECO, ESCO	Faunal Search and Rescue Programme	Construction	Respective Specialist (where required), ESCO, ECO	Weekly	Faunal Search and Rescue Programme Report
All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated.	Project Manager, ECO, ESCO, relevant specialists	Rehabilitation and Revegetation Plan	Post construction	Relevant Specialist (Ecologist), Contractor, ESCO, ECO	Rehabilitation Phase – Weekly	Site Inspection, Rehabilitation and Revegetation Plan
It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed.	Project Manager, ECO, ESCO,	Alien Invasive Management Plan	Construction	DPM, ESCO	Weekly	Site Inspection, Alien Invasive Management Plan

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.						
Impact on riparian and wetland systems through possible increase in surface water runoff, i.e. changes to the hydrological regime (indirect)						
A stormwater management plan must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems.	Project Manager, ECO, ESCO, Freshwater specialist, Engineer	Implement a stormwater management plan	Construction	ECO, ESCO	Weekly and after storm events, and/or high rainfall events	Site Inspection, Storm Water Management Plan
Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil. Contingency plans must be in place for high rainfall events which may occur during construction.	Project Manager, ECO, ESCO, Freshwater specialist, Engineer	Implement a stormwater management plan	Construction	ESCO, ECO, Engineer	Weekly and after storm events, and/or high rainfall events	Site Inspection, Storm Water Management Plan
The stormwater management infrastructure must be designed to ensure the runoff from the development is not highly concentrated before entering the buffer area. The buffer area must be considered as a No Go area for development and large infrastructure.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
The volume and velocity of water must be reduced through discharging the surface flow at multiple locations surrounding the development,	Project Manager, Engineer, ECO, ESCO,	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
preventing erosion.	Freshwater Specialist (where required)					
Impact on changes to hydrological regimes that could also lead to sedimentation and erosion (indirect)						
Monitoring of the project activities is essential to ensure the mitigation measures are implemented. Compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report.	ECO, ESCO	ECO Compliance Report	Construction	ECO, ESCO	Site visits as required	Approved EMPr and mitigation measures in place
Sedimentation must be minimised with appropriate measures. Any construction, within or directly upslope of a watercourse, causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using rows of silt fences, sandbags, hay bales and/or earthen berms spaced along contours at regular intervals. Construction must have contingency plans for high rainfall events during construction.	Project Manager, , ECO, ESCO, Freshwater Specialist, Engineer	Implement a stormwater management plan	Construction	ECO, ESCO	Weekly and after storm events, and/or high rainfall events	Site Inspection, Storm Water Management Plan
Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the	Project Manager, ECO, ESCO, Freshwater specialist, Engineer	Implement a stormwater management plan	Construction	ESCO, ECO	Once a year	Site Inspection, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
volume/velocity of the water reduced through further structures and/or energy dissipaters. Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil.						
Energy dissipaters should be installed to prevent scour at any culvert outlet. This can be constructed of appropriately sized rock armour. Coarse bedding material or geotextile wrapped dump rock must be considered for use wherever the roads crosses wetland characterized by diffuse subsurface flows such as the seeps.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
Potential Impact on localized surface water quality (indirect)						
Mechanical plant and bowsers must not be refuelled or serviced within 100m of a river channel.	ECO, ESCO, Contractor	Assure that contractors are aware of this measure and identify adequate areas and methods	Construction	ECO, ESCO, DPM	Daily	Site Inspection, ESCO, ECO Compliance Report
All construction camps, lay down areas, wash bays, batching plants or areas and any stores should be more than 50 m from any demarcated water courses.	ECO, ESCO, Contractor, Project Manager	Approved site layout should be used before Construction begins	Construction	ECO, ESCO	Weekly	Site Inspection, ESCO, ECO Compliance Report
Littering and contamination associated with construction activity must be avoided through effective construction camp management.	ECO, ESCO, Contractor, Project Manager,	Tool box talks and training	Construction	ECO, ESCO	Weekly	Training records, ESCO, ECO Compliance reports should be kept on file, EMPr's

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No stockpiling should take place within or near a water course.	ECO, ESCO, DPM, Project Manager, Contractor,, Engineer, Fresh Water Specialist	Approved layout should be used which guides the location of stockpiling activities	Construction	ECO, ESCO, Contractor, Project Manager (where required)	Daily	Site Inspection, ESCO, ECO Compliance Report
All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.	ECO, ESCO, Contractor, engineer, Fresh Water Specialist	Approved layout should be used which guides the location of stockpiling activities	Construction	ECO, ESCO, Contractor	Daily	Site Inspection, ESCO, ECO Compliance Report
ESO monitors the site on a daily basis to ensure plant is in working order (minimise leaks), spills are prevented and if they do occur, are quickly rectified.	Contractor, ESO, ESCO	Maintenance Plan	Construction	ESO, ESCO	Daily	Site Inspections, Maintenance Plan feedback register / report

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Bat Impact Management						
• At operational wind energy facilities where bat fatality rates exceed threshold values, mitigation strategies such as curtailment or deterrents must be implemented. These mitigation strategies and curtailment regimes must be based on pre-construction monitoring from the specific site and be drawn up by a qualified specialist. • The operation of lights at substations should be limited to avoid attracting bats to the area. Where lights need to be used such as at the substation and switching station and elsewhere, these should have low attractiveness for insects such as low pressure sodium and warm white LED lights (Rydell 1992; Stone 2012). High pressure sodium and white mercury lighting is attractive to insects (Blake et al. 1994; Rydell 1992; Svensson & Rydell 1998) and should not be used as far as possible. • Lighting should be fitted with	Project Manager, ESCO, ECO, Avifaunal and Bat Specialist	Bat Fatality Monitoring Programme as determined by the Avifaunal and Bat Specialist	Operation	ESCO, ECO, Avifaunal and Bat Specialist	To be determined by the Avifaunal and Bat Specialist	Bat Fatality Monitoring Report

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
movement sensors to limit illumination and light spill, and the overall lit time. In addition, the upward spread of light near to and above the horizontal plane should be restricted and directed to minimise light trespass and sky glow. • Increasing the spacing between lights, and the height of light units can reduce the intensity and volume of the light to minimise the area illuminated and give bats an opportunity to fly in relatively dark areas between and over lights. • Each development must avoid construction and turbine siting in bat no-go areas.						
Direct Habitat Destruction						
The footprint within High Sensitivity areas should be minimized and avoided wherever possible	ECO, ESCO, Contractor	Clear boundaries should be identified before construction commence	Construction	ECO, ESCO	Daily	Site Inspections and ESCO, ECO Compliance reports
Laydown and other temporary infrastructure to be placed within very low to low sensitivity areas, preferably previously transformed areas, wherever possible	ECO, ESCO, Contractor	Areas should be identified before construction commence	Construction	ECO, ESCO	Daily	Site Inspections and ESCO, ECO Compliance reports
Appropriate run-off and erosion control measures are to be implemented where	ECO, ESCO, Contractor,	Measurements should be in place before construction	Construction	ECO, ESCO,	Daily, especially after high rainfall events	Site Inspections and ESCO, ECO Compliance reports

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
required	engineer, fresh water specialist	commence				
All hazardous materials should be stored in the appropriate manner to prevent contamination of the site and downstream environments. Any accidental chemical, fuel and oil spills that occur at the site should be cleared as appropriate for the nature of the spill	ECO, ESCO, contractors	Clearly marked areas and bins should be accessible for all workers on site	Construction	ECO, ESCO,	Daily	Site Inspections and ESCO, ECO Compliance reports
The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths	Contractor, Project Manager, ECO, ESCO	Ensure existing roads are being used	Construction	ECO, ESCO, Contractor	Daily	Site Inspections and ESCO, ECO Compliance reports
No off-road driving should be permitted in areas not identified for clearing	Contractor, Project Manager ECO, ESCO	Ensure existing roads are being used	Construction	ECO, ESCO	Daily	Site Inspections and ESCO, ECO Compliance reports
Management of the disturbance and displacement						
Prior to construction, an avifaunal specialist should conduct a site walkthrough, to confirm the quality of the habitat for Black Harrier and to determine whether minor adjustments in the position of these WTGs would be required (micrositing). The walkthrough will also determine potential new SCC nesting sites which may have been established.	Project Manager, Avifaunal Specialist, ESCO, ECO	Pre Construction walk through	Pre-Construction	Avifaunal Specialist, ESCO, ECO	Pre-Construction	Pre Construction walk through Report
Speed limits (30 km/h) should be strictly enforced on site to reduce unnecessary	ESCO, Contractor,	Speed Control signs and Training	Construction, post	Healht and Safety Officer, ECO,	Daily	Training registers, Speed infringement register, site

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
noise	Health and Safety Officer		construction	ESCO		inspections/observations of speeding on site.
Construction camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate	Engineer, Contractor, Avifaunal Specialist (where required)	Lighting designs must be	Construction and Operation	Contractor, ESCO	Daily during construction and weekly (if required) or monthly during Operation	Site Inspection, ECO report, grievances report from neighbours
The movement of construction personnel should be restricted to the construction areas on the project site	Contractor, Project Manager, ESO, ESCO	Demarcate the construction area with a site boundary fence and netting	Pre Construction & Construction	Project Manager (when required), Contracto (when required), ECO, ESCO	Daily	Site inspection of the fence, ECO compliance report
Mitigation Management Approach						
A Three-tiered mitigation approach will be implemented on site comprising blade painting, Observer-Led Shut Down On Demand (OLSDOD) and Automated Shut Down On Demand (ASDOD) during daylight hours, seven days a week, including public holidays from the moment blades are turning.	Project Manager, Engineer, Contractor, ESCO, ECO, Avifaunal Specialist (when required)	Implementation of monitoring programmes discussed in the sections below.	Operation	ESCO, ECO, Avifaunal Specialist (when required)	Weekly	Implementation of monitoring programmes discussed in the sections below.
Results comparing the effectiveness of OLSDOD and ASDOD will be assessed annually and systematically adjusted by the qualified and appropriately experienced Avifaunal Specialist appointed to the Project and made	Project Manager, Engineer, Contractor, ESCO, ECO, Avifaunal Specialist	Implementation of a monitoring programme as determined by the Avifaunal Specialist, to monitor the effectiveness of the OLSDOD and ASDOD.	Operation	ESCO, ECO, Avifaunal Specialist, Project Manager (when required), Engineer (When required)	To be determined by the Avifaunal Specialist	The type of Avifaunal Monitoring Report /system is to be determined by the Avifaunal Specialist. ESCO, ECO weekly compliance

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
available to BLSA, ORCT and EWT prior to adjustments, if any, being made. The Client reserves the right to reduce tiers of mitigations as determined and advised by an Avifaunal Specialist, in consultation with BLSA and ORCT.		Implementation of a reporting system, as determined by the Avifaunal Specialist, to present the results of the monitoring to BLSA, ORCT and EWT.				reports.
The Developers will install and implement automated shutdown on demand (ASDOD) technologies, in addition to other mitigation measures identified, to be operational from the date each such turbine firsts starts operation. The Developers will determine the most suitable ASDOD technology for the species of concern on the site in consultation with qualified service providers, including an Avifaunal Specialist. The turbines on which ASDOD technology will be installed are identified in this section of the EMPr. • The Developers will consult with BLSA and ORCT regarding	Project Manager, Engineer, Avifaunal Specialist (when required), BLSA, ORCT	The appropriate ASDOD technology to be implemented on each turbine will be determined prior to construction commencing.	Pre-Construction	ESCO, ECO, Avifaunal Specialist	Pre-Construction	The efficiency of the ASDOD technology will be monitored by the Avifaunal Specialist in a manner as determined by the Avifaunal Specialist.

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
the proposed ASDOD technology that will be implemented on the project turbines.						
All contractors are to adhere to the environmental management programme and should apply good environmental practice during all operations;	Project Manager, Contractor, ESCO, ECO, Health and Safety Officer	Tool Box Talks, Daily and weekly site inspections and monitoring of the	Construction and Operation	Contractor, ESCO, ECO, Health and Safety Officer	Daily and weekly	Attendance Registers for Tool box Talks, ESCO, ECO weekly compliance reports.
A livestock carcass management plan to be implemented in collaboration with other operational WEFs (where possible) to reduce the likelihood of attracting vultures. • Livestock carcasses must be removed or covered within 8 hours of being located	ESCO, ECO, Avifaunal Specialist (when required)	Carcass Management Plan	Construction	ESCO, ECO, Avifaunal Specialist (when required)	Frequency determined by the Avifaunal Specialist, however, the responsible person(s) on site should include observe daily	Carcass Management Plan Report/Checklist
Surveys for breeding avifaunal Species of Conservation Concern (i.e. Verreaux's Eagle and Black Harrier) during the correct breeding season must be undertaken by appropriately trained/experienced people. This includes monitoring of the known VE nest sites in close proximity to the WEF.	Project Manager, ESCO, ECO, Avifaunal Specialist	Seasonal Breeding Survey and nest surveying as determined by the Avifaunal Specialist	Operation	ESCO, ECO, Avifaunal Specialist	Seasonal dependent. Frequency of monitoring to be determined by the Avifaunal Specialist	Seasonal Breeding Survey Report and/or a nest surveying report as determined by the Avifaunal Specialist
Operational phase bird monitoring and reporting in line with the latest available guidelines, must be implemented for the lifespan of the facility due to the risk of	Project Manager, Avifaunal Specialist,	Avifaunal Monitoring Programmes will be implemented as describe	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	Avifaunal Monitoring Programmes as determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
significant impacts.	ESCO, ECO	din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.				and covered in the sections of the EMPr.
Direct mortality of avifaunal Species of Conservation Concern:						
Fatalities of avifaunal Species of Conservation Concern are to be appropriately recorded and reported by the ESCO to the Avifaunal Specialist, the Developers and/or the Client as soon as reasonably practicable after first being detected or observed on-site during operational monitoring whereby appropriate and/or feasible measures will be taken, in consultation with an Avifaunal Specialist, if applicable. These reports must be made available to relevant stakeholders on quarterly basis (within 15 days of the completion of monitoring). • Any Black Harrier fatalities are to be reported to the ORCT within 24 hours.	Project Manager, Avifaunal Specialist, ESCO, ECO	Fatality Monitoring Programme	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	Fatality Monitoring Report
Monitoring						
Prior to operations, an OLSDOD monitoring programme is to be designed and established for the project and is	Project Manager, Avifaunal	Implementation of an Observer-led Shut Down on	Pre - Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the	OLSDOD Monitoring Report as determined by the

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
required to be included in the avifaunal monitoring programme established for the project. The OLSDOD programme is to be developed by an Avifaunal Specialist, in collaboration with the Applicant. The purpose of the OLSDOD is to ensure that the ASDOD is working efficiently and to assist in the mitigation of risk and impact to the Avifauna on site.	Specialist, ESCO, ECO	Demand (OLSDOD) Monitoring Programme as determined by the Avifaunal Specialist			Avifaunal Specialist	Avifaunal Specialist
OLSDOD will be implemented during daylight hours for at least the first 12 months of operation on WTG 14, 15, 16, 18, 21, 22, 24 and 25, including on weekends and public holidays.	Project Manager, Avifaunal Specialist, ESCO, ECO	Implementation of an Observer-led Shut Down on Demand (OLSDOD) Monitoring Programme as determined by the Avifaunal Specialist.	Pre - Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	OLSDOD Monitoring Report as determined by the Avifaunal Specialist.
OLSDOD will be conducted for daylight hours, seven days a week (including weekends and public holidays), during peak Black Harrier activity (summer months, or as recommended by the Avifaunal Specialist) on WTG 1, 2, 3, 4, 5, 6, 12, 13, 17, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39 for Black Harrier and White Stork collision mitigation management.	Project Manager, Avifaunal Specialist, ESCO, ECO	Implementation of an Observer-led Shut Down on Demand (OLSDOD) Monitoring Programme as determined by the Avifaunal Specialist.	Pre - Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	OLSDOD Monitoring Report as determined by the Avifaunal Specialist.
As a first-tier of mitigation, all 39 WTGs will be manufactured with one painted	Project Manager,	Implementation of blade patterning on all 39 WTGs	Pre-construction	Project Manager, Avifaunal	Pre- construction	Implementation of blade patterning on all 39 WTGs

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
(or patterned) blade to increase the visibility for birds. • The Developers will consult with the ORCT and BLSA (including with reference to any guidance from the South Africa Wind Energy Association) regarding the blade painting required terms of the EA that is in accordance with the best available Science and the South Africa Civil Aviation Authority (CAA) requirements. • The Developer will determine the appropriate blade patterning based on South Africa Civil Aviation Authority's (SACAA) requirements. The best applicable patterning is it to be presented and discussed with BLSA, ORCT and the South African Wind Energy Association. • Standard aviation stripes will not be implemented on the Project turbines as a means of satisfying the blade painting specifications required from an avifaunal mitigation perspective	Engineer, Avifaunal Specialist, ESCO, ECO, ORCT, BLSA			Specialist, ESCO, ECO,		

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
ASDOD technology will be installed on Turbine 7, and to operate such technology on a year-round basis, for the management of impacts to the Verreaux's Eagles on site.	Project Manager, Avifaunal Specialist, ESCO, ECO,	The appropriate Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist, but at least annually	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist
WTGs 8, 9, 10 and 11, within 5.2 km of the Verreaux's Eagle nest (including rotor swept area), are to be fitted with ASDOD technology as a means of second-tier mitigation, and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable the approaching bird to travel through the wind farm safely.	Project Manager, Avifaunal Specialist, ESCO, ECO,	The appropriate Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist
ASDOD will be implemented on WTGs 14, 15, 16, 18, 19, 21, 22, 24 and 25 for the mitigation of impacts to the Black Harriers on site. The technology will be implemented as a means of second-tier mitigation and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable	Project Manager, Avifaunal Specialist, ESCO, ECO,	The appropriate Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
the approaching bird to travel through the wind farm safely.						
The Developers will notify BLSA and EWT should any collisions with a Black Harrier and Verreaux's Eagle occur, and if the monitoring data generated during the first 12-month period indicates that the ASDOD systems proves unsuitable for smaller avifaunal Species of Conservation Concern (Black Harriers), the possibility of implementing additional management or mitigation measures shall be assessed and investigated by the Developers together with an Avifaunal Specialist. Based on the monitoring data, the possibility of implementing an additional tier of mitigation (including the possibility of ASDOD on additional turbines or a suitable habitat and conservation mechanism) will be assessed by the Developers at the relevant time, if required, in response to the aforesaid monitoring data.	Project Manager, Avifaunal Specialist, ESCO, ECO, BLSA, EWT	Implementation of a collision monitoring programme, or a programme as determined by the Avifaunal Specialist	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist
The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.	Project Manager, Avifaunal Specialist, ESCO, ECO	Nest surveying programme as determined by the Avifaunal Specialist	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	A Nest survey report as determined by the Avifaunal Specialist
Should it become apparent that avifaunal Species of Conservation Concern (e.g. Black Harrier and Martial	Project Manager, Avifaunal	Breeding Monitoring Programme as determined	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the	Breeding Monitoring programme report as

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Eagle) are utilising the site for breeding at any time during the operational lifespan of the development, WTGs within at least 2 km of nest positions will be required to have an additional tier of mitigation. The appointed Avifaunal Specialist is to be notified to determine the appropriate additional mitigation measures, this will include i) additional observer- led shut-down-on-demand if it is not already in place, or ii) temporary curtailment during daylight hours during the breeding period or other high-risk periods, as per local specialist studies. • If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined) the Avifaunal Specialist is to be appointed for further assessment of the situation and instruction on how to proceed, and BLSA, HWI and ORCT are to be notified within 24 hours. • The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest	Specialist, ESCO, ECO	by the Avifaunal Specialist			Avifaunal Specialist. New breeding locations will be communicated to ORCT, BLSA and HWI within 24 hours.	determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.						
Develop and implement an avifaunal carcass search and activity monitoring programme for Black Harrier and Verreaux's Eagle to be conducted for the lifespan of the facility in-line with the latest applicable guidelines (recognising that the intensity of monitoring required could be adapted (increasing or decreasing in intensity) in future based on the recommendations of an Avifaunal Specialist (e.g.. for example by adjusting monitoring frequency and spacing of transects) having due regard to the efficacy and cost implications of the monitoring).	Avifaunal Specialist (when required), ESCO, ECO	Carcass Search and Rescue Monitoring Programme	Construction	ESCO, ECO, Avifaunal Specialist	Frequency determined by the Avifaunal Specialist, however, the responsible person(s) on site should include observations daily	Carcass Search and Rescue Report/Checklist
Reviews of operational phase monitoring data (activity and carcass) and results to be conducted and reported on by the Avifaunal Specialist for the Project who will then make recommendations regarding the intensity and duration of the monitoring programme. Monitoring report(s) can be	ESCO, ECO, Contractor, Avifaunal Specialist (when required)	Avifaunal specialist to conduct a review of the operational phase monitoring data.	Construction	ESCO, ECO, Avifaunal Specialist (when required)	The frequency of the review of operational phase monitoring data is to be determined by the Avifaunal Specialist.	Avifaunal specialist to determine the reporting of the review feedback.

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
made available to stakeholders upon request provided that the reports shall be made available to BLSA, HWI, EWT and/or ORCT. • The frequency of the review of operational phase monitoring data is to be determined by the Avifaunal Specialist, and will be conducted in accordance with the applicable guidelines and regulations at the time. • The above reviews should strive to identify sensitive locations including WTGs and areas of increased collisions that may require additional mitigation						
Funding should be made available to contribute to further ongoing research on the Potberg Cape Vulture Colony and Black Harrier by recognised institutions/ organisations through consultation with those institutions/organisations already involved in these activities.	Project Manager, Proponent, Avifaunal Specialist	Research Funding Programme	Operation	Project Manager, Proponent, ESCO, ECO	To be determined by the Project Manager and Proponent	Research Funding Programme
Bird Flight Diverters (BFD) to be checked at least once a year and if necessary replaced when required.	ESCO, ECO, Avifaunal Specialist (if required)	Annual BFD monitoring programme	Operation	ESCO, ECO, Avifaunal Specialist (if required)	Annually	BFD Annual audit report
Maximum use of existing access road and servitudes.	Project Manager, Engineers, ESCO, ECO	Internal road network is finalised as per the Final Layout and already takes	Pre construction (design phase),	ESCO, ECO	Weekly	Weekly ESCO, ECO compliance reports

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		into account existing roads and servitudes.	and Construction			
Temporary fencing must be suitably constructed, e.g. if double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences	ECO, ESCO, Avifaunal specialist (when required)	Carcass Management Plan	Construction	ESCO, ECO, Avifaunal Specialist (when required)	When an avifaunal carcass is identified on site	Carcass management plan report/checklist
Roadkill is to be reported to the ECO and removed as soon as possible.	ECO, ESCO, Contractor	Regular site walk throughs and fill of any holes	Construction	ECO, ESCO	When required	ECO Compliance Reports
Any holes dug e.g. for foundations should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter	Avifaunal Specialist, E**S**CO	Avifaunal Operational Monitoring Assessment	Operation	Avifaunal Specialist, E**S**CO	Frequency Determined by the Avifaunal Specialist	Avifaunal Monitoring Report
The installation of cattle grids should be done in such a manner as to allow the escape of chicks should they fall in	ESCO, ECO, Contractor, Avifaunal Specialist (when required)	Notification of BLSA when a fatality has been found, Avifaunal Monitoring Programme	Construction	ESCO, ECO, Avifaunal Specialist (when required)	When a carcass is identified	Notification of BLSA when a fatality has been identified, Avifaunal Monitoring Programme report/checklist
Management of impact due to Collision, entrapment or entanglement						
If double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves	ESCO, ECO, Engineers, Contractor	Site Inspection to check that no larger bodies species have been trapped between the double layers of fencing	Construction	ESCO, ECO	Daily and Weekly	Site inspection, Weekly ESCO and ECO compliance reports

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
between the two fences.		(if required)				
Electrocution from Energised infrastructure						
Prevent birds from nesting in within the substation hub area (or on substation infrastructure) through exclusion covers or spikes if required (determined on a case-by-case basis).	ESCO, ECO, Avifaunal Specialist Contractor	Implement covers or spikes or appropriate technology to discourage birds from nesting in the substation infrastructure, as and when required	***Operation***	***ESCO, ECO***	***Weekly***	***Weekly ESCO, ECO compliance reports***

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Disturbance or destruction of paleontological material						
Being informed of the very high paleontological significance of the WEF area	Project Manager, Contractor, Palaeontological Specialist	The Final approved layout must be implemented	Construction	ESCO, ECO, Palaeontological Specialist (where required)	Daily monitoring to ensure the approved layout is adhered to during daily construction	The Final approved layout must be implemented

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
					operations	
The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must: • be implemented during the lifetime of the WEF, and • be included as part of the EMPr for this project.	Project Manager and Construction Manager ECO	Follow the 'Chance Find Protocol' (Appendix B – HIA Specialist Report for guidance).	Construction	ECO, ESCO, Palaeontological Specialist	When a Chance find occurs on site and a potential heritage resources identified	Chance Find Procedure report by the Palaeontological Specialist, ECO compliance report
If fossils are exposed during the lifetime of the project, a suitably qualified paleontological specialist must be appointed to collection them and to upgrade the "Chance Find Protocol" document, if required.	Project Manager and Specialist	Project Manager, ESCO, ECO, Palaeontological Specialist	Follow the 'Chance Find Protocol' (Appendix B – HIA Specialist Report for guidance).	Construction	ECO, ESCO, Palaeontological Specialist	Ongoing during design phase and construction phase
If deep (>2m) excavations into un-weathered sedimentary rocks of the Ceres Subgroup are planned as part of the construction of the WEF, these excavations must be monitored by a suitably qualified paleontological specialist.	Project Manager , ESCO, ECO, Palaeontologic al Specialist	Site observation during excavation	Construction	Palaeontological Specialist	While excavations are taking place	Excavation Site observation feedback report
Fossils finds must be reported as soon as practically possible to HWC.	Project Manager, Contractor, ESCO, ECO, Palaeontologic	Develop a procedure for reporting and ensure implemented	Construction	ECO, ESCO, Palaeontological Specialist	Ongoing during design phase and construction phase	Notify the HWC

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
	al Specialist					
Archaeology						
Each identified archaeological site within the WEF boundary (J003 – J009, G001) must be buffered by 50 m and these buffers declared no-go areas during the construction of the WEF.	Project Manager, Contractor, ESCO, ECO, Archaeological Specialist	The Heritage buffered areas are included in the Final Layout. Site inspections to ensure that construction activities do not impact or impose into these buffered areas.	Construction	Project Manager, Contractor, ESCO, Archaeological Specialist	Ongoing during the construction phase	Compliance with the Final Layout (Which accounts for these buffered aeras); weekly ESCO, ECO compliance reports
If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.	Project Manager, Contractor, ESCO, ECO, Archaeological Specialist	Implement a chance find protocol that will be signed off by the Archaeological Specialist.	Construction	Contractor, ESCO, ECO, Archaeological Specialist	Only required when archaeological material or human burials are uncovered	Contact the Archaeological Specialist and HWC when archaeological material or human burials are uncovered
Cemeteries and Graves:						
If any human burials are uncovered during development, then work in the immediate area must be halted and the remains made safe but left in situ. The finds must immediately be reported to the project archaeologist and HWC and arrangements made for an inspection to assess how the find will be dealt with.	Project Manager, Contractor, ESCO, ECO, Archaeological Specialist	Implement a chance find protocol that will be signed off by the Archaeological Specialist.	Construction	Contractor, ESCO, ECO, Archaeological Specialist	Only required when archaeological material or human burials are uncovered	Contact the Archaeological Specialist and HWC when archaeological material or human burials are uncovered

Impact management outcome: Visual Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of Visual Impacts						
Disturbed areas to be rehabilitated / revegetated as soon as possible during the construction phase.	Contractor, ESCO, ECO	Rehabilitation and Revegetation Plan	Construction	ECO, ESCO	After the 'specific' Construction activity is completed	Weekly ESCO, ECO Compliance Reports
Temporary laydown areas and batching plants to be located away from arterial or district roads.	Contractor, ESCO, ECO	Batching area to be identified before construction commence	Construction	ECO, ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
Stockpiles to be located within approved construction footprints.	Contractor, ESCO, ECO	Identify approved footprints before construction commence	Construction	ECO, ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
Recycling and refuse bins to be provided to eliminate litter from the site.	Contractor, ESCO, ECO	Ensure bins are easily accessible throughout site	Construction	ECO, ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
On-site signage to be discrete, and billboards prohibited. Signage to be fixed against a backdrop to avoid intrusion on the skyline.	Contractor, EVO, ESCO	ESCO /ECO to monitor signage on site on a regular basis	Construction	ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
Security and other outdoor lighting to be fitted with reflectors to conceal light source and prevent light spillage.	Contractor, ESCO, ECO	Ensure mitigation measure are adhered to	Pre-construction, post construction and construction	ECO, ESCO	Daily	Site Inspections and Weekly ESCO, ECO Compliance Reports

Impact management outcome: Visual Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Use of available technology to minimise the visual effect of navigation lights, conforming with CAA requirements, where reasonably practicable.	Visual specialist, engineer, contractor	Implement CAA approved lights or relevant technology	Construction and Operation	ECO, ESCO	Daily Monitoring during Construction and weekly during Operation	Site Inspection, Weekly ESCO, ECO Compliance Reports, Grievance reports and registers from neighbours
Disturbed areas to be rehabilitated / revegetated as soon as possible after the decommissioning phase	Contractor, ECO, ESCO, Ecologist	Rehabilitation and Revegetation Plan	Construction, post construction	ECO, ESCO, Ecologist (where required)	When rehabilitation is required	Weekly ESCO, ECO Compliance Reports. Rehabilitation and Revegetation Plan
Exposed or disturbed areas to be revegetated and returned to grazing pasture or natural veld to blend with the surroundings	Contractor, Visual Specialist, Ecological Specialist, ESCO, ECO	Rehabilitation and Revegetation Plan	Construction, Post Construction	ECO, ESCO, Ecological Specialist, Visual Specialist	Continuously throughout construction and post construction	Proof of revegetated areas in post construction monitoring report or during construction in Weekly ESCO, ECO reports

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Creation of employment and business opportunities, and opportunity for skills development and on-site training.						
• Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase	Social specialist, client, ECO, ESCO	Ensure approved SEP Relevant training provided by Client	Pre-construction and during	Client, ECO, ESCO	Weekly Training	Training attendance list

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
• Where feasible, The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.			construction			
Where feasible, preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.	Project Manager, Social specialist (where required), client, ECO, ESCO	Stakeholder Engagement Plan	Construction	ECO, ESCO	The plan will describe the requirements for frequency of monitoring	Stakeholder Engagement Plan – the plan will describe what is required as evidence of compliance
Where reasonable and practical, the proponent should appoint local contractors and implement a 'locals first' policy.	Project Manager, Social specialist (where required), client, ECO, ESCO	Implementation of a 'Local's first Policy'	Construction	Social specialist (where required, ECO, ESCO	The policy will describe the requirements for frequency of monitoring	The policy will describe what is required as evidence of compliance
Where feasible, efforts should be made to employ local contactors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.	Project Manager, Social specialist (where required), client, ECO, ESCO	Implementation of a 'Local's first Policy' with the focus on BBBEE.	Construction	Social specialist (where required, ECO, ESCO	The policy will describe the requirements for frequency of monitoring	The policy will describe what is required as evidence of compliance

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Where feasible, before the construction phase commences the proponent should meet with representatives from the SM to establish the existence of a skills database for the area. If such as database exists, it should be made available to the contractors appointed for the construction phase.	Project Manager, Social specialist (where required), client, ECO, ESCO	Meet with the SM as and when required.	Construction and Operations	Project Manager, Social specialist (where required), client, ECO, ESCO	The frequency can be determined on a needs basis	Meeting minutes and attendance registers
Impacts associated with the presence of construction workers on local communities						
• Where feasible, preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase. • Where feasible, the SEP and CHSSP should include a Grievance Mechanism that enables stakeholders to report resolve incidents.	Project Manager, Social specialist (where required), ECO, ESCO, Health and Safety Officer	Implementation of a CHSSP as and when required. Health and Safety aspects will be covered by the Health and Safety Officer on site, therefore, a CHSSP is not a requirement but can be done if required.	Construction and Operation	Project Manager, Social specialist (where required), client, ECO, ESCO	The frequency can be determined on a needs basis	Meeting minutes and attendance registers and a Grievance register.
The proponent should consider the option of establishing a Monitoring Committee (MC) for the construction phase that representatives from local landowners, farming associations, and the local municipality. This MC should be established prior to commencement of the construction phase and form part of the SEP.	Project Manager, Social specialist (where required), client, ECO, ESCO	Implementation of a monitoring committee as and when required.	Construction and Operation	Project Manager, Social specialist (where required), client, ECO, ESCO	The frequency can be determined on a needs basis	Meeting minutes and attendance registers
The proponent and contractor should develop a Code of Conduct (CoC) for construction workers. The code should	Project Manager, Social specialist (where	Implementation of a Code of Conduct will likely be confirmed by the Project	Construction and Operation	Project Manager, Social specialist (where required),	The frequency can be determined on a needs basis	Implementation of a Code of Conduct will likely be confirmed by the Project

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
identify which types of behaviour and activities are not acceptable. Construction workers in breach of the code should be subject to appropriate disciplinary action and/or dismissed. All dismissals must comply with the South African labour legislation. The CoC should be signed by the proponent and the contractors before the contractors move onto site. The CoC should form part of the CHSSP.	required), Health and Safety Officer	Manager. All personal will comply to this code of conduct on site.		client		Manager. All personal will comply to this code of conduct on site. A disciplinary procedure can be implemented to manage breaches of the code of conduct. This is, however, not he requirement of the ESO or ESCO, as this will be manged by the Project manager.
The proponent and the contractor should implement an HIV/AIDS, COVID-19 and Tuberculosis (TB) awareness programme for all construction workers at the outset of the construction phase. The programmes should form part of the CHSSP.	Project Manager, Social specialist (where required), Health and Safety Officer	Implementation of an HIV/AIDS, COVID-19, and TB programme will be managed by the Health and Safety Officer on site	Construction and Operation	Health and Safety Officer	The frequency can be determined on a needs basis	Implementation of an HIV/AIDS, COVID-19, and TB programme will be managed by the Health and Safety Officer on site
• The contractor should provide transport for workers to and from the site on a daily basis. This will enable the contactor to effectively manage and monitor the movement of construction workers on and off the site. • The contractor must ensure that all construction workers from outside the area are transported back to their place of residence within 2 days for their contract coming to an end. • No construction workers, with the exception of security personnel, should be permitted to stay over-	Project Manager, Contractor	Stakeholder engagement, security, grievance form, and safety Agreements and training	Construction	Project Manager, Contractor, ECO, ESCO	Weekly	Signed agreements and training ECO, ESCO records

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
night on the site.						
Influx of Job seekers						
• The proponent should implement a policy that no employment will be available at the gate.	Project Manager, Security contractor	Security checks and measures (this is not an aspect that the ESCO or ECO will manage)	Construction and Operation	Security contractor	To be determined by the Security contractor	Security checks and measures (this is not an aspect that the ESCO or ECO will manage)
Risk to safety, livestock, farm infrastructure and farming operations						
• All farm gates must be closed after passing through. • Contractors appointed by the proponent should provide daily transport for low and semi-skilled workers to and from the site. • The proponent should implement a Grievance Mechanism that provides local farmers with an effective and efficient mechanism to address issues related to report issues related to damage to farm infrastructure, stock theft and poaching etc. • The Environmental Management Plan (EMP) must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested. • Contractors appointed by the proponent must ensure that all workers are informed at the outset of the construction phase of the	Project Manager, Contractor, ESCO, ECO	Farmer engagement, live stock management, Agreements and training, Grievance procedure and report	Construction	Project Manager, Contractor, ECO, ESCO	Daily	Signed agreements and, live stock management records, Grievance procedure and report

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
consequences of stock theft and trespassing on adjacent farms. • It is recommended that no construction workers, with the exception of security personnel, should be permitted to stay over-night on the site						
Impacts associated with on-site construction related activities						
• As far as possible, the transport of components to the site should be planned to avoid weekends, holiday periods and harvesting season. • The contractor should inform local farmers and representatives from the Swellendam Municipality (SM) and local farming association of dates and times when abnormal loads will be undertaken. • The contractor must ensure that damage caused by construction related traffic to the gravel public roads and local, internal farm roads is repaired on a regular basis throughout the construction phase. The costs associated with the repair must be borne by the contractor. • Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis, adhering to speed limits and ensuring that vehicles used to	Project Manager, Contractor	Farmer engagement, fire department engagement, management, Agreements and training	Pre-construction and during construction	Project Manager, Contractor, ECO, ESCO	Daily	Signed agreements and records, fire management plan

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
transport sand and building materials are fitted with tarpaulins or covers. • All vehicles must be road-worthy, and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. • The Contractor should ensure that workers are informed that no waste can be thrown out of the windows while being transported to and from the site. Workers who throw waste out windows should be fined. • EMP measures should be implemented to ensure farm gates are closed at all times. • EMP measures should be implemented to ensure speed limits are adhered to at all times						
Increased risk of grass fire						
• Establishment of a fire break around the construction area before work commences should be investigated. • Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas. • Smoking on site should be confined to designated areas. • Contractor should ensure that construction related activities that pose a potential fire risk, such as	Project Manager, Contractor, Health and Safety Officer	Training and Tool box talks pertaing to Fires on site and fire safety, site control signs, establish a grievance mechanism form, dust management plan	Pre-construction, during construction, operation	Project Manager, Contractor, ECO, ESCO	Daily monitoring and weekly training	Training records and registers, Site control signs, establish a grievance mechanism form, dust management plan

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high-risk dry, windy winter months. • Contractor should provide adequate fire-fighting equipment on-site, including a fire fighting vehicle. • Contractor should provide fire-fighting training to selected construction staff.						
Potential impact on property values						
e loss of high-quality agricultural land should be avoided and or minimised by careful planning in the final layout of the proposed WEF facilities.	Contractor, ECO, ESCO, Agriculture Specialist	The Final approved layout must be implemented on site	Construction	ECO, ESCO, Agriculture Specialist	Weekly	Site inspections and ECO Compliance reports

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of Noise Impacts - Recommendations						
If possible, access roads should be located further than 100m from NSR. If roads are located closer than 100m from NSR, it is recommended that construction activities be planned that these roads are not used at night	Contractor, Project Manger, Noise Specialist	The Final approved layout must be implemented don site and Construction activities must be planned to avoid activities at night (where possible)	Construction	Contractor, Project Manager, ECO, ESCO	Weekly	The Final approved layout must be implemented don site and Construction activities must be planned to avoid activities at night (where possible)
Project activities not to result in noise levels exceeding 45 dBA						
Re-evaluate the noise impact should the applicant make use of a wind turbine with a maximum SPL exceeding 110.5 dBA re 1 p	Project Manger, contractor, ESCO, ECO, Noise Specialist	Noise monitoring programme should the WTG have a maximum SPL exceeding 110.5dBa re 1 pW	Operation	ESCO, ECO, Noise Specialist	As required	Noise monitoring report
Applicant to re-evaluate the noise impact should the layout be revised (as part of an amendment process post Environmental Authorisation) where any WTG, located within 2,500 m from a confirmed NSR, are moved closer to the NSR;	Project Manger, contractor, ESCO, ECO, Noise Specialist	Should the layout be amended and the WTGs move within 2,500m from an NSR, the noise impacts must be reassessed. A Noise specialist must be appointed during the amendment process to determine the noise impact of the new WTG locations.	Only applicable for if the EA is amended.	Project Manger, ESCO, ECO, Noise Specialist	Only applicable for if the EA is amended. To be determined by the Noise Specialist	Noise Impact Assessment or an appropriate level of assessment s confirmed by the Noise specialist.
Applicant to re-evaluate the noise impact should the layout be revised (as part of an amendment process post Environmental Authorisation) where any new WTG are introduced within 2,500 m from an NSR	Project Manger, contractor, ESCO, ECO, Noise Specialist	Re evaluate the noise impact should any new WTGs be introduced within 2,500m from an NSR	Only applicable new WTGs are introduced	Project Manger, ESCO, ECO, Noise Specialist	To be determined by the Noise Specialist	Noise Impact Assessment or an appropriate level of assessment s confirmed by the Noise specialist.

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		increases, A Noise specialist must be appointed during the review process to determine the noise impact of the new WTG locations.	within 2,500m from an NSR increases			
Applicant to re-evaluate the noise impact should the layout be revised (as part of an amendment process post Environmental Authorisation) where the number of WTG within 2,500 m from an NSR are increased	Project Manger, contractor, ESCO, ECO, Noise Specialist	Should the layout be amended and the number of WTGs within 2,500m from an NSR increases, the noise impacts must be reassessed. A Noise specialist must be appointed during the review process to determine the noise impact of the new WTG locations.	Only applicable for if the number of WTGs within 2,500m from an NSR increases	Project Manger, ESCO, ECO, Noise Specialist	To be determined by the Noise Specialist	Noise Impact Assessment or an appropriate level of assessment s confirmed by the Noise specialist.
Noise monitoring to define current ambient sound levels at selected NSR before the construction phase start. • Applicant to re-evaluate the noise impact once the WTG specifications was finalised. Should noise modelling indicate noise levels higher than 45 dBA at NSR, the applicant must design a noise abatement programme (or use appropriate mitigation measures)	Project Manager, ESCO, ECO, Noise Specialist	Pre construction noise monitoring programme	Before the construction phase start	ESCO, ECO,	Pre construction, the frequency of monitoring is to be determined by the Noise Specialist	Pre construction noise monitoring report

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
that will ensure that operational noise levels are less than 45 dBA at all verified NSR						
Applicant/Environmental Offices (EO) to conduct noise monitoring when a reasonable and valid noise complaint are received from an NSR living within 2,000m from a WTG of the project.	Project Manger, ESCO, ECO, Noise Specialist	Noise Monitoring to be conducted if a noise complaint has been submitted	Within 2 months after a noise complaint is registered	ESCO, ECO, Noise Specialist	Only required when a complaint is received	Noise monitoring report and a complaints register
Noise monitoring to confirm that noise levels associated with operating WTG are less than 45 dBA at all NSR	Project Manger, ESCO, ECO, Noise Specialist	Noise Monitoring to be conducted in the first year of the WEF being operational	During the first year once the project is operational. Noise specialist to confirm need for future measurements .	ESCO, ECO, Noise Specialist	To be determined by the Noise Specialist when required	Noise monitoring report
Investigate any reasonable and valid noise complaint if registered by a receptor staying within 2,000m from the location where construction activities are taking place, or where an operational WTG are located. A complaint register, keeping a full record of the complaint, must be kept by the Project Developer;	ESCO, ECO, Contractor, Nosie Specialist (where required)	Complaints/ Grievance procedure for noise	Construction	ESCO, ECO,	Record the complaints as they come in	Complaints Register

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The contractor and Environmental Control Officer (ECO) must liaise with local NSR on how best to minimise impact and the NSR must be kept informed of the nature and duration of intended activities with regard to unavoidable noisy night-time construction activities in the vicinity of NSR (closer than 1,000 m from any identified NSR).	ESCO, ECO, Contractor, Nosie Specialist (where required)	Develop a notification board/system Inform the local Noise Sensitive Receptors (NSRs) about the type of activities taking place which may have a noise impact. Complaints Grievance procedure for noise.	Construction	ESCO, ECO,	The notification to the NSRs is dependent on when the activities are taking place. Record any complaints as they are submitted by the NSRs.	Notification of Noise activities plan, Complaints Register
Where practicable and if applicable, mobile equipment should be fitted with broadband (white-noise generators/alarms), rather than tonal reverse alarms.	Engineer, Contractor, ESCO, ECO, Noise Specialist (Where required)	Implement broadband white-noise generators/alarms	Construction	Engineer, Contractor ESCO, ECO, Noise Specialist (Where required)	Daily	Site inspections to ensure the broadband white-noise generators/alarms are working
Project activities not to result in noise levels exceeding night-time noise levels of 45 dBA						
ECO/ESCO to ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures. Engine bay covers over heavy equipment could be pre-fitted with sound absorbing material. Heavy equipment that fully encloses the engine bay should be considered, ensuring that the seam gap between the hood and vehicle body is minimised.	ECO, ESCO, Contractor	Implement an Equipment checklist procedure and correction procedure (for when an issue is identified)	Construction	ECO, ESCO, Contractor	Daily	Equipment checklist, weekly ESCO and ECO Compliance report
ECO /ESCO to include a component covering environmental noise in the Health and Safety Induction to sensitize all	ECO, ESCO, Contractor	Tool Box Talks	Construction	ECO, ESCO	Weekly	Tool Box Talks attendance registers and presentation notes

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
employees and contractors about the potential impact from noise. specially those employees and contractors that have to travel past receptors at night, or might be required to do work close (within 1,000m) to NSRs at night. This could include issues such as minimising the use of vehicle horns.						
ECO to notify NSR before night-time construction activities are to take place within 500 m from NSR (if the structures are used for residential activities during the proposed construction period).	Project Manager, Contractor, ESCO, ECO	Implementation of a notification system to all respective NSRs when there will be night time construction activities taking place	Construction activities within 1,500 m from NSR, if NSR is used for residential purposes	Construction	Only required when night time construction activities are planned	Implementation of a notification system to all respective NSRs when there will be night time construction activities taking place
Minimize night-time construction traffic at locations where the access road is closer than 100m from any NSR	ESCO, ECO, Contractor, Project Manager, Health and Safety Officer	Develop a roster /notification system for the times when drivers can drive and when they cannot drive on site. Restrict unnecessary travel at night through security checkpoints.	Construction	ESCO, ECO, Health and Safety Officers	As required when nighttime driving will be required	Maintain the notification system and roster

Impact management outcome: Traffic Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of Noise Impacts - Recommendations						
Implementation of the traffic management plan (Annexure J)	Project Manger, ESCO, ECO, Health and Safety Officer	Traffic Management Plan (Annexure J)	Construction Operation	ESCO, ECO, Health and Safety Officer	As required by the Traffic Management Plan	The Traffic Management Plan (Annexure J) will determine the appropriate monitoring / reporting system.

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

APPENDIX 2: CV OF THE EAP

Environmental Management Programme Switching Station: Phase 1

FE Overberg (Pty) Ltd
2nd Floor, Cape Town Cruise Terminal Building
V&A Waterfront, Cape Town, 8001
+27 (0)21 418 3940 • info@redrocket.energy
www.redrocket.energy

Reg No: 2020/787250/07



FINAL DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

DEVELOPMENT OF THE ON-SITE 132KV SWITCHING STATION AT LOCATED SOUTHWEST OF THE TOWN OF SWELLENDAM WESTERN CAPE PROVINCE

APPLICANT: FE OVERBERG (RF) (PTY) LTD
CONTACT: MAGDALENA LOGAN

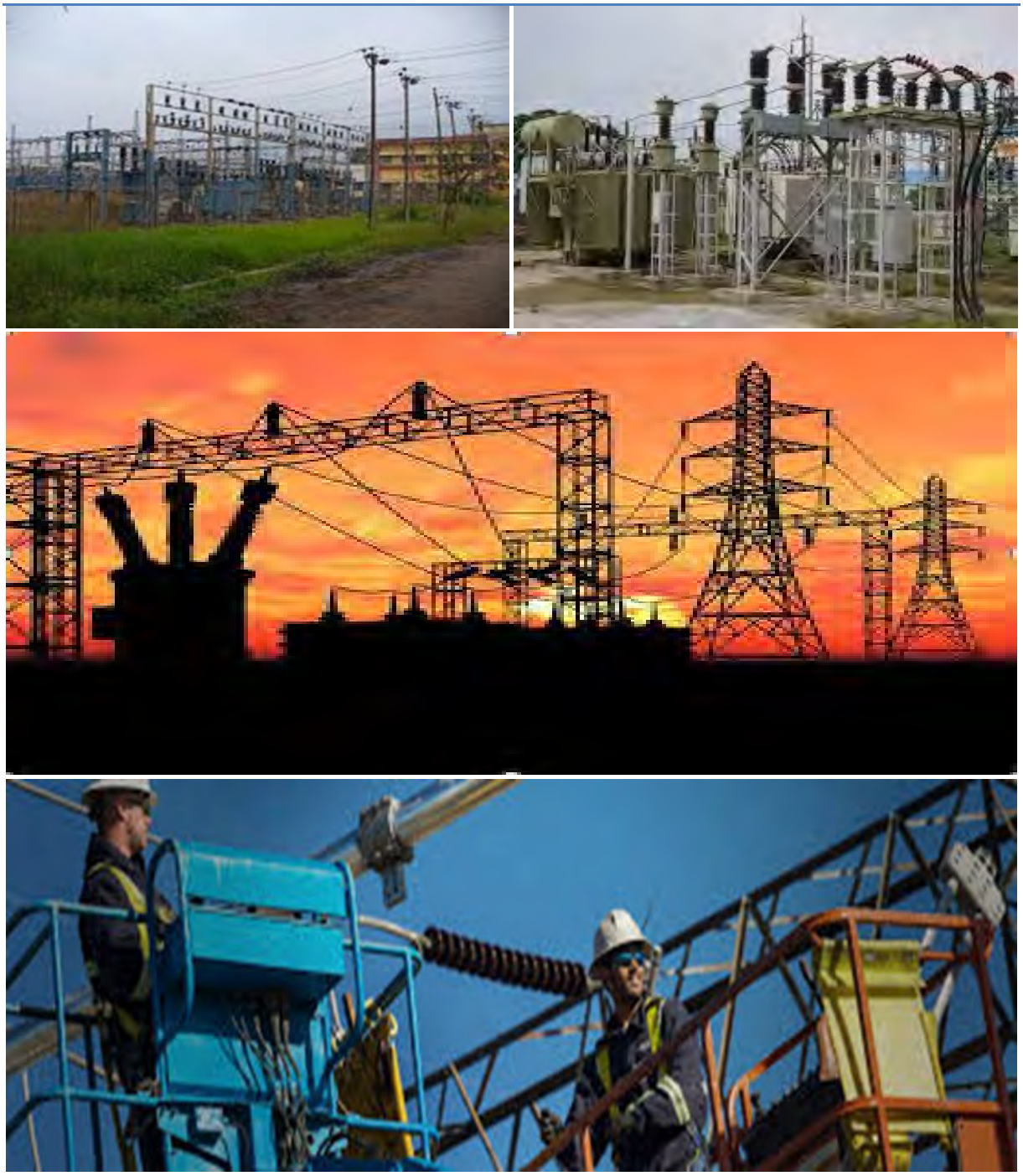
terramanzi GROUP (PTY) LTD

people. planet. prosperity.

tel: +27 21 701 5228
fax: +27 86 558 1213
mobile: +27 82 575 3800
email: info@terramanzi.co.za
website: www.terramanzi.co.za
postal: postnet suite 211, private bag X26, tokai, 7966

OCTOBER 2024

GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

TABLE OF CONTENTS

INTRODUCTION 1

1. Background 1
2. Purpose 2
3. Objective 2
4. Scope 2
5. Structure of this document 3
6. Completion of part B: section 1: the pre-approved generic EMPr template 5
7. Amendments of the impact management outcomes and impact management actions 5
8. Documents to be submitted as part of part B: section 2 site specific information and declaration 5

(a) Amendments to Part B: Section 2 – site specific information and declaration 6

PART A – GENERAL INFORMATION 2

1. DEFINITIONS 2
2. ACRONYMS and ABBREVIATIONS 3
3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION 4
4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE 10

4.1 Document control/Filing system 10
4.2 Documentation to be available 10
4.3 Weekly Environmental Checklist 10
4.4 Environmental site meetings 10
4.5 Required Method Statements 11
4.6 Environmental Incident Log (Diary) 11
4.7 Non-compliance 12
4.8 Corrective action records 13
4.9 Photographic record 13
4.10 Complaints register 13
4.11 Claims for damages 14
4.12 Interactions with affected parties 14
4.13 Environmental audits 14
4.14 Final environmental audits 15

PART B: SECTION 1: Pre-approved generic EMPr template 15

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS 15

5.1 Environmental awareness training 16
5.2 Site Establishment development 19
5.3 Access restricted areas 20
5.4 Access roads 22
5.5 Fencing and Gate installation 25
5.6 Water Supply Management 30
5.7 Storm and wastewater management 31
5.8 Solid and hazardous waste management 33
5.9 Protection of watercourses and estuaries 37
5.10 Vegetation clearing 39
5.11 Protection of fauna 43
5.12 Protection of heritage resources 46
5.13 Safety of the public 47
5.14 Sanitation 50
5.15 Prevention of disease 52
5.16 Emergency procedures 54
5.17 Hazardous substances 56
5.18 Workshop, equipment maintenance and storage 63
5.19 Batching plants 64
5.20 Dust emissions 67
5.21 Blasting 69
5.22 Noise 70
5.23 Fire prevention 72
5.24 Stockpiling and stockpile areas 74
5.25 Civil works 75
5.26 Excavation of foundation, cable trenching and drainage systems 77
5.27 Installation of foundations, cable trenching and drainage systems 79
5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches) 80
5.30 Cabling and Stringing 83
5.31 Testing and Commissioning (all equipment testing, earthing system, system integration) 84
5.32 Socio-Economic 84
5.33 Temporary closure of site 87

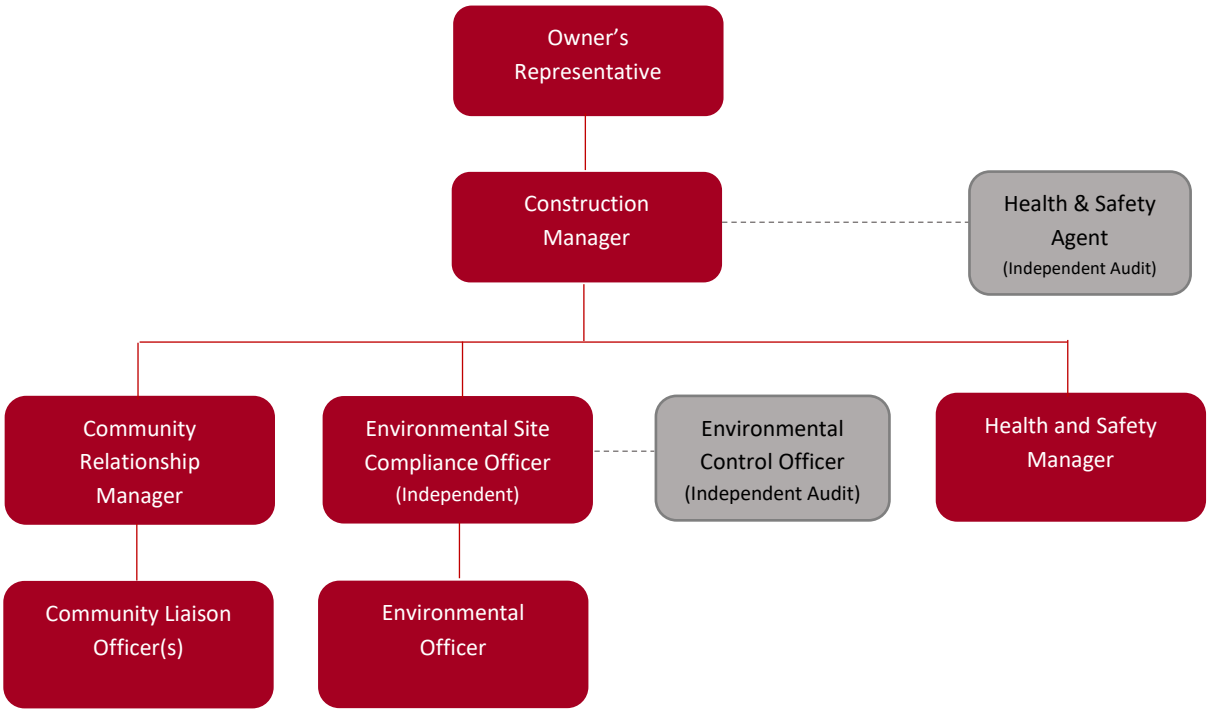
5.34 Dismantling of old equipment 91
5.35 Landscaping and rehabilitation 93
6 ACCESS TO THE GENERIC EMPr 96
PART B: SECTION 2 97
7 SITE SPECIFIC INFORMATION AND DECLARATION 97
7.1 Sub-section 1: contact details and description of the project 97
7.1.1 Details of the applicant 97
7.1.2 Details and expertise of the EAP 97
7.1.3 Project name 97
7.1.4 Description of the project 98
7.1.5 Project location: 98
7.2 Sub-section 2: Development footprint site map 103
7.3 Sub-section 3: Declaration 106
7.4 Sub-section 4: Amendments to site specific information (Part B; section 2) 106
PART C 107
8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES 107
APPENDIX 1: CV OF THE EAP 169
APPENDIX 2: METHOD STATEMENTS 170

INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority (CA).

Please kindly see below an Organogram of the Applicant Company Structure (Figure 1) and requirements for an Environmental Site Compliance Officer (ESCO):



Principle Contractors shall each appoint their own compliance management structure, including Environmental Officers, Health and Safety Management, and Community Liaison Officers, who shall report to the Project Permit Holder, who in turn provides compliance oversight and assurance.

Figure 1: Organogram of the Applicant company structure

A suitably qualified ESCO must be appointed by the Applicant to monitor the project compliance onsite on a full-time basis.

Responsibilities of the ESCO include:

- Be fully conversant with the BAR, the conditions of EA and the EMPr;
- Be fully conversant with all relevant environmental legislation and ensure compliance thereof;
- Approve method statements (co-approval with Site Manager);
- Remain employed until the completion of the construction activities; and
- Report to the Project Manager, including all findings identified onsite.

In addition, the ESCO will:

- Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation;
- Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and
- Ensure that activities onsite comply with all relevant environmental legislation.

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and all listed and specified activities necessary for the realisation of such infrastructure.

This EMPr deals with the management of impacts associated with the construction and operation of the 132kV Switching Station Substation (1.2ha) which will connect the Approved FE Overberg Wind Energy Facility (WEF) (DFFE Ref.: 14/12/16/3/3/1/2556/AM3, 26 April 2024) to the Agulhas Main Transmission Substation (MTS). The connection will be facilities by the Overberg 132kV Overhead Powerline (OHPL). The 132kV Switching Station and 132kV OHPL were initially approved in the FE Overberg WEF EA (14/12/16/3/3/1/2556/AM3, 26 April 2024), however, due to contractual obligations they were removed out of that EA and placed into their own EA (DFFE Ref to be confirmed). This Generic EMPr refers to the ***132kV Switching Station Substation which will be managed by the Applicant (FE Overberg (RF) (Pty) Ltd.)***

The project is located on various farm properties Southwest of the town of Swellendam within the Swellendam Local Municipality in the Western Cape Province.

The roles and responsibilities of this EMPr (Section 3, page 6 and 9) have been updated as per the Client's specific organogram. The additional roles and responsibilities are indicated via underlined text.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realization of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1 and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary

Part	Section	Heading	Content
			infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially, and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements

Part	Section	Heading	Content
			are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in Regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions in line with the process contemplated in Regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the property or farm in which the proposed substation infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g., threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the pre-approved 'generic EMPr' template in Section 1 and understands that the impact management outcomes and impact management actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

" clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified.

" Construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste, and wastewater management.

" contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"**Hazardous substance**" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995.

"Method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO, ESCO. The method statement must set out the equipment, materials, labour, and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO, ESCO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification.

The method statement must cover as a minimum applicable detail with regard to:

(i) Construction procedures.
(ii) Plant, materials, and equipment to be used.
(iii) Transporting the equipment to and from site.
(iv) How the plant/ material/ equipment will be moved while on site.
(v) How and where the plant/ material/ equipment will be stored.
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur.
(vii) Timing and location of activities.
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units.

"Solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food, and domestic waste (e.g., plastic packets and wrappers).

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works.

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility, and composition of the soil.

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environment Conservation Act No. 73 of 1989
ECO, ESCO	Environmental Control Officer, Environmental Site Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&APs	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities, and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO, ESCO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO, ESCO are undertaken.

Table 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person(s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	<u>Role</u> The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO, ESCO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO, ESCO to perform responsibilities, and he must ensure that the ECO, ESCO is integrated as part of the project team while remaining independent. <u>Responsibilities</u> - Be fully conversant with the conditions of the EA. - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s). - Issuing of site instructions to the Contractor for corrective actions required. - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.

Responsible Person(s)	Role and Responsibilities
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO, ESCO. The DSS is responsible for the day-to-day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO). - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO, ESCO. - Must ensure that all landowners have the relevant contact details of the site staff, ECO, ESCO and cEO. - Issuing of site instructions to the Contractor for corrective actions required. - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO, ESCO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties (RI&APs), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e., those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as be specified by the EA, report to the relevant CA as and when required.

Responsible Person(s)	Role and Responsibilities
	Responsibilities The responsibilities of the ECO will include the following: - A suitably qualified external ECO must be appointed by the Holder of the EA to audit the project compliance in terms of the EMPr and conditions of the EA on a monthly basis, during the construction phase, in line with Condition 21 of the EA. - The costs of the ECO shall be borne by the Holder of the EA (proof of appointment must be maintained onsite). - Be aware of the findings and conclusions of all EA related to the development. - Be familiar with the recommendations and mitigation measures of this EMPr. - Be conversant with relevant environmental legislation, policies, and procedures, and ensure compliance with them. - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required. - Educate the construction team about the management measures contained in the EMPr and environmental licenses. - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective. - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements. - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses. - Liaison between the DPM, Contractors, authorities, and other lead stakeholders on all environmental concerns. - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr. - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO). - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken. - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken. - Assisting in the resolution of conflicts. - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor.

Responsible Person(s)	Role and Responsibilities
	- In case of non-compliances, the ECO, ESCO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO, ESCO may report this matter to the authorities as non-compliance. - Maintenance, update, and review of the EMPr. - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr. - Be familiar with the recommendations and mitigation measures of this EMPr and implement these measures. - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s). - Confine the development site to the demarcated area. - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO). - Assist the contractors in addressing environmental challenges on site. - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared. - Assist the contractor in investigating environmental incidents and compile investigation reports. - Follow-up on pre-warnings, defects, non-conformance reports. - Measure and communicate environmental performance to the Contractor. - Conduct environmental awareness training on site together with ECO, ESCO and cEO. - Ensure that the necessary legal permits and / or licenses are in place and up to date. - Acting as Developer's Environmental Representative on site and work together with the ECO, ESCO and contractor;
Contractor	<u>Role</u>

Responsible Person(s)	Role and Responsibilities
	The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. <u>Responsibilities</u> - project delivery and quality control for the development services as per appointment. - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period. - ensure that safe, environmentally acceptable working methods and practices are implemented, and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely. - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones. - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO, ESCO.
contractor Environmental Officer (cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer, and the public. As a minimum the cEO shall meet the following criteria: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project. - Ensure all their staff are aware of the environmental requirements, conditions, and constraints with respect to all of their activities on site.

Responsible Person(s)	Role and Responsibilities
	- Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements. - Attend the Environmental Site Meeting. - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes. - Report back formally on the completion of corrective actions. - Assist the ECO, ESCO in maintaining all the site documentation. - Prepare the site inspection reports and corrective action reports for submission to the ECO, ESCO. - Assist the ECO, ESCO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.
Environmental Site Compliance Officer (ESCO)	- A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full time basis. - Responsibilities of the ESCO include: o Be fully conversant with the BAR, the conditions of EA and the EMPr; o Be fully conversant with all relevant environmental legislation and ensure compliance thereof; o Approve method statements (co-approval with Site Manager); o Remain employed until the completion of the construction activities; and o Report to the Project Manager, including all findings identified onsite. - In addition, the ESCO will: o Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; o Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; o Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and o Ensure that activities onsite comply with all relevant environmental legislation

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. As a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up to date. The filing system must be updated, and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion.
- Copy of the generic and site specific EMPr as well as any amendments thereof.
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof.
- All method statements.
- Completed environmental checklists.
- Minutes and attendance register of environmental site meetings.
- An up-to-date environmental incident log.
- A copy of all instructions or directives issued.
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record
- Complaints register.

4.3 Weekly Environmental Checklist

The ECO, ESCOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECO, ESCOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record “Matters for Attention” that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECO, ESCOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures.
- materials and equipment to be used.
- getting the equipment to and from site.
- how the equipment/ material will be moved while on site.
- how and where material will be stored.
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur.
- timing and location of activities.
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECO, ESCOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure.
- Batch plants.
- Workshop or plant servicing.
- Handling, transport, and storage of Hazardous Chemical Substance's.
- Vegetation management – Protected, clearing, aliens, felling.
- Access management – Roads, gates, crossings etc.
- Fire plan.
- Waste management – transport, storage, segregation, classification, disposal (all waste streams).
- Social interaction – complaints management, compensation claims, access to properties etc.
- Water – use (source, abstraction, and disposal), access and all related information, crossings, and mitigation.
- Emergency preparedness – Spills, training, other environmental emergencies.
- Dust and noise management methodologies.
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECO, ESCOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECO, ESCOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECO, ESCOs. (For example, a contractor's staff member littering or a drip tray that has not been emptied).
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECO, ESCOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident.
- Description of the incident.
- The name of the Contractor responsible.
- The incident must be listed as significant or minor.
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log.
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECO, ESCOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance.
- Name of the contractor responsible.
- Nature and description of the non-compliance.
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO, ESCO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECO, ESCOs. If satisfied that the corrective action has been completed, the ECO, ESCOs are to sign-off on the Corrective Action Report and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECO, ESCOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated, and a brief description note attached.

The Contractor shall:

1. Allow the ECO, ESCOs access to take photographs of all areas, activities, and actions.

The ECO, ESCOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up.
2. All bunding and fencing.
3. Road conditions and road verges.
4. Condition of all farm fences.
5. Topsoil storage areas.
6. All areas to be cordoned off during construction.
7. Waste management sites.
8. Ablution facilities (inside and out).
9. Any non-conformances deemed to be "significant".
10. All completed corrective actions for non-compliances.
11. All required signage.
12. Photographic recordings of incidents.
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECO, ESCOs shall keep a current and up-to-date complaints register. The complaints register is to be a recorded of all complaints received from communities, stakeholders, and individuals. The Complaints record shall:

1. Record the name and contact details of the complainant.
2. Record the time and date of the complaint.
3. Contain a detailed description of the complaint.
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECO, ESCOs to take relevant photographs); and

5. Contain a copy of the ECO, ESCOs written response to each complaint received and keep a of any further correspondence with the complainant. The ECO, ESCO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO, ESCO and affected party. Where a damage claim is issued by the complainant, the ECO, ESCOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECO, ESCOs shall:

1. Record the full detail of the complaint as described in (**section 4.10**) above.
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval.
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO, ESCO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECO, ESCOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent, and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECO, ESCOs shall:

1. Ensure that all queries, complaints, and claims are dealt within an agreed timeframe.
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file.
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times.

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECO, ESCOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECO, ESCOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists.
- Deviations and non-compliances with the checklists.
- Non-compliances issued.
- Completed and reported corrective actions.
- Environmental Monitoring.

- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities;	ECO, ESCO / cEO / dEO	Hold environmental awareness training workshops	Pre-construction Construction	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record
– The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course:	Contractor	Scheduling of sufficient sessions through consultation with the ECO, ESCO / cEO / dEO	Pre-construction Construction	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record
– Refresher environmental awareness training is available as and when required;	cEO / dEO in consultation with the ECO, ESCO	Hold refresher environmental awareness training workshops	During the construction phase	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record
– All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;	cEO / dEO	Hold training workshops and ensure that the EA and EMPr is readily available	During the construction phase	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering.	Contractor	Develop and place appropriate posters at key locations	Pre-construction Construction	ECO, ESCO dEO cEO	Monthly	Photographic record
– Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities. b) Mitigation measures to be implemented when carrying out specific activities. c) Emergency preparedness and response procedures. d) Emergency procedures. e) Procedures to be followed when working near or within sensitive areas. f) Wastewater management procedures. g) Water usage and conservation. h) Solid waste management procedures. i) Sanitation procedures. j) Fire prevention; and k) Disease prevention.	cEO / dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO, ESCO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO, ESCO / cEO / dEO	Filing system including all proof of training (i.e., attendance register and training minutes / notes for the record)	During the construction phase	ECO, ESCO dEO	Monthly	Completed and up to date filing system with proof of training
– Educate workers on the dangers of open and/or unattended fires;	cEO / dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the dangers of open and/or unattended fire	Pre-construction Construction	ECO, ESCO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– A staff attendance registers of all staff to have received environmental awareness training must be available.	ECO, ESCO / cEO / dEO	Filing system including all proof of training (i.e., attendance register)	During the construction phase	ECO, ESCO dEO	Monthly	Completed and up to date filing system inclusive of all attendance registers
– Course material must be available and presented in appropriate languages that all staff can understand.	ECO, ESCO / cEO / dEO	Develop environmental awareness training material in the required languages.	During the construction phase	ECO, ESCO dEO	Monthly	Environmental awareness training material requirements checklist and the

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		Training material must by readily available to all staff				training register which must indicate the language of the training

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimized during site establishment and the development footprint are kept to demarcated development area.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment	Contractor	Development of an appropriate method statement	Pre-construction	ECO, ESCO dEO	Once, prior to construction	Availability of the method statement which complies with the minimum requirements listed

cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;						
– Location of construction camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;	DPM	Place construction camps outside of sensitive areas identified in the Basic Assessment Report	Pre-construction Construction	ECO, ESCO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas
– Sites must be located where possible on previously disturbed areas;	DPM	Place site outside of sensitive areas and within previously disturbed areas identified in the BA Report	Pre-construction	ECO, ESCO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas and placement within disturbed areas
– The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and	DPM	Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr	Pre-construction & Construction	ECO, ESCO dEO	Once, prior to construction and once during the construction of the fencing	The camp is fenced in accordance with Section 5.5 of this EMPr
– The use of existing accommodation for contractor staff, where possible, is encouraged.	Not applicable – the development of new accommodation is not proposed. Staff will be accommodated in the closet town					

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through, and any additional areas identified during development;	dEO / cEO in consultation with the ECO, ESCO	Spatially demarcate access restricted areas informed by the BA Report and specialist reports	Pre-construction	ECO, ESCO	Once, prior to construction	Access restricted areas are identified and provided in a spatial format
– Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and	dEO / cEO in consultation with the ECO, ESCO	Erect appropriate temporary barriers around access restricted areas	At the commencement and for the duration of the construction phase	ECO, ESCO	Monthly	Access restricted areas are closed-off through temporary barriers and barriers are maintained to a sufficient standard
– Unauthorised access and development related activity inside access restricted areas is prohibited.	Contractor / dEO / cEO	Erect appropriate temporary barriers around access restricted areas and provide clear signage of restricted status	During the construction phase	ECO, ESCO	Monthly, and as and when required	Photographic evidence and notes of compliance that no unauthorised access or activities has taken place within the access restricted areas

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An access agreement must be formalized and signed by the DPM, Contractor and landowner before commencing with the activities;	DPM Contractor	Develop access agreements with the affected landowners. Ensure that agreements are approved and signed	Pre-construction	dEO ECO, ESCO	Once, prior to construction	Availability of approved and signed negotiations
– All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition	Contractor	Undertake maintenance activities on private roads used for construction as degradation takes place	During the construction phase	cEO / ECO, ESCO	Weekly	Photographic record of the pre-construction condition and degradation of roads, and records of the implementation and effectiveness of maintenance activities

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All contractors must be made aware of all these access routes.	dEO / cEO	Develop a map illustrating all access routes associated with the project and present and provide the map to all contractors	Pre-construction Construction	ECO, ESCO	Once, prior to construction	Access routes map readily available
– Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;	Contractor	All access routes developed that are not in-line with the access route agreements must be closed and re-habilitated to the pre-disturbance state	Construction and Rehabilitation	ECO, ESCO	Bi-weekly (every two weeks)	Photographic record of the closure of access roads and re-vegetation
– Maximum use of both existing servitudes and existing roads must be made to minimise further disturbance through the development of new roads;	Contractor (and Eskom maintenance staff where relevant to operation)	Existing access routes to be used must be specified and the development of new roads must be avoided as far as possible	Construction and operation	cEO, ESCO, Operation and maintenance team	Weekly	Implementation of the approved layout

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with **section 4.9: photographic record** prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;	dEO / cEO	Record the conditions of private roads to be used (prior to use) as per the requirements of section 4.9 and agree on the required condition of the roads with the landowner, DPM and contractor	During the construction phase	ECO, ESCO	Prior to the use of private roads	Photographic record and proof of the road conditions agreed upon with the relevant parties
– Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands	DPM and Contractor	Design access roads to follow fence lines and avoid vegetated areas	Pre-construction	ECO, ESCO	Once during the design and once prior to construction	Implementation of the approved layout
– Access roads must only be developed on pre-planned and approved roads.	Contractor	Construction of access roads only on pre-planned and approved access roads	During the construction phase	ECO, ESCO dEO	Once during the design and weekly during the construction of access roads	Implementation of the approved layout

5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible;	Contractor	Identify and inform all relevant staff of the existing gates to be used	Pre-construction & Construction	dEO, ESCO	Monthly	Existing gates are utilised on a frequent basis and only limited new access gates are developed
– Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record;	ECO, ESCO	Existing and new gates will be recorded and documented as per the requirements of section 4.9	During the construction phase	ECO, ESCO	Once, when the construction of all new gates has been completed	Photographic record of the existing and new gates as per the requirements of section4.9
– All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	Contractor	Ensure all relevant gates are fitted with locks and are always locked	Construction and Operation	ECO, ESCO Operation and maintenance team	Bi-weekly (every second week)	All gates are locked and no complaints from landowners are received in this regard

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– At points where the line crosses an existing fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;	dEO	Install new gates where required with the approval of the affected landowner	During the construction phase	ECO, ESCO	Once, prior to construction and during the construction phase, as and when required	New gates are installed where required
– Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	Contractor	Install gates in a manner so that there is a gap of no more than 100mm between the bottom of the gate and the ground	During the construction phase	cEO, Contractor, ESCO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
– Where gates are installed in jackal proof fencing, a suitable reinforced concrete still must be provided beneath the gate;	Contractor	Implement a reinforced concrete sill beneath gates installed for jackal proofing	During the construction phase	cEO, Contractor, ESCO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
– Original tension must be maintained in the fence wires;	Contractor	Maintain original tension of fences through required activities	During the construction phase	ECO, ESCO	Monthly	No tension reduction on fence wires

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All gates installed in electrified fencing must be re-electrified;	Contractor	Electrify gates installed in electrified fencing	During the construction phase	ECO, ESCO	Once, during the erection of the gates during the construction phase	Gates installed in electrified fencing is electrified
– All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities;	Contractor	Undertake maintenance activities on fences and barriers	During the construction phase	ECO, ESCO	Monthly	Photographic record of maintained fences and barriers
– Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable;	Contractor	Fence construction camps, batching plants, hazardous storage areas and access restricted areas	During the construction phase	ECO, ESCO	Once during the erection of fencing	Photographic record of fences erected
– Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner.	dEO/ cEO Contractor	Obtain written approval from the relevant landowner where temporary fencing is required to restrict life-stock movement	During the construction phase	ECO, ESCO	To be monitored as temporary fencing is required	Written approval to be provided by the dEO

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All fencing must be developed of high-quality material bearing the SABS mark;	Contractor	Make use of high-quality materials approved by SABS	During the construction phase	cEO, Contractor	To be monitored as fencing is erected during the construction phase	Use of high-quality materials for fencing approved by SABS
– The use of razor wire as fencing must be avoided as far as possible;	Contractor	Razor wire must not be sourced or used for the erection of fencing	During the construction phase	ECO, ESCO	To be monitored as fencing is erected during the construction phase	Fences erected do not make use of razor wire
– Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;	DSS and Contractor	Ensure fenced areas are locked as required through the implementation of a formalised process. Appoint a security company	During the construction phase	cEO, Contractor	Weekly and as and when required	Fences are locked and no complaints from landowners are received. A security company is appointed
– On completion of the development phase all temporary fences are to be removed;	Contractor	Removal of all temporary fences	At the end of the Construction Phase	ECO, ESCO dEO	Once, following the completion of the construction phase	No temporary fences associated with the project is present following the completion of

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						the construction phase
– The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Contractor	Appropriate removal of all fence uprights	At the end of the Construction Phase	ECO, ESCO dEO	Once, following the completion of the construction phase	No fence uprights associated with the project is present following the completion of the construction phase

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;	Not applicable water for the project will be either sourced from municipal sources and abstraction points.					
– The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river. b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	Not applicable - water for the project will be sourced from municipal sources and abstraction points.					
– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment. b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	Contractor/dEO /cEO in consultation with the ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation

5.7 Storm and wastewater management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager;	Contractor	Implement measures for the control and management of runoff	During the construction phase	ECO, ESCO	Weekly	No mismanagement of runoff or contaminated water due to the temporary concrete batching plant
– All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	Contractor and cEO	Obtain approved absorbent material and make use of licensed waste disposal facilities for disposal of oil	During the Construction Phase	ECO, ESCO	Monthly	Availability of approved absorbent material at the construction site and proof of disposal of oil at licenses disposal facilities
– Natural stormwater runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO, ESCO;	DPM in consultation with the ECO, ESCO	Consultation between the DPM and the ECO, ESCO to determine if water can be	During the construction phase	ECO, ESCO	As and when the need arises to discharge natural stormwater	Proof of consultation between the DPM and ECO, ESCO and the outcomes

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		discharged directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge			runoff and clean water	thereof to be provided. Proof of water quality testing and the results thereof.
– Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO, ESCO.	DPM in consultation with the ECO, ESCO	Consultation between the DPM and the ECO, ESCO to determine if water can be discharged directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge	During the construction phase	ECO, ESCO	As and when the need arises to discharge water	Proof of consultation between the DPM and ECO, ESCO and the outcomes thereof to be provided. Proof of water quality testing and the results thereof.

5.8 Solid and hazardous waste management

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognised waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach;	Contractor	Develop and implement a waste management plan	During the construction phase	ECO, ESCO	Monthly	Implementation of the waste management plan and proof of waste management through proof of responsible disposal
– Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	Contractor	Provision of appropriate waste collection bins which are strategically placed throughout the site	During the construction phase	ECO, ESCO	Weekly	Appropriate waste collection bins are available throughout the site
– A suitably positioned and clearly demarcated waste collection site must be identified and provided;	DPM and Contractor	Identify an appropriate location for the waste collection site which must be clearly demarcated through signage and temporary fencing	Design and Construction Phase	ECO, ESCO	Once, prior to the commencement of construction	A waste collection site is appropriately placed and demarcated

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognised waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The waste collection site must be maintained in a clean and orderly manner;	Contractor	Regular collection of waste and maintenance of the area must be undertaken as per the waste requirements for the project during construction	During the Construction Phase	ECO, ESCO	Weekly	The waste collection site is maintained and clean
– Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;	Contractor	Provide separate and marked bins for the different waste types associated with the construction phase	During the Construction Phase	cEO	Weekly	Separate waste bins are available on site and waste generated is separated into the relevant bins
– Staff must be trained in waste segregation;	cEO / dEO in consultation with the ECO, ESCO	Include waste segregation as part of the environmental awareness training material.	Pre-construction Construction	ECO, ESCO	Monthly, and as and when required	Environmental awareness training material requirements checklist
– Bins must be emptied regularly;	Contractor	Bins must be emptied before reaching total	During the construction phase	ECO, ESCO	Monthly	No mismanagement of bins.

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognised waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		capacity and on a regular basis as required for the project				
– General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;	Contractor	Disposal of general waste at licensed waste disposal facilities must be undertaken as per the waste management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Hazardous waste must be disposed of at a registered waste disposal site;	Contractor	Disposal of hazardous waste at licensed waste disposal facilities must be undertaken as per the waste management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Certificates of safe disposal for general, hazardous, and recycled waste must be maintained.	Contractor	Obtain certificates for safe disposal of waste	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided and filed as part

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognised waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						of the filing system

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;	Contractor	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	During the construction phase	ECO, ESCO	Weekly	No incidents reported of spillage of pollutants into watercourses
– In the event of a spill, prompt action must be taken to clear the polluted or affected areas;	Contractor and cEO	Develop a management plan or process for implementation should a spill take place	During the construction phase	ECO, ESCO	Weekly	Feedback must be provided by the contractor in terms of how the spill was handled and photographic evidence of the feedback must be provided and kept on record
– Where possible, no development equipment must traverse any seasonal or permanent wetland	Not applicable - no wetlands are located near the site for the placement of the substation.					
– No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur;	Not applicable – no estuaries are located within the study area.					
– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;	Not applicable – no watercourses will be crossed because of the development of the substation.					

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– There must not be any impact on the long-term morphological dynamics of watercourses or estuaries;	Not applicable – the development of the substation will not have any long-term morphological impacts on watercourses as there are no watercourses present within the section of the preferred grid connection corridor where the substation will be developed.					
– Existing crossing points must be favoured over the creation of new crossings (including temporary access)	Not applicable – no new road crossings will be required for the development of substation.					
– When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction. No altering of the bed, banks, course, or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g., including ensuring that construction equipment is well maintained. c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e., sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.	Contractor	Activities undertaken near watercourses must be in-line with and consider the specified environmental controls	During the construction phase	ECO, ESCO	Monthly, and as and when required	No degradation of the watercourses and no incidents of destruction reported

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General:						
– Indigenous vegetation which does not interfere with the development must be left undisturbed;	cEO and contractor	Demarcate areas of indigenous vegetation to be avoided before clearance is undertaken	Construction and operation (i.e., for maintenance purposes)	ECO, ESCO Operation and maintenance team	Weekly, and as and when required	No unnecessary clearance of indigenous vegetation is undertaken
– Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;	Contractor	Demarcate areas containing protected or endangered species to be avoided by construction activities	During the Construction Phase	ECO, ESCO	Weekly, and as and when required	No clearance of protected or endangered species other than those permitted to be removed
– Search, rescue, and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;	Relevant specialist in consultation with the Contractor	Develop and implement a Plant Search and Rescue Plan	Pre-construction & Construction	ECO, ESCO	Weekly, and as and when required	Implementation of the Plant Search and Rescue Plan and photographic evidence and notes of the

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						implementation of the plan
– Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed;	DPM	Undertake the permitting process in order to obtain the relevant permits for the removal of protected species. Permits must be kept on file	Pre-construction	ECO, ESCO	Once, prior to the commencement of the construction phase and removal of the protected species	Permits on file
– The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;	ECO, ESCO	Ensure that the audit report indicates all species rescued and replanted and provides feedback in terms of compliance with the conditions of permits for replanting	During the Construction Phase and following the completion of the Construction Phase	ECO, ESCO	Once, prior to the commencement of the construction phase and removal of the protected species	Specialist report

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Trees felled due to construction must be documented and form part of the Environmental Audit Report;	ECO, ESCO	Ensure that the audit report documents the details of trees felled	During the Construction Phase and following the completion of the Construction Phase	Not Applicable		
– Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	Contractor	Felled trees, vegetation cuttings and debris must be disposed of at a licensed waste disposal facility	During the Construction Phase	ECO, ESCO	Monthly	No felled trees, vegetation cuttings and debris are dumped in inappropriate locations and disposal certificates are available as proof of responsible disposal
– Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained;	DPM and Contractor	A suitably qualified pest control operator must be appointed	Construction and Operation	ECO, ESCO	As and when the use of herbicides is required	Only registered pest control operators must be appointed, and proof of their registration must be provided

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A daily register must be kept of all relevant details of herbicide usage;	Contractor	Develop a daily register for the documentation of the details of herbicide usage	During the construction phase	ECO, ESCO	Monthly	Daily register provided by the pest control operator
– No herbicides must be used in estuaries	Not applicable - no estuaries are present within the study area					
– All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance with ***Section 5.3: Access restricted areas.***	Contractor in consultation with the cEO	Spatially demarcate protected species and sensitive vegetation and implement appropriate fencing where required as per section 5.3	During the construction phase	ECO, ESCO	Once, during the undertaking of the demarcation of the areas and the erection of the fencing	Demarcation and fencing are undertaken in-line with the requirements of section 5.3
– Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.	Contractor	Remove all alien invasive vegetation and dispose of the removed vegetation at a licensed waste management facility	During the construction phase	ECO, ESCO	Monthly, and as and when required	Disposal certificates of disposal at licensed facilities to be provided and filed as part of the filing system

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;	dEO / cEO Contractor	Develop a procedure for dealing with livestock within the affected properties	Pre-construction and during the construction phase	ECO, ESCO	Once, prior to the commencement of construction and as and when required during the construction phase	Written consent provided by the landowner and proof of representation of the landowner during interference
– The breeding sites of raptors and other wild birds' species must be taken into consideration during the planning of the development programme;	dEO / cEO in consultation with the Contractor	Ensure that the planning and development programme considers breeding sites for wild bird species	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	The planning and development programme which includes the consideration of breeding sites for wild bird species
– Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present;	dEO / cEO in consultation with the Contractor	Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledgelings	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Weekly, and as and when required during the construction. Monthly, and as and when	Photographic record of intact breeding sites

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
					required during operation	
– Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;	dEO / cEO in consultation with the Contractor	All mitigation measures recommended by the avifauna specialist must be implemented	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Weekly during construction and monthly during operation	Photographic record of compliance and successful implementation of the recommended measures
– No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;	dEO / cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of poaching are reported

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No deliberate or intentional killing of fauna is allowed;	dEO / cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of deliberate or intentional killing are reported
– In areas where snakes are abundant, snake deterrents are to be deployed on the pylons to prevent snakes climbing up, being electrocuted, and causing power outages; and	dEO / cEO in consultation with the Contractor	Implement and maintain snake deterrents in areas where snakes are abundant	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Once, during the construction and as and when required. Monthly during operation	Photographic record of the implementation and maintenance of snake deterrents
– No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004), and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.	DPM in consultation with the dEO	Undertake a permitting process to obtain the required permits	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Permits for removal and/relocation must be kept on

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
					and as and when required	file and be readily available

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate, and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in **Section 5.3: Access restricted areas;**	No significant and sensitive Heritage and Palaeontological areas identified in the specialist assessment.					
– Carry out general monitoring of excavations for potential fossils, artefacts, and material of heritage importance;	Suitably qualified specialist in consultation with the ECO, ESCO	Appoint a suitably qualified specialist to carry out the monitoring of excavations for fossils, artefacts, and important heritage material	During the Construction Phase	ECO, ESCO	During the undertaking of excavations of fossils, artefacts, and heritage material	Proof of appointment of a suitably qualified specialist and photographic record of required

Impact management outcome: Impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						monitoring by the specialist
– All work must cease immediately, if any human remains and/or other archaeological, palaeontological, and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.	dEO / cEO in consultation with the Contractor and ECO, ESCO	Develop and implement procedures for situations where human remains, archaeological, palaeontological, or historical material are uncovered	During the Construction Phase	ECO, ESCO	Weekly, during the construction phase and as and when required	Proof of work ceased, and the required procedures followed in cases where material is discovered.

5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm, or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate, and restrict public access to these areas as well as notify the local authority of any potential threats e.g., large brush stockpiles, fuels etc.;	cEO in consultation with the Contractor	Develop an Emergency Preparedness,	Pre-construction Construction	ECO, ESCO	Once, prior to the commencement	Compliance with the Emergency Preparedness,

Impact management outcome: All precautions are taken to minimise the risk of injury, harm, or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		Response and Fire Management Plan specific to the project			of construction and weekly during the construction phase	Response and Fire Management Plan
– All unattended open excavations must be adequately fenced or demarcated;	Contractor	Ensure that all excavations undertaken is fenced and demarcated within a reasonable timeframe and in instances where excavations will be open for long-periods of time	During the Construction Phase	ECO, ESCO	Weekly	Excavations are fenced where required and photographic proof can be provided
– Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed infrastructure and protective scaffolding;	Contractor	All staff must be easily identifiable, and the climbing of infrastructure and scaffolding must be undertaken by authorised personnel as	During the construction phase	ECO, ESCO	Monthly, and as and when required	No incidents of unauthorised climbing are reported

Impact management outcome: All precautions are taken to minimise the risk of injury, harm, or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		managed by the Contractor				
– Ensure structures vulnerable to high winds are secured;	Contractor	Ensure that sufficient stabilisation measures are implemented to secure structures vulnerable to high winds	During the construction phase	ECO, ESCO	Weekly, and as and when required	No incidents of unstable structures due to high winds is reported
– Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	cEO	Compile and regularly update as incidents and complaints are submitted from the public and indicate the actions taken to resolve the complaint	During the construction phase	ECO, ESCO	Monthly, and as and when required	The incidents and complaints register are complete and provides all the required details

5.14 Sanitation

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available;	Contractor	Mobile chemical toilets must be placed appropriately and in areas which avoid environmental sensitivities	During the Construction Phase	ECO, ESCO	Weekly	Mobile toilets are installed and avoid environmental sensitivities
– The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;	Contractor in consultation with the cEO	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement.	Pre-construction & Construction	ECO, ESCO	Monthly, and as and when required	No evidence of non-compliance identified
– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body. b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause.	Contractor in consultation with the cEO	The installation of the toilets by the Contractor must be as per the listed requirements	During the Construction Phase	ECO, ESCO	Weekly	No evidence of non-compliance identified

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
c) No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr. d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. e) Toilets are emptied before long weekends and workers holidays and must be locked after working hours. f) Toilets are serviced regularly, and the ECO, ESCO must inspect toilets to ensure compliance to health standards;						
– A copy of the waste disposal certificates must be maintained.	Contractor	Certificates obtained from the licensed waste disposal facility with the emptying of the toilets must be kept on file	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Certificates for waste disposal from the licensed waste disposal facility

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally friendly pest control in the camp area;	Contractor	Only environmentally friendly pest control must be used, when required	During the Construction Phase	ECO, ESCO	As and when pest control is required for the project	Contractor to provide proof of pest control used being environmentally friendly
– Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/ AIDS;	cEO / Contractor in consultation with the ECO, ESCO	The effects of sexually transmitted diseases and HIV/ AIDS must be covered in the Environmental Awareness Training	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during construction	Environmental awareness training material requirements checklist
– The Contractor must ensure that information posters on HIV/ AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/ AIDS	During the Construction Phase	ECO, ESCO	Weekly	Photographic evidence of poster placement
– Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;	cEO / Contractor in consultation with the ECO, ESCO	Information and education of sexually transmitted diseases must be covered in the Environmental Awareness Training.	Pre-construction & Construction	ECO, ESCO	Monthly	Environmental awareness training material requirements checklist

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Free condoms must be made available to all staff on site at central points;	Contractor	Placement of free condoms in mobile toilets and at the construction camps	During the Construction Phase	ECO, ESCO	Monthly	Proof of placement of free condoms by the contractor to be provided
– Medical support must be made available;	dEO / cEO in consultation with the Contractor	Ensure that designated personnel with first aid training are available on site and that first aid kits to provide medical support is readily available	Construction and Operations	ECO, ESCO	Monthly	Check the availability of first aid trained personnel and medical kits (including if these are complete in terms of supplies)
– Provide access to Voluntary HIV Testing and Counselling Services.	Contractor	Compile a HIV testing schedule and provide counselling services where required	During the Construction Phase	ECO, ESCO	Quarterly, and as and when required	Voluntary testing schedules and proof of counselling (where undertaken)

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan compiled
– The Emergency Plan must deal with accidents, potential spillages, and fires in line with relevant legislation;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project which covers accidents, potential spillages, and fires	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan includes required specifications
– All staff must be made aware of emergency procedures as part of environmental awareness training;	cEO / dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the relevant	Pre-construction	ECO, ESCO	Prior to the commencement of the environmental	Environmental awareness training material requirements checklist

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		emergency procedures			awareness training	
– The relevant local authority must be made aware of a fire as soon as it starts;	Contractor in consultation with the ECO, ESCO	Develop and include a procedure in the Emergency Preparedness, Response and Fire Management Plan for the event of a fire and the procedure to be followed for informing the local authority	Construction	ECO, ESCO	As and when a fire occurs	The local authority was informed as per the relevant procedure set out in the Emergency Preparedness, Response and Fire Management Plan
– In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17).***	Contractor	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction and Operations	ECO, ESCO	As and when a spill or leak occurs	The mitigation measures included under Section 5.17 have been adhered to

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	cEO in consultation with the Contractor	Develop a strategy of how hazardous substances can be and should be minimised	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Contractor to provide evidence of substances used for proof of compliance
– All hazardous substances must be stored in suitable containers as defined in the Method Statement;	Contractor	Develop a Method Statement for the storage of hazardous substances in suitable containers	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Photographic proof that hazardous substances are stored in suitable containers as per the requirements of the relevant Method Statements
– Containers must be clearly marked to indicate contents, quantities, and safety requirements;	Contractor	Where hazardous waste is stored, these must be clearly marked indicating the	During the Construction Phase	ECO, ESCO	Monthly	Photographic proof that containers are marked as per the requirements

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		required details of the contents				
– All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;	Contractor	Ensure that storage areas are sufficiently bunded which are of sufficient capacity to contain a spill / leak from the stored containers	During the Construction Phase	ECO, ESCO	Monthly during the Construction Phase	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity to contain a spill / leak from the stored containers
– Bunded areas to be suitably lined with a SABS approved liner;	Contractor	Ensure that bunded storage areas are suitably lined	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase	Photographic proof that bunded storage areas are suitably lined
– An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;	cEO / Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS) control sheet specific to the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complete and up to date control sheet provided by the Contractor

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	cEO / Contractor	Keep a record of all hazardous chemicals and the respective MSDS	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Record of hazardous chemicals and the respective MSDS
– All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;	cEO / Contractor	Provide training for personnel working with HCS	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	Record of training provided to personnel working with HCS
– Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;	cEO / Contractor	Develop environmental awareness training material which covers the relevant impacts and safety measures. Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous	Pre-construction & Construction	ECO, ESCO	Prior to the commencement of the environmental awareness training and monthly during the construction phase for personal protective equipment	Environmental awareness training material requirements checklist and all relevant personnel have undergone appropriate training and have access to personal protective equipment

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		substances and materials				
– The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	Contractor	Appropriate storage facilities must be constructed or obtained for the storing of diesel, other liquid fuel, oil, and hydraulic fluid	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage tanks for the project are appropriate and no incidents are reported in this regard
– The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);	Contractor	Appropriate storage facilities must be constructed or obtained for tanks as per the requirements listed	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage areas for the tanks/ bowsers for the project are appropriate and no incidents are reported in this regard
– The floor of the bund must be sloped, draining to an oil separator;	Contractor	Appropriate storage facilities must be constructed as per the requirements listed	During the Construction Phase	ECO, ESCO	Once, during construction	Bunded storage areas are constructed according to the requirements

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;	Contractor	Appropriately constructed refuelling facility must be developed as per the requirements. Drip trays must be provided for use	During the Construction Phase	ECO, ESCO cEO	Monthly Weekly	Soils at the refuelling facility are protected as required and drip trays are provided and used
– All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that empty dirty drums are stored appropriately as per the requirements	During the Construction Phase	ECO, ESCO cEO	Monthly Weekly	Drip trays or bunded areas are used for the storage of dirty drums
– No unauthorised access into the hazardous substance's storage areas must be permitted;	Contractor	Ensure through the implementation of procedures that no unauthorised access is undertaken into the storage areas	During the Construction Phase	ECO, ESCO	Monthly	Proof of the implementation of the relevant procedure must be provided by the contractor
– No smoking must be allowed within the vicinity of the hazardous storage areas;	Contractor	Inform all employees of the requirement and develop and place	During the Construction Phase	ECO, ESCO cEO	Monthly Weekly	Photographic record of the signage placed must be provided

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		relevant signage in the relevant areas				
– Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting equipment	During the Construction Phase	ECO, ESCO	Monthly	Adequate fire-fighting equipment is available and has been serviced
– Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used;	Contractor	Provide a mobile refuelling unit as well as suitable ground protection, where required	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	A mobile refuelling unit and suitable ground protection is available for use
– An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;	Contractor	Provide an appropriate spill kit for the project for the use of hazardous substances	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use
– The responsible operator must have the required training to make use of the spill kit in emergency situations;	cEO and Contractor	Provide training on the use of spill kits to the relevant employees	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Proof of training to be provided by the contractor

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;	cEO and Contractor	Provide an appropriate number of spill kits in relevant areas	During the Construction Phase	ECO, ESCO	Monthly	Proof of appropriate number of spill kits in appropriate areas to be provided by the contractor
– In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***	cEO and Contractor	Storage and disposal of contaminated soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and 5.8 of this EMPr	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Proof of storage and disposal in terms of the National Environmental Management: Waste Act must be provided. Certificates of disposal at licensed waste disposal facilities must be provided

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;	Contractor	Demarcate specific areas for the maintenance of vehicles and equipment	During the Construction Phase	ECO, ESCO	Monthly	A dedicated area for the maintenance of vehicles and machinery is used.
– During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;	Contractor	Ensure that a drip tray is available for an emergency repair required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide evidence of drip tray use for emergency repairs
– Leaking equipment must be repaired immediately or be removed from site to facilitate repair;	Contractor	Ensure that where leaking equipment is identified it is repaired immediately or removed from site for repairs	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide details of equipment repaired or removed from site
– Workshop areas must be monitored for oil and fuel spills;	cEO	Undertake regular inspections of the workshop areas for oil and fuel spills and keep an	During the Construction Phase	ECO, ESCO	Monthly	Register of inspection

Impact management outcome: Soil, surface water and groundwater contamination is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		updated register of inspection on site				
– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	Contractor	Provide an appropriate spill kit for the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use
– The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;	Contractor	Ensure that the workshop area is sufficiently bunded in accordance with the required specification	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase and as and when required	Workshop area is bunded in accordance with the required specification
– Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Storm and waste water management.***	Contractor	Ensure that water drainage from workshop area is managed as per the requirements of section 5.7	During the Construction Phase	ECO, ESCO	Monthly	Workshop drainage is managed in accordance with the requirements

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface;	Contractor	Provide impermeable surface for the mixing of concrete	During the Construction Phase	ECO, ESCO	Weekly	No concrete mixing is undertaken on open ground
– Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	Contractor	Provide containment facility for the collection of cement laden water	During the Construction Phase	ECO, ESCO	Weekly	No cement laden water is released into the environment
– Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	Contractor	Provide containment facility for the collection of cement laden water (dirty water)	During the Construction Phase	ECO, ESCO	Weekly	No cement laden water is released into the environment
– Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies, and drains;	Contractor	Demarcate and provide a storage area for bagged cement in-line with the listed requirements	During the Construction Phase	ECO, ESCO	Weekly	Photographic proof of bagged cement stored within the demarcated area
– A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provide a washout facility for the washing of associated equipment. Enforce limitations on water use for washing of equipment	During the Construction Phase	ECO, ESCO	Weekly	No cement laden water is released into the environment. Only minimal water is used for washing

– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licensed disposal facility;	Contractor	Make use of hardened concrete where possible or dispose of concrete in a suitable manner	During the Construction Phase	ECO, ESCO	Monthly	Certificates of disposal of concrete at licensed waste disposal facility
– Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;	Contractor	Bind empty cement bags and temporarily store it in an appropriate area on site	During the Construction Phase	ECO, ESCO	Monthly	Proof of binding of empty cement bags and storage in an appropriate area on site to be provided by the Contractor
– Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***)	Contractor	Ensure that sand and aggregates are kept damp or otherwise protected from dust generation	During the Construction Phase	ECO, ESCO	Monthly	Proof of damping (or alternative dust suppression) of sand and aggregates must be provided by the Contractor
– Any excess sand, stone and cement must be removed or reused from site on completion of the construction period and disposed at a registered disposal facility;	Contractor	Ensure that all excess sand, stone, and cement is removed or reused	At the completion of the Construction Phase	ECO, ESCO	Once, with the completion of construction	Certificates for the disposal of sand, stone and cement at licensed waste disposal facilities or proof of reuse must be provided
– Temporary fencing must be erected around batching plants in accordance with Section ***5.5: Fencing and gate installation.***	Contractor	Erect temporary fencing around batching plants as per the	During the Construction Phase	ECO, ESCO	Weekly	Temporary fencing is undertaken in

		requirements listed in section 5.5				accordance with section 5.5

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO, ESCO;	Contractor	Apply appropriate dust suppressant	During the Construction Phase	ECO, ESCO	Weekly	Contractor to provide proof of use of appropriate dust suppressants
– Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible;	Contractor	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	During the Construction Phase and Rehabilitation	ECO, ESCO	Weekly	Plan for implementation must be provided by the Contractor
– Excavation, handling, and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	Contractor	Ensure that specific limitations are placed on the transport and handling of erodible materials during high wind conditions or when	During the Construction Phase	ECO, ESCO	Bi-weekly (every second week)	No complaints submitted in this regard

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		a visible dust plume is present				
– During high wind conditions, the ECO, ESCO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;	ECO, ESCO	ECO, ESCO to provide adequate recommendations	During the Construction Phase	ECO, ESCO	Daily	Recommendations made by the ECO, ESCO have been implemented by the Contractor
– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor	Place soil stockpiles in areas less affected by wind	During the Construction Phase	ECO, ESCO	Bi-weekly (every second week)	Soil stockpiles are not exposed to wind and have not been eroded
– Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO, ESCO;	Contractor in consultation with the ECO, ESCO	Contractor to implement erosion control measures as recommended and agreed with the ECO, ESCO	During the Construction Phase	ECO, ESCO	Weekly, until erosion is no longer a problem	Recommendations made by the ECO, ESCO have been implemented by the Contractor
– Vehicle speeds must not exceed 30 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas:	cEO / dEO / contractor	Inform all drivers of speed limits and place appropriate signage along the relevant roads	During the Construction Phase Operation Phase	ECO, ESCO Operation and Maintenance team	Monthly	No complaints from community members are submitted

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks:	Contractor	Ensure that straw stabilisation is undertaken as per the listed requirements	During the Construction Phase	ECO, ESCO	Monthly	Photographic record of all straw stabilisation undertaken
– For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	Contractor	Appropriate dust suppressant measures are implemented	During the Construction Phase	ECO, ESCO	Weekly	Photographic record of measures being implemented and the results thereof

5.21 Blasting

Impact management outcome: Impact to the environment is minimized through a safe blasting practice.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and	Not Applicable – no blasting proposed					

Impact management outcome: Impact to the environment is minimized through a safe blasting practice.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	Not Applicable – no blasting proposed					

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;	Contractor	Ensure that noise limits do not exceed acceptable limits and avoid the use of amplification communication	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. No amplification equipment is used.
– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor	Provide and implement silencing technology	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. Silencing technology is utilised.

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;	cEO	Update complaints register. Provide daily transport to and from site for employees	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complaints register provided by the cEO and proof of transportation services provided
– Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	cEO and Contractor in consultation with the ECO, ESCO	Compile a Code of Conduct for staff. Appropriate operating hours must be identified for the project.	Pre-construction and Construction	ECO, ESCO	Once, prior to the commencement of construction	No complaints registered in this regard.

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant;	cEO / Contractor	Identify and demarcate through signage for designated smoking areas	Pre-construction & Construction	ECO, ESCO	Monthly	Photographic record of designated smoking area
– Firefighting equipment must be available on all vehicles located on site;	cEO / dEO in consultation with the Contractor	Provide all vehicles with firefighting equipment	Construction	ECO, ESCO	Monthly	All vehicles are fitted with firefighting equipment and the details thereof are provided by the cEO
– The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO in consultation with the ECO, ESCO	Undertake formal consultation to inform the local FPA of the associated construction activities	Pre-construction	ECO, ESCO	Once, during the commencement of the Construction Phase	Proof of consultation with the FPA
– Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;	dEO / cEO / Contractor in	Develop environmental awareness training	Pre-construction & Construction	ECO, ESCO	Prior to the commencement of the	Environmental awareness training material

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
	consultation with the ECO, ESCO	material which covers the contact numbers for the FPA and emergency services. Place the contact numbers for the FPA and emergency services at a visible and central location			environmental awareness training and once during the construction phase	requirements checklist and photographic record of contact numbers on display
– Two-way swop of contact details between ECO, ESCO and FPA.	ECO, ESCO	Consultation between the ECO, ESCO and FPA in order to exchange contact details	Pre-construction	Not Applicable		

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses and water bodies;	Contractor	Identify and demarcate an appropriate location for the storage of excavated materials	Pre-construction & Construction	ECO, ESCO	Monthly	Excavated material is not stored within sensitive environmental areas
– All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;	Contractor	Implement appropriate and sufficient maintenance on stockpiled material regularly	During the Construction Phase	ECO, ESCO	Bi-monthly (every second month)	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
– Topsoil stockpiles must not exceed 2 m in height:	Contractor	Enforce limitations for the height of topsoil stockpiles	During the Construction Phase	ECO, ESCO	Bi-monthly (every second month)	Topsoil stockpiles do not exceed 2m in height
– During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g., cloth, tarpaulin etc.);	Contractor	Appropriate material must be provided in order to cover stockpiles when required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of appropriate material to cover stockpiles when required

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor	Sandbags must be provided in order to prevent erosion of stockpiled materials	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of sandbags to prevent erosion of stockpiled materials

5.25 Civil works

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone;	Contractor	Collect and retain topsoil for terracing	During the Construction Phase Rehabilitation	ECO, ESCO	Weekly	Proof of collection and retaining of topsoil
– Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards;	Contractor	Undertake rehabilitation of terrace	During the Construction Phase Rehabilitation	ECO, ESCO	Weekly	Photographic record of rehabilitation of

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		embankments and areas outside of the high voltage yard where applicable				terrace embankments and areas outside the high voltage yards
– Where required, all sloped areas must be stabilised to ensure proper rehabilitation is affected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	ECO, ESCO	Weekly	Disturbed slopes are stabilised sufficiently
– These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;	Contractor	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO, ESCO	Weekly	Slopes are stabilised as per the design specifications
– Rehabilitation of the disturbed areas must be managed in accordance with ***Section 5.35: Landscaping and rehabilitation;***	Contractor	Undertaken rehabilitation of disturbed areas as per the requirements listed under section 5.35	Rehabilitation	ECO, ESCO	Weekly	Rehabilitation of disturbed areas is undertaken in-line with the requirements of section 5.35
– All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	ECO, ESCO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction and Rehabilitation	ECO, ESCO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a licensed landfill site, if not used for backfilling purposes;	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	ECO, ESCO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction and Rehabilitation	ECO, ESCO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor
– Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop, equipment maintenance and storage***; and	Contractor	Undertake the management of equipment for excavation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18
– Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances.***	Contractor	Undertake the management of hazardous substances spills from equipment as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances spills from equipment is undertaken in line with the requirements of section 5.17

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching of cement to be undertaken in accordance with ***Section 5.19: Batching plants***; and	Contractor	Undertake the batching of cement as per the requirements of section 5.19	During the Construction Phase	ECO, ESCO	Monthly	Management of batching cement is undertaken in line with the requirements of section 5.19
– Residual solid waste must be disposed of in accordance with ***Section 5.8: Solid waste and hazardous management.***	Contractor	Undertake the disposal of solid waste as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The disposal of solid waste is undertaken in line with section 5.8.

5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Management of dust must be conducted in accordance with Section ***5. 20: Dust emissions***;	Contractor	Manage dust as per the requirements of section5.20	During the Construction Phase	ECO, ESCO	Weekly	The management of dust is undertaken as per the requirements of section 5.20
– Management of equipment used for installation must be conducted in accordance with Section ***5.18: Workshop, equipment maintenance and storage***;	Contractor	Undertake the management of equipment for installation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18
– Management of hazardous substances and any associated spills must be conducted in accordance with Section ***5.17: Hazardous substances***; and	Contractor	Undertake the management of hazardous substances and associated spills as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances and associated spills is undertaken in line with the requirements of section 5.17
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management.***	Contractor	Undertake the recycling or disposal of residual solid waste as per the	During the Construction Phase	ECO, ESCO	Monthly	The recycling or disposal of residual solid waste is

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		requirements of section 5.8				undertaken in line with section 5.8.

5.29Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g., bolts and nuts	Contractor	Inspect areas where construction is being undertaken and remove and appropriately dispose of wasted/unused materials	During the Construction Phase	ECO, ESCO	Weekly	Contractor to provide proof of inspection and removal of waste/unused materials and the appropriate disposal thereof (i.e., disposal certificates)
– Emergency repairs due to breakages of equipment must be managed in accordance with ***Section 5.18: Workshop, equipment maintenance and storage*** and ***Section 5.16: Emergency procedures.***	Contractor	Undertake emergency repairs of equipment as per the requirements of section 5.18 and 5.16	During the Construction Phase	ECO, ESCO	Weekly	Emergency repairs of equipment is undertaken as per the requirements of section 5.18 and 5.16

5.30 Cabling and Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with Section ***6.8: Solid waste and hazardous Management;***	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.
– Management of equipment used for installation shall be conducted in accordance with ***Section 5.18: Workshop, equipment maintenance and storage;***	Contractor	Undertake the management of equipment for installation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment for installation is undertaken in line with the requirements of section 5.18
– Management of hazardous substances and any associated spills shall be conducted in accordance with ***Section 5.17: Hazardous substances.***	Contractor	Undertake the management of hazardous substances and associated spills as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances and associated spills is undertaken in line with the requirements of section 5.17

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Impact management outcome: No environmental degradation occurs as a result of Testing and Commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management.***	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.

5.32 Socio-Economic

Impact management outcome: enhanced socio-ECO, ESCO development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation;	dEO / cEO	Identify and implement appropriate strategies for communication	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly	Communication is undertaken as per the identified strategies and no complaints are

Impact management outcome: enhanced socio-ECO, ESCO development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		with the communities through consideration of the community needs			during the construction	submitted regarding communication
– Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;	Contractor	Development and implement a Grievance Mechanism which considers the community needs and provides procedures for conflict resolution	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Conflict resolution is undertaken in line with the requirements of the Grievance Mechanism. No complaints on conflict resolution are submitted by the community
– Sustain continuous communication and liaison with neighbouring owners and residents	Contractor	Development and implement a Grievance Mechanism which provides procedures for communication / liaison with	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Communication / liaison with neighbouring landowners and residents are undertaken in line with the requirements of

Impact management outcome: enhanced socio-ECO, ESCO development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		neighbouring landowners and residents				the Grievance Mechanism. No complaints on communication with neighbouring landowners and residents is submitted
– Create work and training opportunities for local stakeholders; and	Contractor	Develop and implement a "locals first" policy for the provision of employment opportunities	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	The "locals first" policy is considered in terms of the employment and training opportunities
– Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	Not Applicable - no workers, other than security is proposed to stay on-site overnight.					

5.33 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage;***	Contractor	Regular emptying of the bunds must be undertaken. This must be undertaken as per the requirements listed in sections 5.17 and 5.18	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirements listed under sections 5.17 and 5.18
– Hazardous storage areas must be well ventilated;	Contractor	Install appropriate ventilation in all hazardous storage areas	During the construction phase	ECO, ESCO	Prior to site closure for more than 05 days	Effective ventilation is installed in hazardous storage areas
– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor / cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure service records	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		are kept up to date and filed				
– Emergency and contact details displayed must be displayed;	Contractor / cEO	Place emergency and contact details which are readily available and easily accessible	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Photographic proof of contact details on display
– Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;	Contractor in consultation with the ECO, ESCO	Hold a workshop with all security personnel to provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel	Pre-construction & construction	ECO, ESCO	Prior to site closure for more than 05 days	Proof of the workshop held must be kept on file by the contractor.
– Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;	Contractor	Regular checks of night hazards	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of checks of night hazards

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		must be undertaken				must be provided by the contractor
– Fire hazards identified and the local authority must have been notified of any potential threats e.g., large brush stockpiles, fuels etc.;	cEO / Contractor in consultation with the ECO, ESCO	Identify any potential fire hazards and notify the relevant local authority	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of notification of the fire hazards to the local authority must be provided by the Contractor
– Structures vulnerable to high winds must be secured;	Contractor	Ensure structures vulnerable to wind is secure prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Structures vulnerable to wind is secured prior to site closure
– Wind and dust mitigation must be implemented;	Contractor	Implement wind and dust mitigation prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Wind and dust mitigation is implemented prior to site closure
– Cement and materials stores must have been secured;	Contractor	Ensure cement and material stores are secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Cement and material stores are secured prior to site closure

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Toilets must have been emptied and secured;	Contractor	Ensure toilets are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Toilets are emptied and secured prior to site closure
– Refuse bins must have been emptied and secured;	Contractor	Ensure refuse bins are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Refuse bins are emptied and secured prior to site closure
– Drip trays must have been emptied and secured.	Contractor	Ensure drip trays are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Drip trays are emptied and secured prior to site closure

5.34 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage, and disposal of old equipment commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment;	Contractor	Appropriately store old equipment in a manner which prevents pollution to the environment. This could include the construction of bunded areas	Decommissioning	ECO, ESCO	Monthly	Photographic record of appropriate storage of old equipment
– Oil containing equipment must be stored to prevent leaking or be stored on drip trays;	Contractor	Appropriately store equipment containing oil through the use of drip trays or other suitable methods	Decommissioning	ECO, ESCO	Monthly	Photographic record of appropriate storage of equipment containing oil
– All scrap steel must be stacked neatly, and any disused and broken insulators must be stored in containers;	Contractor	Ensure all scrap steel is stacked neatly and store disused and broken insulators in appropriate containers	Decommissioning	ECO, ESCO	Monthly	Photographic record of stacked scrap steel and containers containing broken and disused insulators

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage, and disposal of old equipment commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment;	Contractor	Develop and implement a procedure for the dismantling and transportation of equipment containing pollution causing substances which prevents spillage and pollution of the environment	Decommissioning	ECO, ESCO	Monthly	Proof from contractor that dismantling and transportation of equipment containing pollution causing substances has been undertaken in an appropriate manner
– The Contractor must also be equipped to contain and clean up any pollution causing spills; and	Contractor	Ensure sufficient spill kits are available for the clean-up of pollution causing spills	Decommissioning	ECO, ESCO	Monthly	Sufficient spill kits are available on site
– Disposal of unusable material must be at a licensed waste disposal site.	Contractor	Make use of a licensed waste disposal site	Decommissioning	ECO, ESCO	Monthly	Certificates obtained for the disposal at a licensed waste disposal site

5.35 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site;	Contractor	Develop and implement a rehabilitation plan for the rehabilitation of all disturbed areas. Dispose of all spoil and waste at a licensed waste disposal facility	Pre-construction & Rehabilitation	ECO, ESCO	Weekly	Rehabilitation of the disturbed areas is undertaken as per the rehabilitation plan. All certificates of waste disposal at licensed facilities are available.
– All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether contouring is required	Rehabilitation	ECO, ESCO	Weekly	All slopes are assessed and contoured as required
– All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether terracing is required	Rehabilitation	ECO, ESCO	Weekly	All slopes are assessed and terraced as required
– Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;	Contractor	Ensure all berms have a slope of 1:4 and is replanted	Rehabilitation	ECO, ESCO	Weekly	All berms have a slope of 1:4 and is replanted with indigenous

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		with indigenous species and grasses				species and grasses
– Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;	Not applicable					
– Rehabilitation of access roads inside of farmland;	Not applicable					
– Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Make use of indigenous species for rehabilitation	Rehabilitation	ECO, ESCO	Weekly	Indigenous species are used for rehabilitation
– Stockpiled topsoil must be used for rehabilitation (refer to ***Section 5.24: Stockpiling and stockpiled areas***);	Contractor	Ensure stockpiled topsoil is used as per the requirements listed under section 5.24	Rehabilitation	ECO, ESCO	Weekly	Stockpiled topsoil is used as per the requirements listed under section 5.24
– Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;	Contractor	Ensure that topsoil is spread evenly	Rehabilitation	ECO, ESCO	Weekly	Topsoil is spread evenly
– Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	Contractor	Remove all visible weeds from placement area and topsoil before spreading the topsoil	Rehabilitation	ECO, ESCO	Weekly	No weeds are visible in the placement area or the topsoil

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Subsoil must be ripped before topsoil is placed;	Contractor	Undertake the ripping of subsoil prior to the spreading of topsoil	Rehabilitation	ECO, ESCO	Weekly	Subsoil is ripped before topsoil is placed
– The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;	Contractor	Plan the timeframe for rehabilitation in order to undertake vegetation planting during the optimal time for vegetation establishment	Rehabilitation	ECO, ESCO	At the start of rehabilitation to confirm the correct timeframe	Rehabilitation is undertaken during the optimal time
– Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	ECO, ESCO	Weekly	Disturbed slopes are stabilised sufficiently
– Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;	Contractor	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO, ESCO	Weekly	Slopes are stabilised as per the design specifications
– Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil.	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Rehabilitation	ECO, ESCO	Weekly	Photographic record of spoil used for landscaping purposes as well

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						as feedback from the contractor
– Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen. b) Pioneer species are included. c) Species chosen must be indigenous to the area with the seeds used coming from the area. d) Root systems must have a binding effect on the soil. e) The final product must not cause an ecological imbalance in the area	Contractor in consultation with a suitably qualified specialist	Make use of a suitable vegetation seed mixture should enhancement be required	Rehabilitation	ECO, ESCO	As and when required	Use of a suitable vegetation seed mixture if required

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of Regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant

PROJECT APPLICANT DETAILS	
DEVELOPMENT ENTITY	
Applicant Name	FE Overberg (RF) (Pty) Ltd
Responsible Person	Mr Matteo Giulio Luigi Brambilla
Address	14th Floor Pier Place Heerengracht Street Foreshore Cape Town 8001
Contact Details	+27 (0)21 418 3940 (T) +27 (0)72 212 1531 (C) Email: m.logan@redrocket.energy

7.1.2 Details and expertise of the EAP

Details and expertise of the EAP:	
EAP Name	Fabio Venturi - Terramanzi Group (Pty) Ltd
EAP Qualifications	BSc (Hons) Zoology , 20 years' experience as an environmental practitioner
Professional Affiliation/Registration	EAPASA(2021/4088)
Physical Address	16 Bell Crescent, Westlake, Cape Town, 7945
Telephone	021 701 5228
Cell phone	082 575 3800
Email Address	fabio@terramanzi.co.za

The EMPr was authored and signed off by: Fabio Venturi (Terramanzi Group - EAPASA 2021/4088)
The EMPr was reviewed by:

- Tarryn Frankland (Terramanzi Group - EAPASA Candidate 2022/6205)
- Ludwig Van Der Merwe (Terramanzi Group - EAPASA 2020/2817
- Ana Mosse (Terramanzi Group - EAPASA Candidate)
- Bryan Cloete (Terramanzi Group - EAPASA Candidate)
- Chane Olckers (Terramanzi Group)

7.1.3 Project name

The 132kV Switching Sation Substation located Southwest of the town of Swellendam within the Swellendam Local Municipality in the Western Cape Province.

7.1.4 Description of the project

This EMPr deals with the management of impacts associated with the construction and operation of the 132kV Switching Station Substation (1.2ha) which will connect the Approved FE Overberg Wind Energy Facility (WEF) (DFFE Ref.: 14/12/16/3/3/1/2556/AM3, 26 April 2024) to the Agulhas Main Transmission Substation (MTS). The connection will be facilities by the Overberg 132kV Overhead Powerline (OHPL). The 132kV Switching Station Substation and 132kV OHPL were initially approved in the FE Overberg WEF EA (14/12/16/3/3/1/2556/AM3, 26 April 2024), however, due to contractual obligations they were removed out of that EA and placed into their own EA (DFFE Ref to be confirmed). This Generic EMPr refers to the 132kV Switching Station Substation which will be managed by the same Applicant (FE Overberg (RF) (PTY) ltd).

The 132kV Switching Station is 1.2 ha in size.

The project is located on various farm properties Southwest of the town of Swellendam within the Swellendam Local Municipality in the Western Cape Province.

Based on the findings of the professional team and the EAP, it is reasonable to suggest that the Competent Authority can approve both the revised EMPr and revised final layout as applied for.

Table 2: Details of the land parcel on which the 132kV Switching Station

Cadastral Land Parcel	SG Code	Approximate Coordinates of the Substation on land portion
Remainder of Portion 2 of the Farm Kluitjieskraal No 256	C07300000000025600002	Middle point: 34° 8'45.74"S; 20°21'13.48"E

7.1.5 Project location:

The 132kV Switching Station is located within the authorised FE Overberg WEF development area, specifically on Farm Portion: Remainder of Portion 2 of the Farm Kluiljieskraal No 256, southwest of the Town of Swellendam within the Swellendam Local Municipality in the Western Cape Province (Figure 2).

The approximate coordinates of FE Overberg Wind Energy Facility in which the proposed 132kV Switching Station will be located:

	Latitude	Longitude
Northern Boundary	34°06’21.08"S	20°17'42.66"E
Eastern Boundary	34°05'52.16"S	20°23'07.67"E
Middle Point	34°09'56.51"S	20°17'10.22"E
Southern Boundary	34°13'25.41"S	20°18'09.21"E
Western Boundary	34°09'30.87"S	20°12'30.70"E

Technical Details

The proposed project will include:

- 132kV Switching Station (1.15ha)

On-site Substation Hub Location	Approximately 2 km South-East of the planned Agulhas MTS, across the R319 with all infrastructure falling on an agricultural patch of Kluitjieskraal RE/2/256.
Total Development footprint of the On-site Substation	Up to 1.2ha
Capacity of the on-site substation	Up to 132kV

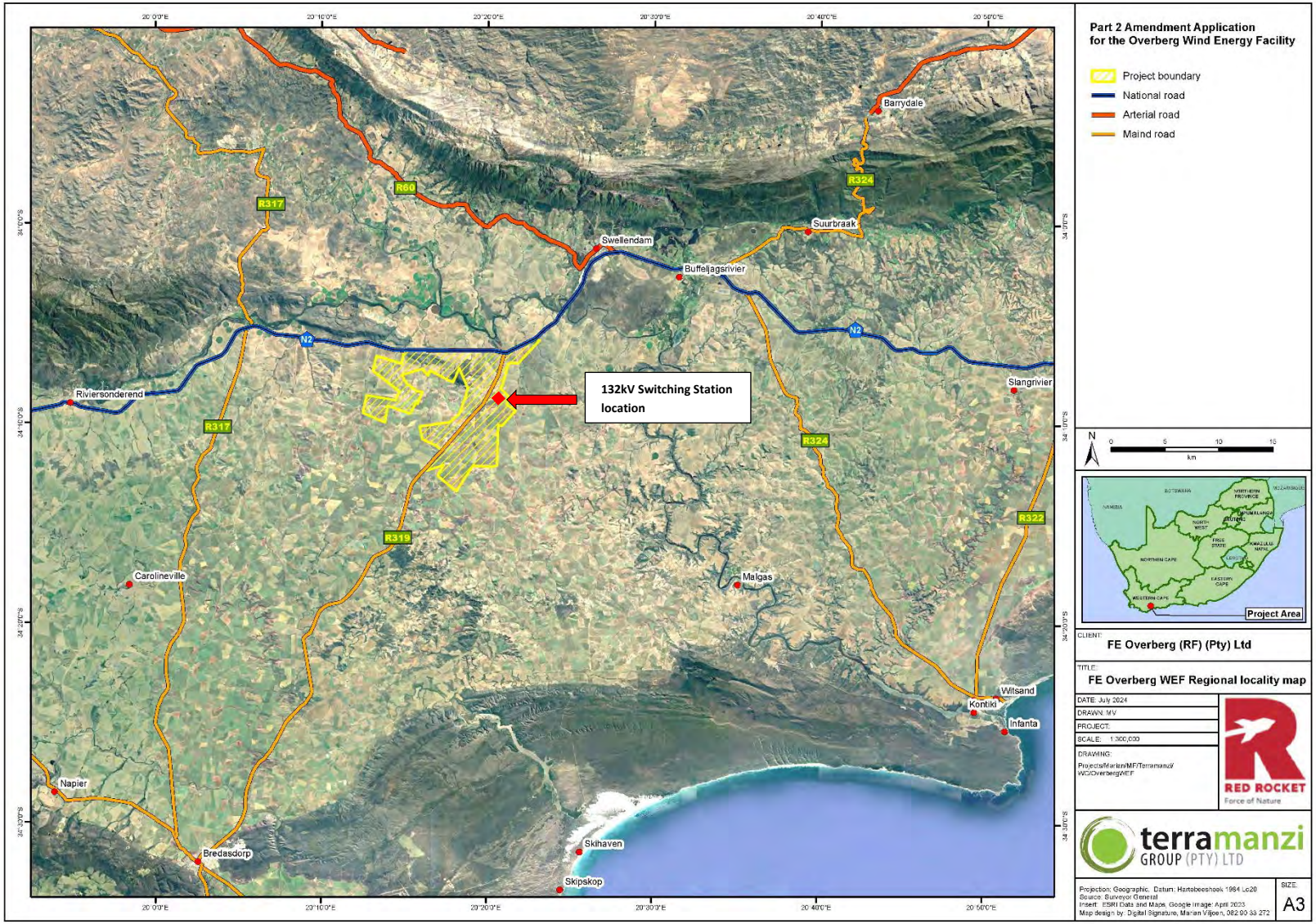


Figure 2: Regional Topographical Locality Map of the 132kV Switching Station within the FE Overberg Project Area.

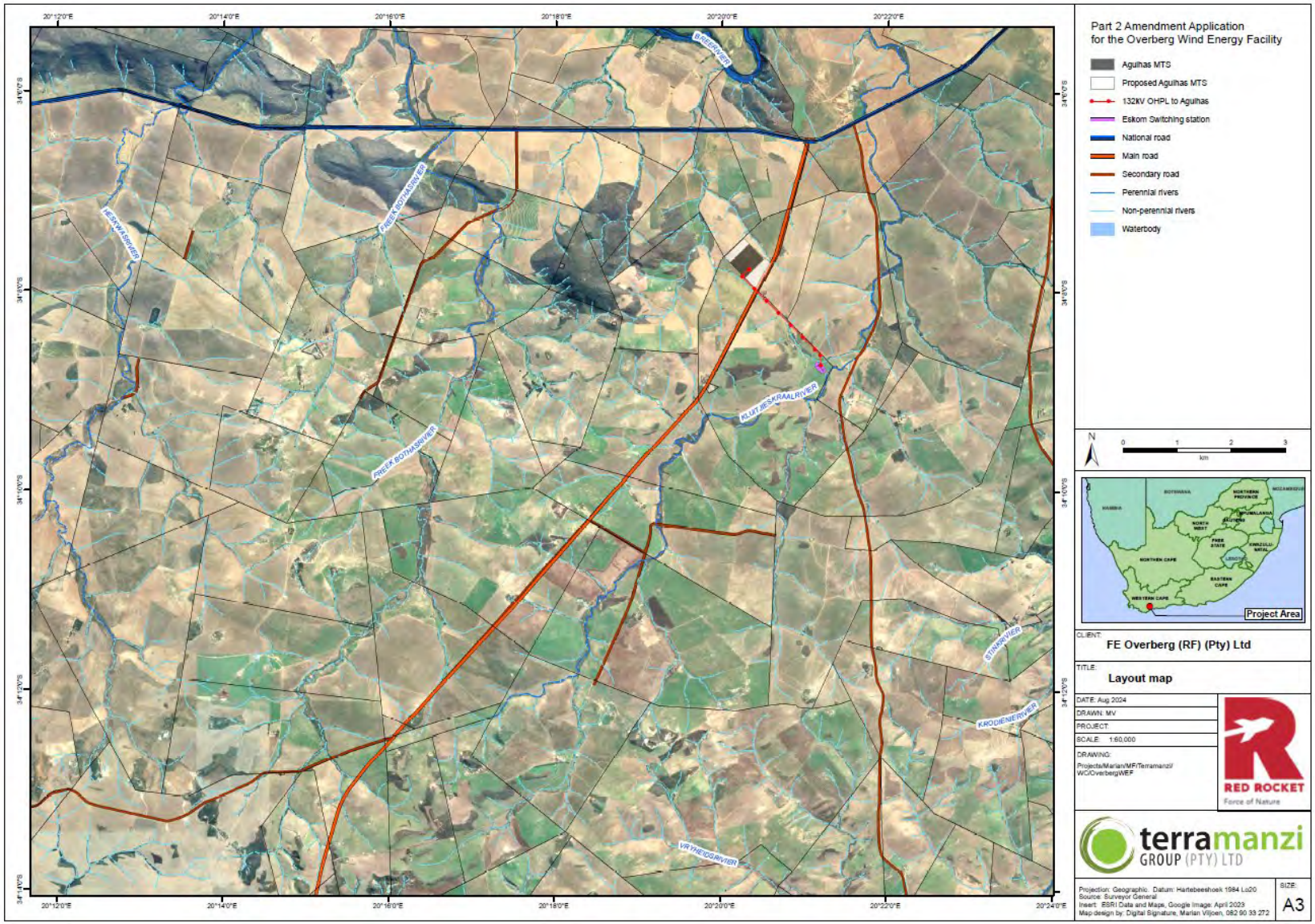


Figure 3: Layout Map for the FE Overberg WEF (11 August 2024)

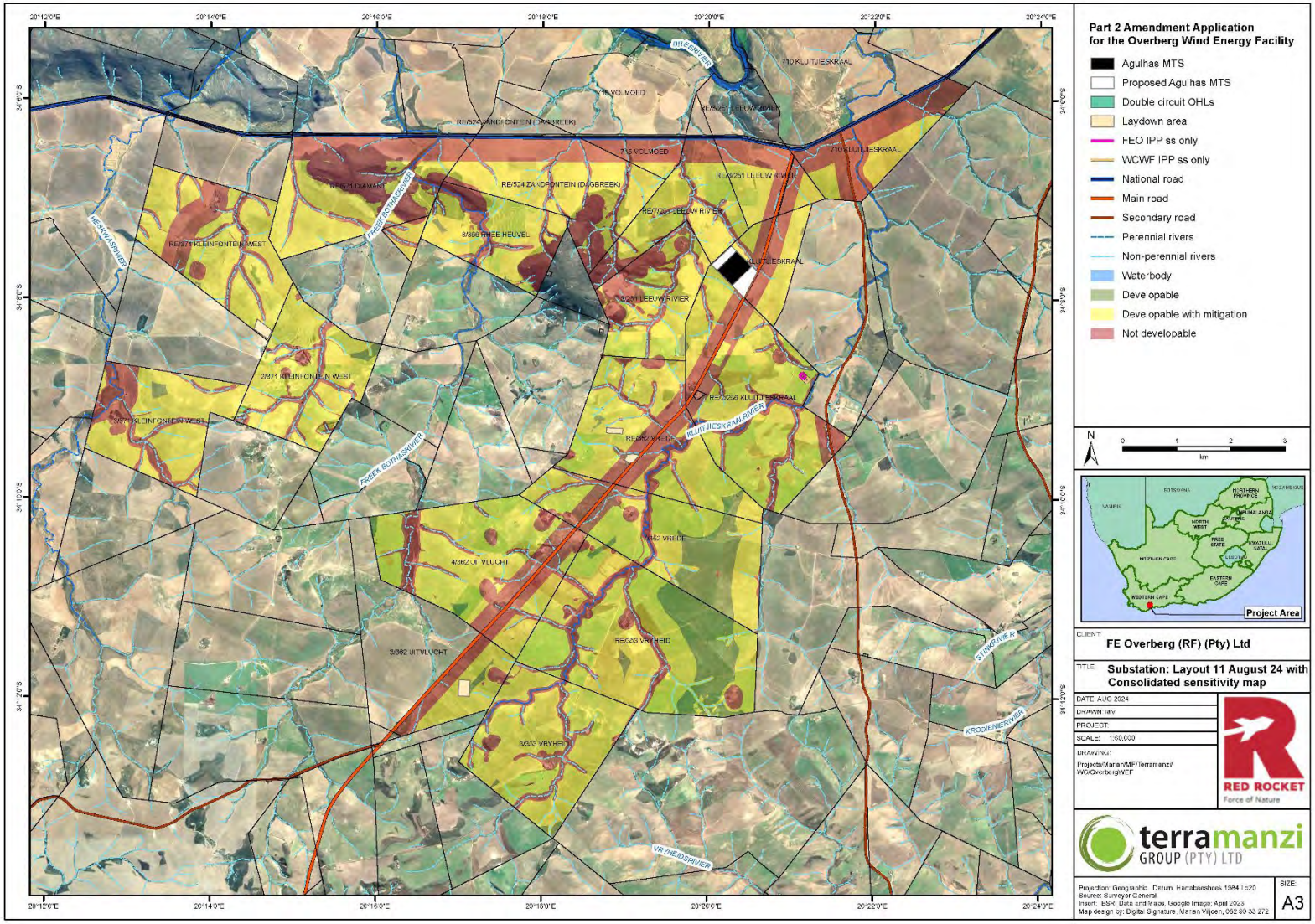


Figure 4: Site sensitivity map for the Overberg WEF Substation area (Final Layout: 11 August 2024)

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

The DFFE Environmental Screening Tool was utilised for this project to initially identify potential environmental sensitivities. The environmental sensitivities were then assessed by specialists. The environmental sensitives confirmed by the specialists are presented as follows:

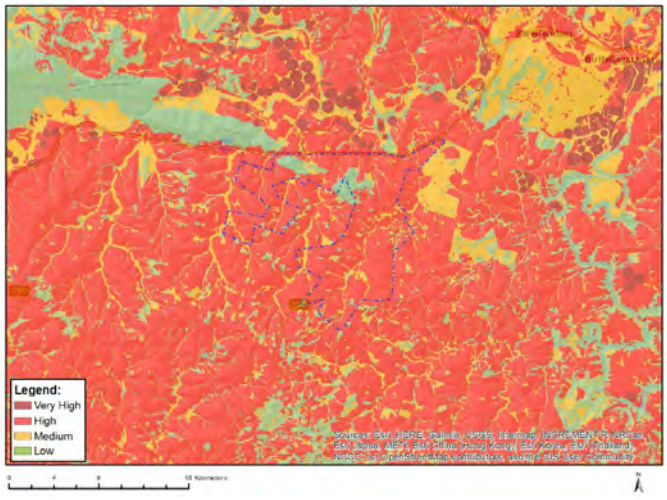


Figure 5: Agricultural DFFE Screening Tool Sensitivity Map.

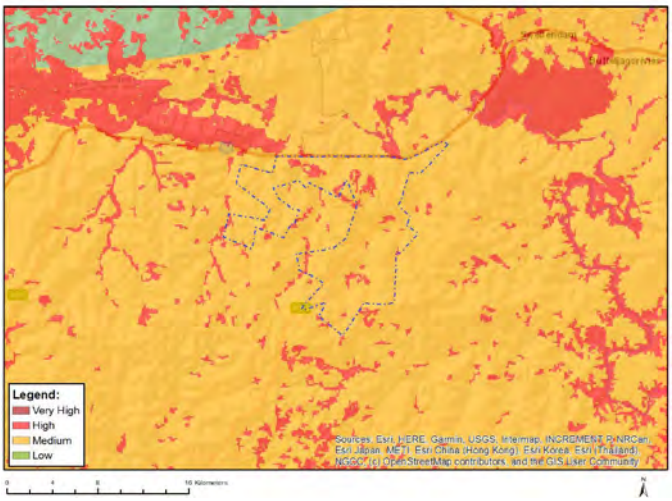


Figure 6: Animal Species DFFE Screening Tool Sensitivity Map.

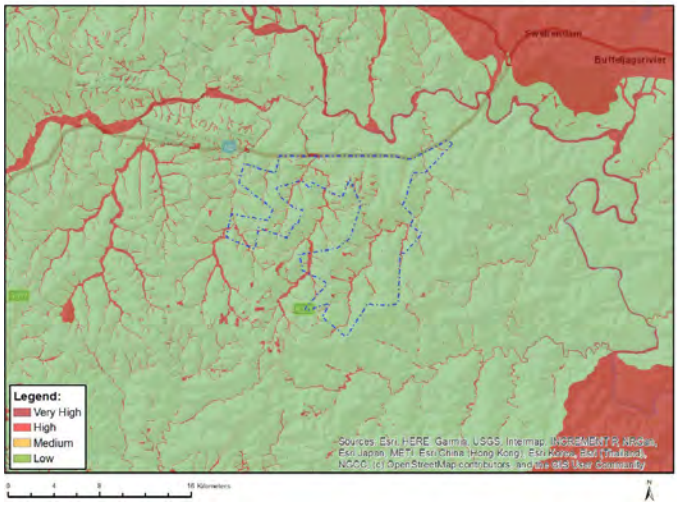


Figure 7: Aquatic Biodiversity DFFE Screening Tool Sensitivity Map.

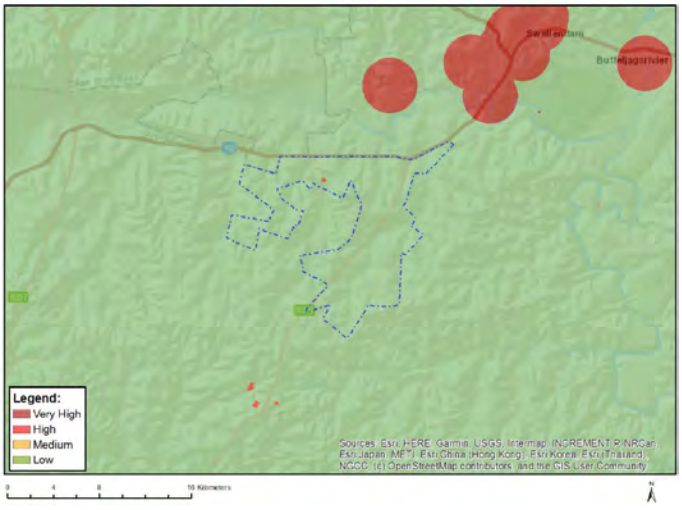


Figure 8: Archaeological DFFE Screening Tool Sensitivity Map.

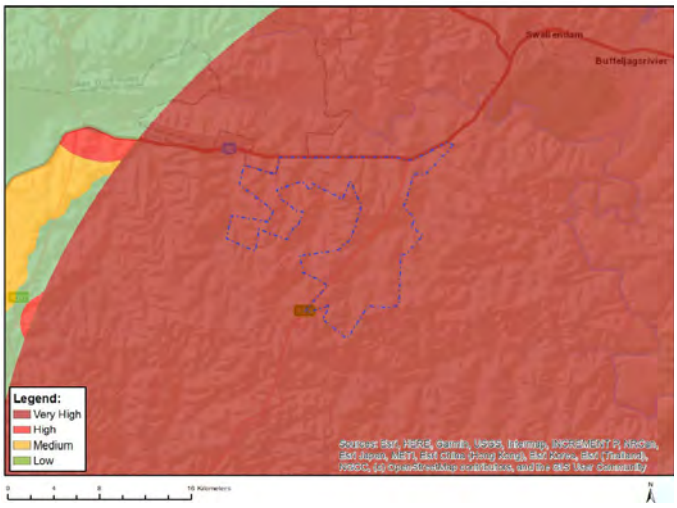


Figure 9: Avian DFFE Screening Tool Sensitivity Map.

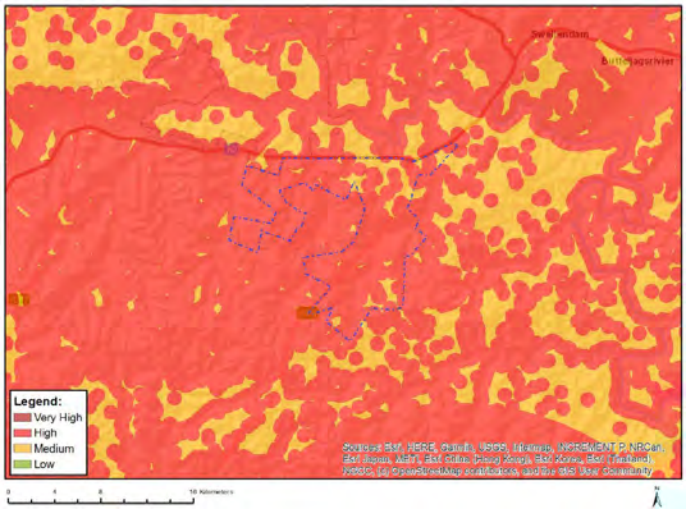


Figure 10: Bat theme DFFE Screening Tool Sensitivity Map.

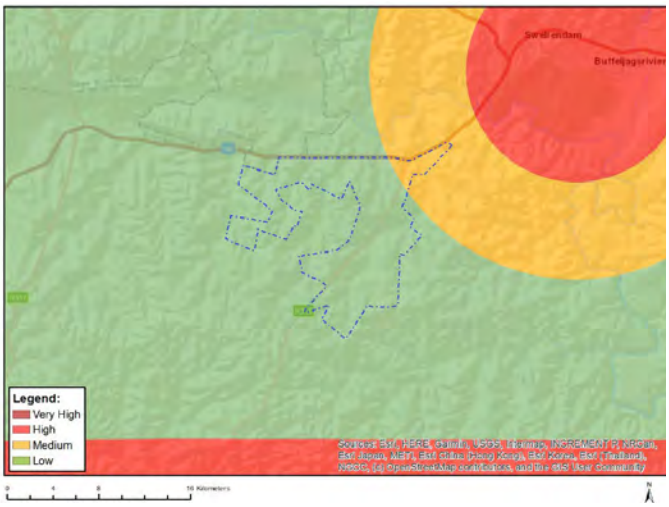


Figure 11: Civil Aviation (Wind) DFFE Screening Tool Sensitivity Map.

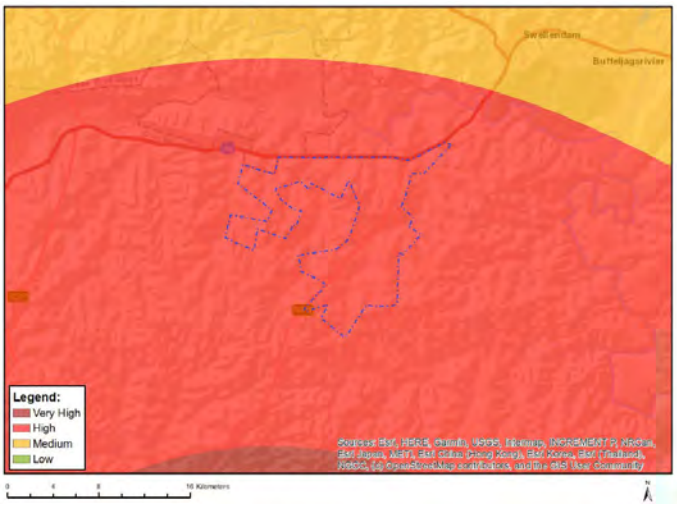


Figure 12: Defence Theme DFFE Screening Tool Sensitivity Map.

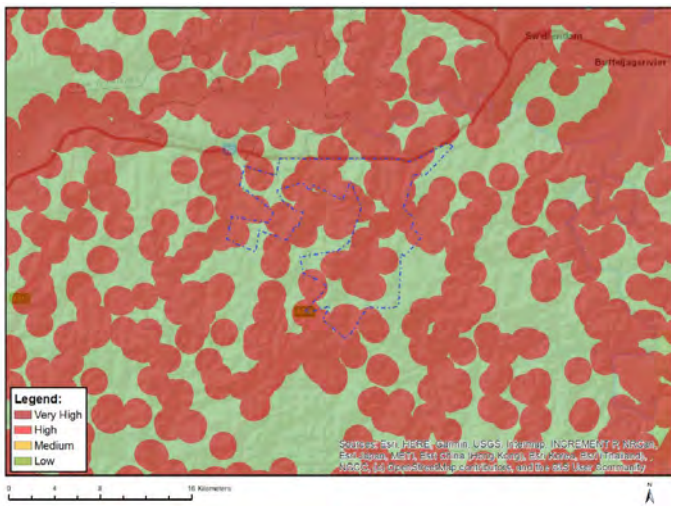


Figure 13: Flicker Theme DFFE Screening Tool Sensitivity Map.

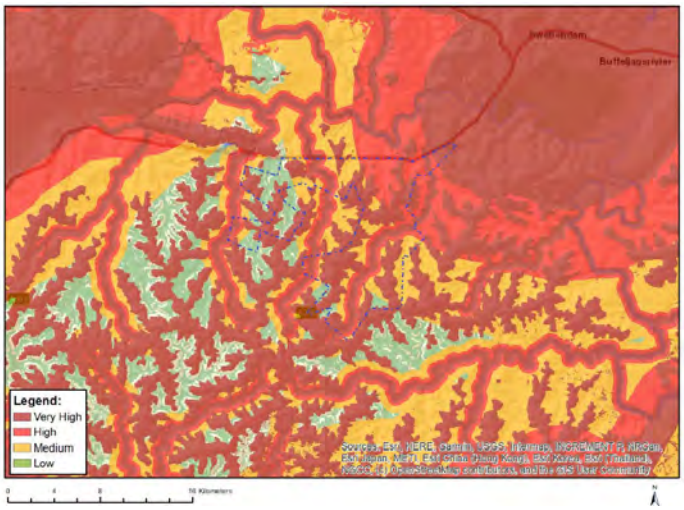


Figure 14: Landscape (Wind) Theme DFFE Screening Tool Sensitivity Map.

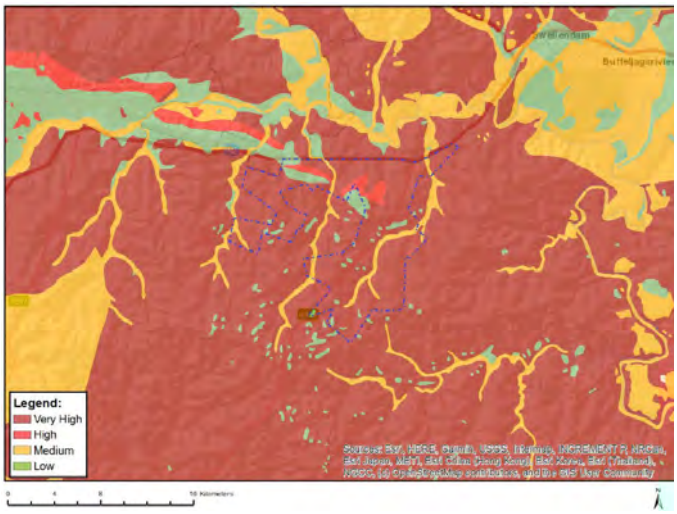


Figure 15: Palaeontological Theme DFFE Screening Tool Sensitivity Map.

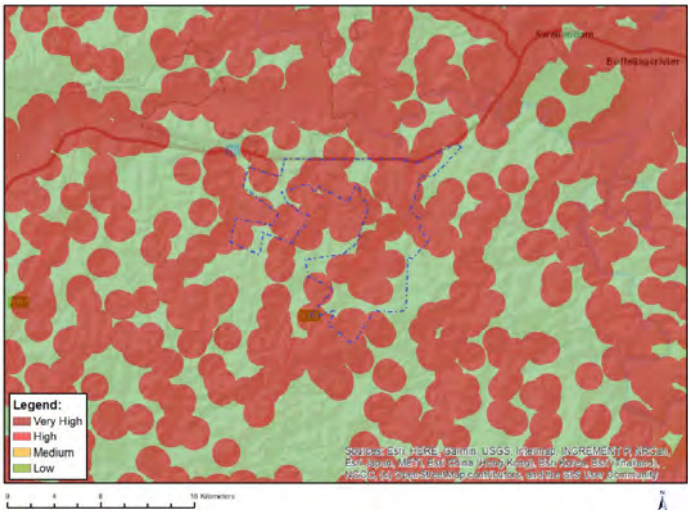


Figure 16: Noise Species DFFE Screening Tool Sensitivity Map.

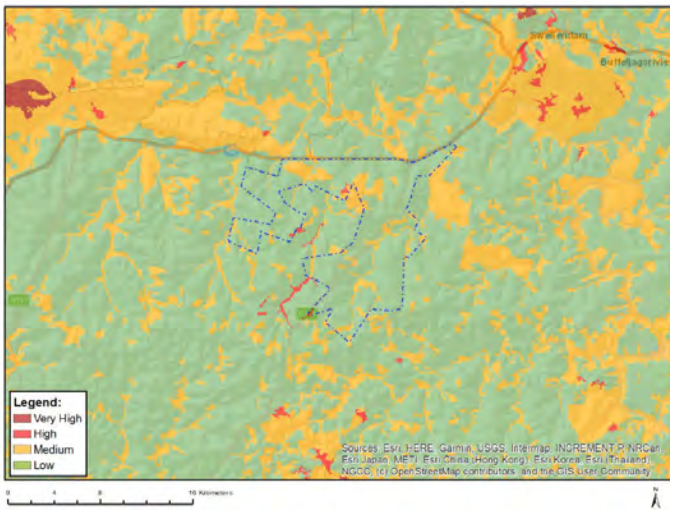


Figure 17: Plant Species DFFE Screening Tool Sensitivity Map.

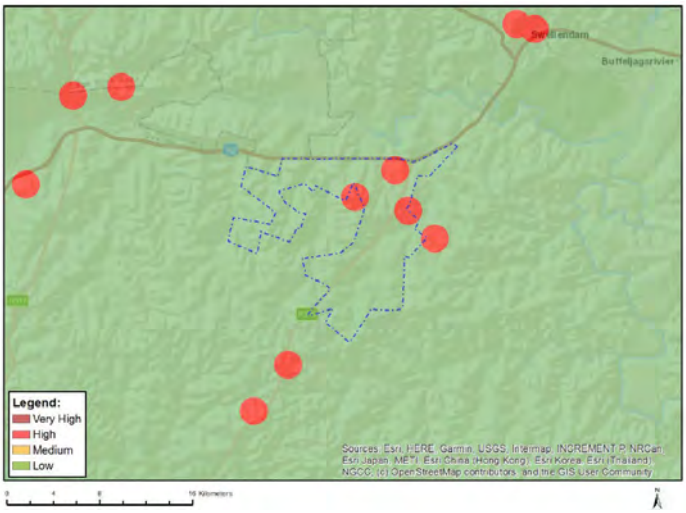


Figure 18: RFI (Wind) DFFE Screening Tool Sensitivity Map.

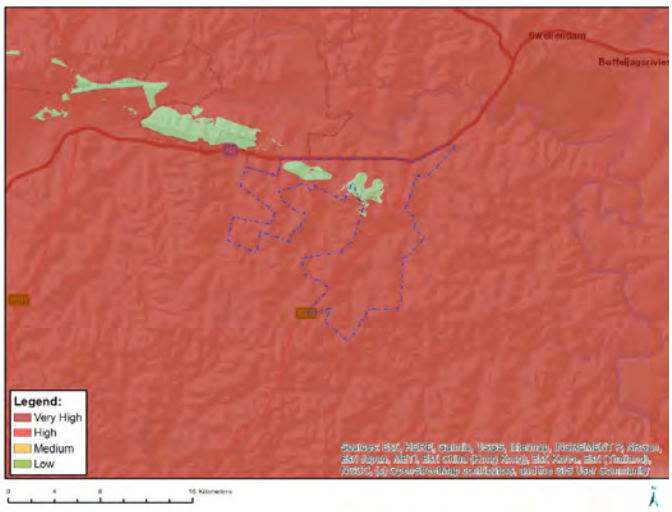


Figure 19: Terrestrial Biodiversity DFFE Screening Tool Sensitivity Map.

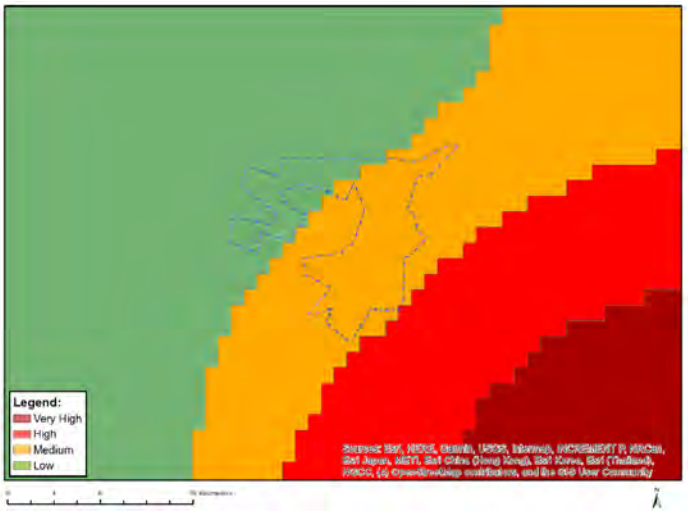


Figure 20: Vulture Species DFFE Screening Tool Sensitivity Map.

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA

Date:

DocuSigned by:

723ECD400D2E4BF...

19-Aug-24

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

Please note: This Generic 132kV Switching Station EMPr (dated October 2024) is submitted for approval. The 132kV Switching Substations has minor specific environmental sensitivities and or attributes provided by the Specialists, which specifically pertain to the Substations and which require additional management, over and above what is presented in the Generic EMPr mitigation measures above. This Generic EMP will be an appendix to the Split EA (Split matrix – Appendix D) It is hereby submitted to the Competent Authority for decision.

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Terrestrial Animal Species						
Pre-construction walkthrough to verify the absence/presence of SCC and extent of alien invasive plant infestations.	Project Manger, ESCO, ECO, Ecological Specialist	Pre-construction walkthrough	Pre-Construction	Ecological Specialist	Pre-construction, frequency to be determined by the Ecological Specialist	Pre-construction walkthrough report
• The maximum use of the extensive available road network must be utilised where practically possible • Where the upgrading of roads requires increasing of the width of the road surface, the increased width must occur in the direction of existing modified habitat, i.e. road widths increases are to avoid the disturbance or destruction of natural habitat in areas where the road network runs adjacent to remnant patches of natural or near-natural habitat • The upgrading of roads must be undertaken with particular attention given to designs that reduce the flooding and saturation of the road surface, as the area is prone to rainfall induced damage of the internal road network • The upgrading of roads must include the upgrading	Project Manager, ECO, ESCO, Ecologist, dEO, DSS Traffic Specialist (where required)	Toolbox Talks / Environmental Training workshops, continuous reports and conversation between all relevant parties. Records of such must be kept on file.	Construction	Contractor, ESCO, ECO, Ecologist and Traffic Specialist (when required)	During the upgrading of roads	Proof of implementation in detailed design and report from specialist, ECO Compliance Report

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
of river or channel crossings (where technically required) as to not impede the downstream movement of water or increase erosion and sedimentation and impacts to downstream environments • The upgrading of roads must include appropriate water runoff management and include erosion prevention and flow control structures to prevent downstream impacts such as increased sedimentation of drainage lines and rivers • The upgrading of roads must be conducted using the minimum widths technically required						
Appropriate burn regimes should be implemented on remnant patches of natural or near-natural vegetation in consultation with relevant landowners as it is likely that the operational lifespan of the facility will include periods of optimal burning to promote the preferred habitat of the Yellow-winged Agile Grasshopper	Project Manager, Contractor, ECO, ESCO, Ecologist, Local Fire Department , landowners, Farmers Association (if applicable)	Fire Management Plan (FMP) (Annexure L)	Operation	ECO, ESCO, Ecologist, Local Fire Department (if applicable) , landowners, Farmers Association (if applicable)	As required by the Fire Management Plan and / or relevant local fire management authority	Fire Management Plan, ESCO/ECO reports and/or checklists which detail fire activities when they occur. These reports must be in line with the requirements of the FMP.
Terrestrial Biodiversity						

Impact management outcome: Protection of Biodiversity						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
• Please refer to the Mitigation measures in the 'Terrestrial Animal Species' section above, as these are also applicable to the management and mitigation of impacts to Terrestrial Biodiversity. • The mitigation measures recommended by the aquatic, terrestrial animal and avifaunal assessments are to be implemented to reduce impacts on the relevant habitats • The fencing off some of the remnant patches of natural or near-natural vegetation accessible to grazing livestock should be considered in consultation with relevant landowners as a means of controlling livestock access to these habitats	Project Manager, Contractor, ECO, ESCO	Construction and Site inspections	Construction	ECO, ESCO	Construction phase, and when site access to an area outside the development is required.	Proof of implementation in detailed design and report from specialist.

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Residual Impact						
Mitigation measures are all inherent in the project design. A system of storm water management, which will prevent erosion, will be an inherent part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control, where they occur on steeper slopes, must be kept in tact and functional after any disturbances that have been made to it as a result of construction activities or the placement of wind farm infrastructure, including roads.	ECO, ESCO, Contractor, Engineer, Freshwater specialist and Agricultural specialist	Pre, during and post construction	Planning and design phase	ECO, ESCO; Engineer; Freshwater Specialist	Throughout the project	Storm water management plan

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of the effect of human activities and road mortalities						
Maintain proper firebreaks around entire development footprint.	ECO, ESCO, Fire department	Fire Management Plan – Local Fire Department.	Construction / Operation	ECO, ESCO; Fire department	Once a year / During winter season – when required. The local Fire Department and Ecologist can advise.	A report recording when Fire breaks are conducted and their frequency.
Educate construction workers regarding risks and correct disposal of cigarettes on site.	ECO, ESCO, Fire department	Fire Management Plan & Toolbox talks	Construction / Operation	ECO, ESCO	Weekly	Toolbox talk records and attendance registers
Travelling at night should be avoided or limited as much as possible.	ECO, ESCO, Contractor, Health and Safety Officer	Security Checkpoints & Inspections	Construction / Operation	ECO, ESCO; Health and Safety Officer	Daily	Toolbox talk records and attendance registers

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Impact on Disturbance and Loss of aquatic habitat (direct)						
A pre-construction walkthrough with an aquatic specialist is recommended and they can assist with the development and implementation of the stormwater management plan and Aquatic Rehabilitation and Monitoring plan, coupled to micro-siting of the final layout.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (Where required).	Stormwater management plan and Aquatic Rehabilitation and Monitoring plan	Pre Construction	ECO, ESCO, Freshwater Specialist (when required).	Pre Construction - Frequency to be determined by the Freshwater Specialist and ESCO/ECO	Stormwater management plan and Aquatic Rehabilitation and Monitoring plan
Where large cut and fill areas are required these must be stabilised and rehabilitated during the construction process, to minimise erosion and sedimentation.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction	ECO, ESCO,	Weekly	Weekly monitoring reports by the ESCO/ECO, monitoring reports as required by the SWMP
Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist.	Stormwater management plan to be implemented	Construction, Operation	ECO, ESCO, Engineer and Project Manager (where required)	During construction and operation	Stormwater management plan

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
To minimise the impact of the access roads: • Use existing roads or upgrade existing tracks to cross wetlands rather than constructing entirely new roads wherever possible. • Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences. • Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils. • All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. Crossings that are installed below the natural ground level are to be constructed with an appropriate drop inlet structure on the upstream side to ensure that headcut erosion does	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP) and Aquatic Rehabilitation and Monitoring plan (ARMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO/ECO weekly Reports, Monitoring reports as required by the SWMP and ARMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
not develop as a result of the gradient change from the natural ground level to the invert level of the culvert. • The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown. • Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities. • Any fauna (frogs, snakes, etc.) that are found within the construction						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
area must be moved to the closest point of similar habitat type outside of the areas to be impacted. • All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated. • It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.						
Construction areas within 50 m of any freshwater ecosystem must have clearly defined, approved work areas / footprints, which must be clearly demarcated on site, to limit the risk of potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5 m on either side of the crossing may be implemented and the reaches of the	ECO, ESCO, Freshwater Specialist (where required), Engineer, Contractor	Clearly Demarcate work and walk areas as per the Freshwater Specialist Report (12 August 2022 and 01 November 2023)	Construction	ECO, ESCO	Daily	Site Inspection and ECO , ESCO Compliance report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
freshwater ecosystem up- and downstream of the construction ROW must be designated 'no-go' areas						
As far as possible, the use of hard engineering techniques such as gabions, reno mattresses and so forth to manage erosion and sedimentation must be avoided. Where feasible, employment of 'soft' techniques such as biodegradable hessian sheeting with coir logs, brush cutting stabilised with additional cobbles and soil, or step-cutting and revegetation with indigenous flora is preferred for bank stabilisation. Further detail in this regard is provided in the freshwater rehabilitation and management plan (FEN, 2023).	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO,ECO weekly Reports, Monitoring reports as required by the SWMP
Further to the above, Acacia spp. were noted to occur within several drainage systems within the Overberg WEF project boundary. Removal of these trees is recommended albeit not within the duty of care of the proponent; however, felled tree trunks and larger branches without seeds and roots (to avoid perpetuating growth of these species) could be utilised in slope and	Project Manager, ECO, ESCO, Ecologist (where required)	Alien Invasive Management Plan (AIMP)	Construction & Operation	ECO, ESCO, Ecologist (where required)	Weekly	ESCO,ECO Reports, Monitoring reports as required by the AIMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
bank stabilisation.						
Vegetation cleared from construction areas is to be limited to the approved development footprint. Indigenous vegetation which is viable for replanting is to be retained for utilisation in disturbed areas post-construction. Alien vegetation must be removed to a licensed waste facility and may not be stockpiled, mulched, composted or burnt on site, with the exception of trunks and sturdy branches which are to be used for erosion control as above.	Project Manager, ECO, ESCO, Ecologist (Where Required)	Alien Invasive Management Plan (AIMP)	Construction	ESCO /ESCO	Weekly	Draft an onsite AIMP and conduct weekly checklists (to be included into the weekly ESCO, ECO site inspections)
Accumulated sediment and debris within freshwater ecosystem crossings is to be removed manually or by the lightest equipment possible to minimise disturbances to soil and hydraulic patterns within the freshwater ecosystems.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
Management of potential sources of contamination within the batching areas (specifically batching areas 1 and 2) is extremely important, given that both sites are within 30 m and upgradient of	Project Manager, Engineer, ECO, ESCO, Freshwater	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
freshwater ecosystems. A clean and dirty water separation trench and berm must be developed between these sites and the downgradient watercourses, which must be restored to pre-development topography and rehabilitated during decommissioning of the batching sites	Specialist (where required)					
Concrete and cement-related mortars can be toxic to aquatic life. Proper handling and disposal should minimise or eliminate discharges into the freshwater ecosystems. High alkalinity associated with cement can dramatically affect and contaminate both soil and ground water. The following measures are specific to concrete works within the batching sites and must be adhered to: ○ Fresh concrete and cement mortar should not be mixed near the freshwater ecosystems. Mixing of cement may be done within the batching site, on an impervious surface only, and must be within a lined, bound or bunded portable mixer. Consideration must be given to the use of ready mix concrete if possible; ○ No mixed concrete maybe deposited	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
directly onto the ground within the freshwater ecosystems, outside of the designated area (e.g. at road crossings, no closer than 5 m to the freshwater ecosystem). All concrete for any works within the freshwater ecosystems must be brought in via a cement mixing truck which must remain 5 m from the crossing, and cement must be piped down to the construction site. Any areas that require manual application of cement require that mixed cement be placed on a batter board or other suitable platform/mixing tray until it is deposited; ○ A washout area must be designated outside of the freshwater ecosystems, and wash water must be treated on-site or discharged to a suitable sanitation system; ○ At no point may batter boards/mixing trays or cement trucks be rinsed off on site and run-off water be allowed into the freshwater ecosystems; ○ Cement bags (if any) must be disposed of in the demarcated hazardous waste receptacles and						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
the used bags must be disposed of through the hazardous substance waste stream; and ○ Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.						
Water is planned to be abstracted from existing boreholes within the Overberg WEF project boundary. Abstraction must be carefully managed according to the recommendations made by the geohydrologist, to ensure that groundwater levels are maintained and that dewatering of freshwater ecosystems does not occur.	Project Manager, Contractor, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Include borehole	Pre-construction, Construction, Operation	ECO, ESCO, Engineer, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
As far as possible, underground cabling must be installed across freshwater ecosystems by means of pipe-jacking / micro-tunnelling. If trenching cannot be avoided, the following measures must be taken: ○ Trenching must, as far as practically possible, be undertaken during the dry, summer low-flow period, to contain the impacts from the construction phase; ○ The construction footprint must be limited to the width of the trench	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Layout Design – the Final layout accounts for the freshwater no-go areas. Regular site walk throughs - the ESCO and ECO must monitor the water crossings and boundaries to the freshwater no-go areas weekly to manage any potential impacts which may occur.	Construction & Operation	ECO, ESCO, Engineer, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
and a construction ROW (to allow for the temporary stockpiling of soil and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation; ○ The stockpiles must remain as small as possible and may not exceed 2 m in height to prevent excessive dust generation that could smother wetland vegetation and impact the downstream reach of the freshwater ecosystem; ○ The duration of open trenching through any freshwater ecosystem must be kept as short as possible; ○ Trenching will potentially result in bank destabilisation, and cause bank incision and sedimentation of the freshwater ecosystem therefore, sediment control devices (such as geotextile sediment traps - Figure 3) must be installed prior to trenching activities downgradient of the construction works to limit any sediment from entering the downstream reach. Sediment traps should allow for surface runoff						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
should a rainfall event occur; ○ During trenching through the freshwater ecosystem, soil may be stockpiled on the upgradient edges of the excavation in order to limit potential sedimentation of the freshwater ecosystem. In cases where the space does not allow for the stockpiling of excavated material, then protective sheeting must be used to stockpile soil on the downgradient edges. Mixture of the lower and upper layers of the excavated soil should be kept to a minimum. ○ During trenching activities, seepage water may be present within the trench - invariably this will be filled with silt and have high suspended solid loads. Therefore, any seepage must not be discharged directly into the downstream reach of the freshwater ecosystem but must rather dewatered and pumped into a small stilling basin first before being released to the receiving environment; ○ The stockpiled soil must be used to backfill the trench, immediately						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
after constructing the pipeline; ○ Material used as bedding material (at the bottom of the excavated trench) should be stockpiled outside of the delineated boundary of the freshwater ecosystem. Once the trench has been excavated, the bedding material should directly be placed within the trench rather than stockpiling it alongside the trench; ○ The bedding layer (such as clean gravel) must be spread evenly and compacted uniformly to the required density using a hand tamper (one-man operator) in order to minimise the use of large machinery within the defined extent of any watercourses. Depending on the substrate of the active channel, the same channel bed material must be returned - i.e., if cobbles, cobbles must be replaced; ○ Once the cabling has been installed, the stockpiled soil must be used as backfill for the trench, while keeping the disturbance footprint to a minimum – no indiscriminate movement of construction machinery by personnel (Figure 4						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
above). The trench must be filled with soil in the same sequence as it was removed. It is imperative that topsoil be reinstated to ensure suitable rehabilitation of vegetation; ○ The trench must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion and the upper 300 mm must be ripped for reestablishment of vegetation. However, consideration must be given to accounting for subsidence of the soil level over time by allowing for a slightly higher soil level in the trench (depending on the soil type). Therefore, monitoring post construction is required. Conversely, areas compacted as a result of construction activities (within the 5 m construction ROW must be loosened to natural soil compaction levels; ○ Proliferation of alien vegetation must be monitored and controlled; ○ Unused excavated soil/sediment must be utilised as part of the open space area or be removed from site						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
to a registered landfill.						
To minimise the impact of the access roads: • Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and demarcated clearly, before any construction commences.	ECO, ESCO, Engineer, Freshwater specialist (if required)	Continuous monitoring throughout construction	Construction; Operation	ECO, ESCO	Operation	Proof of implementation in detailed design and report from specialist.
Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.	Project Manager, ECO, ESCO, Ecologist	The Final approved Layout must be implemented on site	Construction	ECO, ESCO,	Daily	Site Inspections and ESCO, ECO Compliance Reports
The channel profile, regardless of the current state of the river / water course, will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown.	Project Manager, ECO, ESCO, Freshwater specialist	Continuous monitoring throughout construction	Preconstruction	ESCO, ECO	Weekly and monthly monitoring of the channel profile	Site Inspections, ESCO, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Water diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.	DPM, ECO, ESCO, Freshwater specialist, Engineer	Temporary water diversion design must utilise sand bags	Construction	DPM, Engineer, ESCO	When a temporary water diversion is applicable, weekly monitoring will be sufficient	Site Inspection, ESCO, ECO Compliance report
Any fauna (frogs, snakes, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.	Respective Specialist, Project Manager, ECO, ESCO	Faunal Search and Rescue Programme	Construction	Respective Specialist (where required), ESCO, ECO	Weekly	Faunal Search and Rescue Programme Report
All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated.	Project Manager, ECO, ESCO, relevant specialists	Rehabilitation and Revegetation Plan	Post construction	Relevant Specialist (Ecologist), Contractor, ESCO, ECO	Rehabilitation Phase – Weekly	Site Inspection, Rehabilitation and Revegetation Plan
It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed.	Project Manager, ECO, ESCO,	Alien Invasive Management Plan	Construction	DPM, ESCO	Weekly	Site Inspection, Alien Invasive Management Plan

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.						
Impact on riparian and wetland systems through possible increase in surface water runoff, i.e. changes to the hydrological regime (indirect)						
A stormwater management plan must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems.	Project Manager, ECO, ESCO, Freshwater specialist, Engineer	Implement a stormwater management plan	Construction	ECO, ESCO	Weekly and after storm events, and/or high rainfall events	Site Inspection, Storm Water Management Plan
Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil. Contingency plans must be in place for high rainfall events which may occur during construction.	Project Manager, ECO, ESCO, Freshwater specialist, Engineer	Implement a stormwater management plan	Construction	ESCO, ECO, Engineer	Weekly and after storm events, and/or high rainfall events	Site Inspection, Storm Water Management Plan
The stormwater management infrastructure must be designed to ensure the runoff from the development is not highly concentrated before entering the buffer area. The buffer area must be considered as a No Go area for development and large infrastructure.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
The volume and velocity of water must be reduced through discharging the surface flow at multiple locations	Project Manager,	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
surrounding the development, preventing erosion.	Engineer, ECO, ESCO, Freshwater Specialist (where required)			Specialist (where required)		the SWMP
Impact on changes to hydrological regimes that could also lead to sedimentation and erosion (indirect)						
Monitoring of the project activities is essential to ensure the mitigation measures are implemented. Compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report.	ECO, ESCO	ECO Compliance Report	Construction	ECO, ESCO	Site visits as required	Approved EMPr and mitigation measures in place
Sedimentation must be minimised with appropriate measures. Any construction, within or directly upslope of a watercourse, causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using rows of silt fences, sandbags, hay bales and/or earthen berms spaced along contours at regular intervals. Construction must have contingency plans for high rainfall events during construction.	Project Manager, , ECO, ESCO, Freshwater Specialist, Engineer	Implement a stormwater management plan	Construction	ECO, ESCO	Weekly and after storm events, and/or high rainfall events	Site Inspection, Storm Water Management Plan
Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that	Project Manager, ECO, ESCO, Freshwater	Implement a stormwater management plan	Construction	ESCO, ECO	Once a year	Site Inspection, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the volume/velocity of the water reduced through further structures and/or energy dissipaters. Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil.	specialist, Engineer					
Energy dissipaters should be installed to prevent scour at any culvert outlet. This can be constructed of appropriately sized rock armour. Coarse bedding material or geotextile wrapped dump rock must be considered for use wherever the roads crosses wetland characterized by diffuse subsurface flows such as the seeps.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist (where required)	Stormwater management plan (SWMP)	Construction & Operation	ECO, ESCO, Freshwater Specialist (where required)	Weekly	ESCO, ECO weekly Reports, Monitoring reports as required by the SWMP
Potential Impact on localized surface water quality (indirect)						
Mechanical plant and bowsers must not be refuelled or serviced within 100m of a river channel.	ECO, ESCO, Contractor	Assure that contractors are aware of this measure and identify adequate areas and methods	Construction	ECO, ESCO, DPM	Daily	Site Inspection, ESCO, ECO Compliance Report
All construction camps, lay down areas, wash bays, batching plants or areas and any stores should be more than 50 m from any demarcated water courses.	ECO, ESCO, Contractor, Project Manager	Approved site layout should be used before Construction begins	Construction	ECO, ESCO	Weekly	Site Inspection, ESCO, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Littering and contamination associated with construction activity must be avoided through effective construction camp management.	ECO, ESCO, Contractor, Project Manager,	Tool box talks and training	Construction	ECO, ESCO	Weekly	Training records, ESCO, ECO Compliance reports should be kept on file, EMPr's
No stockpiling should take place within or near a water course.	ECO, ESCO, DPM, Project Manager, Contractor,, Engineer, Fresh Water Specialist	Approved layout should be used which guides the location of stockpiling activities	Construction	ECO, ESCO, Contractor, Project Manager (where required)	Daily	Site Inspection, ESCO, ECO Compliance Report
All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.	ECO, ESCO, Contractor, engineer, Fresh Water Specialist	Approved layout should be used which guides the location of stockpiling activities	Construction	ECO, ESCO, Contractor	Daily	Site Inspection, ESCO, ECO Compliance Report
ESO monitors the site on a daily basis to ensure plant is in working order (minimise leaks), spills are prevented and if they do occur, are quickly rectified.	Contractor, ESO, ESCO	Maintenance Plan	Construction	ESO, ESCO	Daily	Site Inspections, Maintenance Plan feedback register / report

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Bat Impact Management						
• At operational wind energy facilities where bat fatality rates exceed threshold values, mitigation strategies such as curtailment or deterrents must be implemented. These mitigation strategies and curtailment regimes must be based on pre-construction monitoring from the specific site and be drawn up by a qualified specialist. • The operation of lights at substations should be limited to avoid attracting bats to the area. Where lights need to be used such as at the substation and switching station and elsewhere, these should have low attractiveness for insects such as low pressure sodium and warm white LED lights (Rydell 1992; Stone 2012). High pressure sodium and white mercury lighting is attractive to insects (Blake et al. 1994; Rydell 1992; Svensson & Rydell 1998) and should not be used as far as	Project Manager, ESCO, ECO, Avifaunal and Bat Specialist	Bat Fatality Monitoring Programme as determined by the Avifaunal and Bat Specialist	Operation	ESCO, ECO, Avifaunal and Bat Specialist	To be determined by the Avifaunal and Bat Specialist	Bat Fatality Monitoring Report

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
possible. • Lighting should be fitted with movement sensors to limit illumination and light spill, and the overall lit time. In addition, the upward spread of light near to and above the horizontal plane should be restricted and directed to minimise light trespass and sky glow. • Increasing the spacing between lights, and the height of light units can reduce the intensity and volume of the light to minimise the area illuminated and give bats an opportunity to fly in relatively dark areas between and over lights. • Each development must avoid construction and turbine siting in bat no-go areas.						
Direct Habitat Destruction						
The footprint within High Sensitivity areas should be minimized and avoided wherever possible	ECO, ESCO, Contractor	Clear boundaries should be identified before construction commence	Construction	ECO, ESCO	Daily	Site Inspections and Compliance reports ESCO, ECO
Laydown and other temporary infrastructure to be placed within very	ECO, ESCO, Contractor	Areas should be identified before construction commence	Construction	ECO, ESCO	Daily	Site Inspections and Compliance reports ESCO, ECO

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
low to low sensitivity areas, preferably previously transformed areas, wherever possible						
Appropriate run-off and erosion control measures are to be implemented where required	ECO, ESCO, Contractor, engineer, fresh water specialist	Measurements should be in place before construction commence	Construction	ECO, ESCO,	Daily, especially after high rainfall events	Site Inspections and ESCO, ECO Compliance reports
All hazardous materials should be stored in the appropriate manner to prevent contamination of the site and downstream environments. Any accidental chemical, fuel and oil spills that occur at the site should be cleared as appropriate for the nature of the spill	ECO, ESCO, contractors	Clearly marked areas and bins should be accessible for all workers on site	Construction	ECO, ESCO,	Daily	Site Inspections and ESCO, ECO Compliance reports
The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths	Contractor, Project Manager, ECO, ESCO	Ensure existing roads are being used	Construction	ECO, ESCO, Contractor	Daily	Site Inspections and ESCO, ECO Compliance reports
No off-road driving should be permitted in areas not identified for clearing	Contractor, Project Manager ECO, ESCO	Ensure existing roads are being used	Construction	ECO, ESCO	Daily	Site Inspections and ESCO, ECO Compliance reports
Management of the disturbance and displacement						
Prior to construction, an avifaunal specialist should conduct a site walkthrough, to confirm the quality of the habitat for Black Harrier and to determine whether minor adjustments in the position of these WTGs would be	Project Manager, Avifaunal Specialist, ESCO, ECO	Pre Construction walk through	Pre-Construction	Avifaunal Specialist, ESCO, ECO	Pre-Construction	Pre Construction walk through Report

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
required (micrositing). The walkthrough will also determine potential new SCC nesting sites which may have been established.						
Speed limits (30 km/h) should be strictly enforced on site to reduce unnecessary noise	ESCO, Contractor, Health and Safety Officer	Speed Control signs and Training	Construction, post construction	Healht and Safety Officer, ECO, ESCO	Daily	Training registers, Speed infringement register, site inspections/observations of speeding on site.
Construction camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate	Engineer, Contractor, Avifaunal Specialist (where required)	Lighting designs must be	Construction and Operation	Contractor, ESCO	Daily during construction and weekly (if required) or monthly during Operation	Site Inspection, ECO report, grievances report from neighbours
The movement of construction personnel should be restricted to the construction areas on the project site	Contractor, Project Manager, ESO, ESCO	Demarcate the construction area with a site boundary fence and netting	Pre Construction & Construction	Project Manager (when required), Contracto (when required), ECO, ESCO	Daily	Site inspection of the fence, ECO compliance report
Mitigation Management Approach						
A Three-tiered mitigation approach will be implemented on site comprising blade painting, Observer-Led Shut Down On Demand (OLSDOD) and Automated Shut	Project Manager, Engineer, Contractor, ESCO, ECO, Avifaunal Specialist (when	Implementation of monitoring programmes discussed in the sections below.	Operation	ESCO, ECO, Avifaunal Specialist (when required)	Weekly	Implementation of monitoring programmes discussed in the sections below.

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Down On Demand (ASDOD) during daylight hours, seven days a week, including public holidays from the moment blades are turning.	required)					
Results comparing the effectiveness of OLSDOD and ASDOD will be assessed annually and systematically adjusted by the qualified and appropriately experienced Avifaunal Specialist appointed to the Project and made available to BLSA, ORCT and EWT prior to adjustments, if any, being made. The Client reserves the right to reduce tiers of mitigations as determined and advised by an Avifaunal Specialist, in consultation with BLSA and ORCT.	Project Manager, Engineer, Contractor, ESCO, ECO, Avifaunal Specialist	Implementation of a monitoring programme as determined by the Avifaunal Specialist, to monitor the effectiveness of the OLSDOD and ASDOD. Implementation of a reporting system, as determined by the Avifaunal Specialist, to present the results of the monitoring to BLSA, ORCT and EWT.	Operation	ESCO, ECO, Avifaunal Specialist, Project Manager (when required), Engineer (When required)	To be determined by the Avifaunal Specialist	The type of Avifaunal Monitoring Report /system is to be determined by the Avifaunal Specialist. ESCO, ECO weekly compliance reports.
The Developers will install and implement automated shutdown on demand (ASDOD) technologies, in addition to other mitigation measures identified, to be operational from the date each such turbine firsts starts operation. The Developers will determine the most	Project Manager, Engineer, Avifaunal Specialist (when required), BLSA, ORCT	The appropriate ASDOD technology to be implemented on each turbine will be determined prior to construction commencing.	Pre-Construction	ESCO, ECO, Avifaunal Specialist	Pre-Construction	The efficiency of the ASDOD technology will be monitored by the Avifaunal Specialist in a manner as determined by the Avifaunal Specialist.

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
suitable ASDOD technology for the species of concern on the site in consultation with qualified service providers, including an Avifaunal Specialist. The turbines on which ASDOD technology will be installed are identified in this section of the EMPr. • The Developers will consult with BLSA and ORCT regarding the proposed ASDOD technology that will be implemented on the project turbines.						
All contractors are to adhere to the environmental management programme and should apply good environmental practice during all operations;	Project Manager, Contractor, ESCO, ECO, Health and Safety Officer	Tool Box Talks, Daily and weekly site inspections and monitoring of the	Construction and Operation	Contractor, ESCO, ECO, Health and Safety Officer	Daily and weekly	Attendance Registers for Tool box Talks, ESCO, ECO weekly compliance reports.
A livestock carcass management plan to be implemented in collaboration with other operational WEFs (where possible) to reduce the likelihood of attracting vultures.	ESCO, ECO, Avifaunal Specialist (when required)	Carcass Management Plan	Construction	ESCO, ECO, Avifaunal Specialist (when required)	Frequency determined by the Avifaunal Specialist, however, the	Carcass Management Plan Report/Checklist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
• Livestock carcasses must be removed or covered within 8 hours of being located					responsible person(s) on site should include observe daily	
Surveys for breeding avifaunal Species of Conservation Concern (i.e. Verreaux's Eagle and Black Harrier) during the correct breeding season must be undertaken by appropriately trained/experienced people. This includes monitoring of the known VE nest sites in close proximity to the WEF.	Project Manager, ESCO, ECO, Avifaunal Specialist	Seasonal Breeding Survey and nest surveying as determined by the Avifaunal Specialist	Operation	ESCO, ECO, Avifaunal Specialist	Seasonal dependent. Frequency of monitoring to be determined by the Avifaunal Specialist	Seasonal Breeding Survey Report and/or a nest surveying report as determined by the Avifaunal Specialist
Operational phase bird monitoring and reporting in line with the latest available guidelines, must be implemented for the lifespan of the facility due to the risk of significant impacts.	Project Manager, Avifaunal Specialist, ESCO, ECO	Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	Avifaunal Monitoring Programmes as determined by the Avifaunal Specialist and covered in the sections of the EMPr.
Direct mortality of avifaunal Species of Conservation Concern:						
Fatalities of avifaunal Species of Conservation Concern are to be appropriately recorded and reported by the ESCO to the Avifaunal Specialist, the Developers and/or the Client as soon as reasonably practicable after first being detected or observed on-site during	Project Manager, Avifaunal Specialist, ESCO, ECO	Fatality Monitoring Programme	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	Fatality Monitoring Report

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
operational monitoring whereby appropriate and/or feasible measures will be taken, in consultation with an Avifaunal Specialist, if applicable. These reports must be made available to relevant stakeholders on quarterly basis (within 15 days of the completion of monitoring). • Any Black Harrier fatalities are to be reported to the ORCT within 24 hours.						
Monitoring						
Prior to operations, an OLSDOD monitoring programme is to be designed and established for the project and is required to be included in the avifaunal monitoring programme established for the project. The OLSDOD programme is to be developed by an Avifaunal Specialist, in collaboration with the Applicant. The purpose of the OLSDOD is to ensure that the ASDOD is working efficiently and to assist in the mitigation of risk and impact to the Avifauna on site.	Project Manager, Avifaunal Specialist, ESCO, ECO	Implementation of an Observer-led Shut Down on Demand (OLSDOD) Monitoring Programme as determined by the Avifaunal Specialist	Pre - Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	OLSDOD Monitoring Report as determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
OLSDOD will be implemented during daylight hours for at least the first 12 months of operation on WTG 14, 15, 16, 18, 21, 22, 24 and 25, including on weekends and public holidays.	Project Manager, Avifaunal Specialist, ESCO, ECO	Implementation of an Observer-led Shut Down on Demand (OLSDOD) Monitoring Programme as determined by the Avifaunal Specialist.	Pre - Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	OLSDOD Monitoring Report as determined by the Avifaunal Specialist.
OLSDOD will be conducted for daylight hours, seven days a week (including weekends and public holidays), during peak Black Harrier activity (summer months, or as recommended by the Avifaunal Specialist) on WTG 1, 2, 3, 4, 5, 6, 12, 13, 17, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39 for Black Harrier and White Stork collision mitigation management.	Project Manager, Avifaunal Specialist, ESCO, ECO	Implementation of an Observer-led Shut Down on Demand (OLSDOD) Monitoring Programme as determined by the Avifaunal Specialist.	Pre - Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	OLSDOD Monitoring Report as determined by the Avifaunal Specialist.
As a first-tier of mitigation, all 39 WTGs will be manufactured with one painted (or patterned) blade to increase the visibility for birds. • The Developers will consult with the ORCT and BLSA (including with reference to any guidance from the South Africa Wind Energy Association)	Project Manager, Engineer, Avifaunal Specialist, ESCO, ECO, ORCT, BLSA	Implementation of blade patterning on all 39 WTGs	Pre-construction	Project Manager, Avifaunal Specialist, ESCO, ECO,	Pre- construction	Implementation of blade patterning on all 39 WTGs

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
regarding the blade painting required terms of the EA that is in accordance with the best available Science and the South Africa Civil Aviation Authority (CAA) requirements. • The Developer will determine the appropriate blade patterning based on South Africa Civil Aviation Authority's (SACAA) requirements. The best applicable patterning is it to be presented and discussed with BLSA, ORCT and the South African Wind Energy Association. • Standard aviation stripes will not be implemented on the Project turbines as a means of satisfying the blade painting specifications required from an avifaunal mitigation perspective						
ASDOD technology will be installed on Turbine 7, and to operate such technology on a year-round basis, for	Project Manager, Avifaunal Specialist, ESCO, ECO,	The appropriate Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist, but at	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
the management of impacts to the Verreaux's Eagles on site.		Avifaunal Specialist and covered in the sections of the EMPr.			least annually	
WTGs 8, 9, 10 and 11, within 5.2 km of the Verreaux's Eagle nest (including rotor swept area), are to be fitted with ASDOD technology as a means of second-tier mitigation, and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable the approaching bird to travel through the wind farm safely.	Project Manager, Avifaunal Specialist, ESCO, ECO,	The appropriate Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist
ASDOD will be implemented on WTGs 14, 15, 16, 18, 19, 21, 22, 24 and 25 for the mitigation of impacts to the Black Harriers on site. The technology will be implemented as a means of second-tier mitigation and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable the approaching bird to travel through the wind farm safely.	Project Manager, Avifaunal Specialist, ESCO, ECO,	The appropriate Avifaunal Monitoring Programmes will be implemented as describe din this EMPr will be determined by the Avifaunal Specialist and covered in the sections of the EMPr.	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Developers will notify BLSA and EWT should any collisions with a Black Harrier and Verreaux's Eagle occur, and if the monitoring data generated during the first 12-month period indicates that the ASDOD systems proves unsuitable for smaller avifaunal Species of Conservation Concern (Black Harriers), the possibility of implementing additional management or mitigation measures shall be assessed and investigated by the Developers together with an Avifaunal Specialist. Based on the monitoring data, the possibility of implementing an additional tier of mitigation (including the possibility of ASDOD on additional turbines or a suitable habitat and conservation mechanism) will be assessed by the Developers at the relevant time, if required, in response to the aforesaid monitoring data.	Project Manager, Avifaunal Specialist, ESCO, ECO, BLSA, EWT	Implementation of a collision monitoring programme, or a programme as determined by the Avifaunal Specialist	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	The Avifaunal Monitoring Programme report are to be determined by the Avifaunal Specialist
The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.	Project Manager, Avifaunal Specialist, ESCO, ECO	Nest surveying programme as determined by the Avifaunal Specialist	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist	A Nest survey report as determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Should it become apparent that avifaunal Species of Conservation Concern (e.g. Black Harrier and Martial Eagle) are utilising the site for breeding at any time during the operational lifespan of the development, WTGs within at least 2 km of nest positions will be required to have an additional tier of mitigation. The appointed Avifaunal Specialist is to be notified to determine the appropriate additional mitigation measures, this will include i) additional observer- led shut-down-on-demand if it is not already in place, or ii) temporary curtailment during daylight hours during the breeding period or other high-risk periods, as per local specialist studies. • If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined) the Avifaunal Specialist is to be appointed for further assessment of the situation and instruction on how to proceed,	Project Manager, Avifaunal Specialist, ESCO, ECO	Breeding Monitoring Programme as determined by the Avifaunal Specialist	Operation	Avifaunal Specialist, ESCO, ECO	Frequency to be determined by the Avifaunal Specialist. New breeding locations will be communicated to ORCT, BLSA and HWI within 24 hours.	Breeding Monitoring programme report as determined by the Avifaunal Specialist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
and BLSA, HWI and ORCT are to be notified within 24 hours. • The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.						
Develop and implement an avifaunal carcass search and activity monitoring programme for Black Harrier and Verreaux's Eagle to be conducted for the lifespan of the facility in-line with the latest applicable guidelines (recognising that the intensity of monitoring required could be adapted (increasing or decreasing in intensity) in future based on the recommendations of an Avifaunal Specialist (e.g.. for example by adjusting monitoring	Avifaunal Specialist (when required), ESCO, ECO	Carcass Search and Rescue Monitoring Programme	Construction	ESCO, ECO, Avifaunal Specialist	Frequency determined by the Avifaunal Specialist, however, the responsible person(s) on site should include observations daily	Carcass Search and Rescue Report/Checklist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
frequency and spacing of transects) having due regard to the efficacy and cost implications of the monitoring).						
Reviews of operational phase monitoring data (activity and carcass) and results to be conducted and reported on by the Avifaunal Specialist for the Project who will then make recommendations regarding the intensity and duration of the monitoring programme. Monitoring report(s) can be made available to stakeholders upon request provided that the reports shall be made available to BLSA, HWI, EWT and/or ORCT. • The frequency of the review of operational phase monitoring data is to be determined by the Avifaunal Specialist, and will be conducted in accordance with the applicable guidelines and regulations at the time. • The above reviews should strive to identify sensitive locations including WTGs and areas of increased collisions	ESCO, ECO, Contractor, Avifaunal Specialist (when required)	Avifaunal specialist to conduct a review of the operational phase monitoring data.	Construction	ESCO, ECO, Avifaunal Specialist (when required)	The frequency of the review of operational phase monitoring data is to be determined by the Avifaunal Specialist.	Avifaunal specialist to determine the reporting of the review feedback.

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
that may require additional mitigation						
Funding should be made available to contribute to further ongoing research on the Potberg Cape Vulture Colony and Black Harrier by recognised institutions/ organisations through consultation with those institutions/organisations already involved in these activities.	Project Manager, Proponent, Avifaunal Specialist	Research Funding Programme	Operation	Project Manager, Proponent, ESCO, ECO	To be determined by the Project Manager and Proponent	Research Funding Programme
Bird Flight Diverters (BFD) to be checked at least once a year and if necessary replaced when required.	ESCO, ECO, Avifaunal Specialist (if required)	Annual BFD monitoring programme	Operation	ESCO, ECO, Avifaunal Specialist (if required)	Annually	BFD Annual audit report
Maximum use of existing access road and servitudes.	Project Manager, Engineers, ESCO, ECO	Internal road network is finalised as per the Final Layout and already takes into account existing roads and servitudes.	Pre construction (design phase), and Construction	ESCO, ECO	Weekly	Weekly ESCO, ECO compliance reports
Temporary fencing must be suitably constructed, e.g. if double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species	ECO, ESCO, Avifaunal specialist (when required)	Carcass Management Plan	Construction	ESCO, ECO, Avifaunal Specialist (when required)	When an avifaunal carcass is identified on site	Carcass management plan report/checklist

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
that may find themselves between the two fences						
Roadkill is to be reported to the ECO and removed as soon as possible.	ECO, ESCO, Contractor	Regular site walk throughs and fill of any holes	Construction	ECO, ESCO	When required	ECO Compliance Reports
Any holes dug e.g. for foundations should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter	Avifaunal Specialist, E**S**CO	Avifaunal Operational Monitoring Assessment	Operation	Avifaunal Specialist, E**S**CO	Frequency Determined by the Avifaunal Specialist	Avifaunal Monitoring Report
The installation of cattle grids should be done in such a manner as to allow the escape of chicks should they fall in	ESCO, ECO, Contractor, Avifaunal Specialist (when required)	Notification of BLSA when a fatality has been found, Avifaunal Monitoring Programme	Construction	ESCO, ECO, Avifaunal Specialist (when required)	When a carcass is identified	Notification of BLSA when a fatality has been identified, Avifaunal Monitoring Programme report/checklist
Management of impact due to Collision, entrapment or entanglement						
If double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences.	ESCO, ECO, Engineers, Contractor	Site Inspection to check that no larger bodies species have been trapped between the double layers of fencing (if required)	Construction	ESCO, ECO	Daily and Weekly	Site inspection, Weekly ESCO and ECO compliance reports
Electrocution from Energised infrastructure						
Prevent birds from nesting in within the substation hub area (or on substation	ESCO, ECO, Avifaunal	Implement covers or spikes or appropriate technology to	***Operation***	***ESCO, ECO***	***Weekly***	***Weekly ESCO, ECO compliance reports***

Impact management outcome: Avifaunal and Bat Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
infrastructure) through exclusion covers or spikes if required (determined on a case-by-case basis).	Specialist Contractor	discourage birds from nesting in the substation infrastructure, as and when required				

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Disturbance or destruction of paleontological material						
Being informed of the very high paleontological significance of the WEF area	Project Manager, Contractor, Palaeontological Specialist	The Final approved layout must be implemented	Construction	ESCO, ECO, Palaeontological Specialist (where required)	Daily monitoring to ensure the approved layout is adhered to during daily construction operations	The Final approved layout must be implemented
The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must:	Project Manager and Construction Manager ECO	Follow the 'Chance Find Protocol' (Appendix B – HIA Specialist Report for guidance).	Construction	ECO, ESCO, Palaeontological Specialist	When a Chance find occurs on site and a	Chance Find Procedure report by the Palaeontological Specialist, ECO compliance report

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
• be implemented during the lifetime of the WEF, and • be included as part of the EMPr for this project.					potential heritage resources identified	
If fossils are exposed during the lifetime of the project, a suitably qualified paleontological specialist must be appointed to collection them and to upgrade the "Chance Find Protocol" document, if required.	Project Manager and Specialist	Project Manager, ESCO, ECO, Palaeontological Specialist	Follow the 'Chance Find Protocol' (Appendix B – HIA Specialist Report for guidance).	Construction	ECO, ESCO, Palaeontological Specialist	Ongoing during design phase and construction phase
If deep (>2m) excavations into un-weathered sedimentary rocks of the Ceres Subgroup are planned as part of the construction of the WEF, these excavations must be monitored by a suitably qualified paleontological specialist.	Project Manager, ESCO, ECO, Palaeontological Specialist	Site observation during excavation	Construction	Palaeontological Specialist	While excavations are taking place	Excavation Site observation feedback report
Fossils finds must be reported as soon as practically possible to HWC.	Project Manager, Contractor, ESCO, ECO, Palaeontological Specialist	Develop a procedure for reporting and ensure implemented	Construction	ECO, ESCO, Palaeontological Specialist	Ongoing during design phase and construction phase	Notify the HWC
Archaeology						

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Each identified archaeological site within the WEF boundary (J003 – J009, G001) must be buffered by 50 m and these buffers declared no-go areas during the construction of the WEF.	Project Manager, Contractor, ESCO, ECO, Archaeological Specialist	The Heritage buffered areas are included in the Final Layout. Site inspections to ensure that construction activities do not impact or impose into these buffered areas.	Construction	Project Manager, Contractor, ESCO, Archaeological Specialist	Ongoing during the construction phase	Compliance with the Final Layout (Which accounts for these buffered aeras); weekly ESCO, ECO compliance reports
If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area must be halted. The find will need to be reported to HWC and may require inspection and mitigation by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.	Project Manager, Contractor, ESCO, ECO, Archaeological Specialist	Implement a chance find protocol that will be signed off by the Archaeological Specialist.	Construction	Contractor, ESCO, ECO, Archaeological Specialist	Only required when archaeological material or human burials are uncovered	Contact the Archaeological Specialist and HWC when archaeological material or human burials are uncovered
Cemeteries and Graves:						
If any human burials are uncovered during development, then work in the immediate area must be halted and the remains made safe but left in situ. The finds must immediately be reported to the project archaeologist and HWC and arrangements made for an inspection to assess how the find will be dealt with.	Project Manager, Contractor, ESCO, ECO, Archaeological Specialist	Implement a chance find protocol that will be signed off by the Archaeological Specialist.	Construction	Contractor, ESCO, ECO, Archaeological Specialist	Only required when archaeological material or human burials are uncovered	Contact the Archaeological Specialist and HWC when archaeological material or human burials are uncovered

Impact management outcome: Visual Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of Visual Impacts						
Disturbed areas to be rehabilitated / revegetated as soon as possible during the construction phase.	Contractor, ESCO, ECO	Rehabilitation and Revegetation Plan	Construction	ECO, ESCO	After the 'specific' Construction activity is completed	Weekly ESCO, ECO Compliance Reports
Temporary laydown areas and batching plants to be located away from arterial or district roads.	Contractor, ESCO, ECO	Batching area to be identified before construction commence	Construction	ECO, ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
Stockpiles to be located within approved construction footprints.	Contractor, ESCO, ECO	Identify approved footprints before construction commence	Construction	ECO, ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
Recycling and refuse bins to be provided to eliminate litter from the site.	Contractor, ESCO, ECO	Ensure bins are easily accessible throughout site	Construction	ECO, ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
On-site signage to be discrete, and billboards prohibited. Signage to be fixed against a backdrop to avoid intrusion on the skyline.	Contractor, EVO, ESCO	ESCO /ECO to monitor signage on site on a regular basis	Construction	ESCO	Daily	Site Inspections, Weekly ESCO, ECO Compliance Reports
Security and other outdoor lighting to be fitted with reflectors to conceal light source and prevent light spillage.	Contractor, ESCO, ECO	Ensure mitigation measure are adhered to	Pre-construction, post construction and construction	ECO, ESCO	Daily	Site Inspections and Weekly ESCO, ECO Compliance Reports
Use of available technology to minimise the visual effect of navigation lights,	Visual specialist, engineer,	Implement CAA approved lights or relevant technology	Construction and Operation	ECO, ESCO	Daily Monitoring during	Site Inspection, Weekly ESCO, ECO Compliance Reports,

Impact management outcome: Visual Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
conforming with CAA requirements, where reasonably practicable.	contractor				Construction and weekly during Operation	Grievance reports and registers from neighbours
Disturbed areas to be rehabilitated / revegetated as soon as possible after the decommissioning phase	Contractor, ECO, ESCO, Ecologist	Rehabilitation and Revegetation Plan	Construction, post construction	ECO, ESCO, Ecologist (where required)	When rehabilitation is required	Weekly ESCO, ECO Compliance Reports. Rehabilitation and Revegetation Plan
Exposed or disturbed areas to be revegetated and returned to grazing pasture or natural veld to blend with the surroundings	Contractor, Visual Specialist, Ecological Specialist, ESCO, ECO	Rehabilitation and Revegetation Plan	Construction, Post Construction	ECO, ESCO, Ecological Specialist, Visual Specialist	Continuously throughout construction and post construction	Proof of revegetated areas in post construction monitoring report or during construction in Weekly ESCO, ECO reports

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Creation of employment and business opportunities, and opportunity for skills development and on-site training.						
• Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase	Social specialist, client, ECO, ESCO	Ensure approved SEP Relevant training provided by Client	Pre-construction and during construction	Client, ECO, ESCO	Weekly Training	Training attendance list

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
• Where feasible, The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.						
Where feasible, preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.	Project Manager, Social specialist (where required), client, ECO, ESCO	Stakeholder Engagement Plan	Construction	ECO, ESCO	The plan will describe the requirements for frequency of monitoring	Stakeholder Engagement Plan – the plan will describe what is required as evidence of compliance
Where reasonable and practical, the proponent should appoint local contractors and implement a 'locals first' policy.	Project Manager, Social specialist (where required), client, ECO, ESCO	Implementation of a 'Local's first Policy'	Construction	Social specialist (where required, ECO, ESCO	The policy will describe the requirements for frequency of monitoring	The policy will describe what is required as evidence of compliance
Where feasible, efforts should be made to employ local contactors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.	Project Manager, Social specialist (where required), client, ECO, ESCO	Implementation of a 'Local's first Policy' with the focus on BBBEE.	Construction	Social specialist (where required, ECO, ESCO	The policy will describe the requirements for frequency of monitoring	The policy will describe what is required as evidence of compliance
Where feasible, before the construction phase commences the proponent should meet with representatives from the SM to establish the existence of a skills database for the area. If such as database exists, it should be made available to the	Project Manager, Social specialist (where required), client, ECO, ESCO	Meet with the SM as and when required.	Construction and Operations	Project Manager, Social specialist (where required), client, ECO, ESCO	The frequency can be determined on a needs basis	Meeting minutes and attendance registers

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
contractors appointed for the construction phase.						
Impacts associated with the presence of construction workers on local communities						
• Where feasible, preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase. • Where feasible, the SEP and CHSSP should include a Grievance Mechanism that enables stakeholders to report resolve incidents.	Project Manager, Social specialist (where required), ECO, ESCO, Health and Safety Officer	Implementation of a CHSSP as and when required. Health and Safety aspects will be covered by the Health and Safety Officer on site, therefore, a CHSSP is not a requirement but can be done if required.	Construction and Operation	Project Manager, Social specialist (where required), client, ECO, ESCO	The frequency can be determined on a needs basis	Meeting minutes and attendance registers and a Grievance register.
The proponent should consider the option of establishing a Monitoring Committee (MC) for the construction phase that representatives from local landowners, farming associations, and the local municipality. This MC should be established prior to commencement of the construction phase and form part of the SEP.	Project Manager, Social specialist (where required), client, ECO, ESCO	Implementation of a monitoring committee as and when required.	Construction and Operation	Project Manager, Social specialist (where required), client, ECO, ESCO	The frequency can be determined on a needs basis	Meeting minutes and attendance registers
The proponent and contractor should develop a Code of Conduct (CoC) for construction workers. The code should identify which types of behaviour and activities are not acceptable. Construction	Project Manager, Social specialist (where required), Health and Safety Officer	Implementation of a Code of Conduct will likely be confirmed by the Project Manager. All personal will comply to this code of conduct on site.	Construction and Operation	Project Manager, Social specialist (where required), client	The frequency can be determined on a needs basis	Implementation of a Code of Conduct will likely be confirmed by the Project Manager. All personal will comply to this code of conduct on site. A disciplinary

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
workers in breach of the code should be subject to appropriate disciplinary action and/or dismissed. All dismissals must comply with the South African labour legislation. The CoC should be signed by the proponent and the contractors before the contractors move onto site. The CoC should form part of the CHSSP.						procedure can be implemented to manage breaches of the code of conduct. This is, however, not he requirement of the ESO or ESCO, as this will be manged by the Project manager.
The proponent and the contractor should implement an HIV/AIDS, COVID-19 and Tuberculosis (TB) awareness programme for all construction workers at the outset of the construction phase. The programmes should form part of the CHSSP.	Project Manager, Social specialist (where required), Health and Safety Officer	Implementation of an HIV/AIDS, COVID-19, and TB programme will be managed by the Health and Safety Officer on site	Construction and Operation	Health and Safety Officer	The frequency can be determined on a needs basis	Implementation of an HIV/AIDS, COVID-19, and TB programme will be managed by the Health and Safety Officer on site
• The contractor should provide transport for workers to and from the site on a daily basis. This will enable the contactor to effectively manage and monitor the movement of construction workers on and off the site. • The contractor must ensure that all construction workers from outside the area are transported back to their place of residence within 2 days for their contract coming to an end. • No construction workers, with the exception of security personnel,	Project Manager, Contractor	Stakeholder engagement, security, grievance form, and safety Agreements and training	Construction	Project Manager, Contractor, ECO, ESCO	Weekly	Signed agreements and training ECO, ESCO records

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
should be permitted to stay over-night on the site.						
Influx of Job seekers						
• The proponent should implement a policy that no employment will be available at the gate.	Project Manager, Security contractor	Security checks and measures (this is not an aspect that the ESCO or ECO will manage)	Construction and Operation	Security contractor	To be determined by the Security contractor	Security checks and measures (this is not an aspect that the ESCO or ECO will manage)
Risk to safety, livestock, farm infrastructure and farming operations						
• All farm gates must be closed after passing through. • Contractors appointed by the proponent should provide daily transport for low and semi-skilled workers to and from the site. • The proponent should implement a Grievance Mechanism that provides local farmers with an effective and efficient mechanism to address issues related to report issues related to damage to farm infrastructure, stock theft and poaching etc. • The Environmental Management Plan (EMP) must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested. • Contractors appointed by the	Project Manager, Contractor, ESCO, ECO	Farmer engagement, live stock management, Agreements and training, Grievance procedure and report	Construction	Project Manager, Contractor, ECO, ESCO	Daily	Signed agreements and, live stock management records, Grievance procedure and report

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
proponent must ensure that all workers are informed at the outset of the construction phase of the consequences of stock theft and trespassing on adjacent farms. • It is recommended that no construction workers, with the exception of security personnel, should be permitted to stay over-night on the site						
Impacts associated with on-site construction related activities						
• As far as possible, the transport of components to the site should be planned to avoid weekends, holiday periods and harvesting season. • The contractor should inform local farmers and representatives from the Swellendam Municipality (SM) and local farming association of dates and times when abnormal loads will be undertaken. • The contractor must ensure that damage caused by construction related traffic to the gravel public roads and local, internal farm roads is repaired on a regular basis throughout the construction phase. The costs associated with the repair	Project Manager, Contractor	Farmer engagement, fire department engagement, management, Agreements and training	Pre-construction and during construction	Project Manager, Contractor, ECO, ESCO	Daily	Signed agreements and records, fire management plan

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
must be borne by the contractor. • Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis, adhering to speed limits and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers. • All vehicles must be road-worthy, and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. • The Contractor should ensure that workers are informed that no waste can be thrown out of the windows while being transported to and from the site. Workers who throw waste out windows should be fined. • EMP measures should be implemented to ensure farm gates are closed at all times. • EMP measures should be implemented to ensure speed limits are adhered to at all times						
Increased risk of grass fire						
• Establishment of a fire break around the construction area before work commences should be investigated. • Contractor should ensure that open	Project Manager, Contractor, Health and	Training and Tool box talks pertaing to Fires on site and fire safety, site control signs, establish a grievance	Pre-construction, during	Project Manager, Contractor, ECO, ESCO	Daily monitoring and weekly training	Training records and registers, Site control signs, establish a grievance mechanism form, dust

Impact management outcome: Social Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
fires on the site for cooking or heating are not allowed except in designated areas. • Smoking on site should be confined to designated areas. • Contractor should ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high-risk dry, windy winter months. • Contractor should provide adequate fire-fighting equipment on-site, including a fire fighting vehicle. • Contractor should provide fire-fighting training to selected construction staff.	Safety Officer	mechanism form, dust management plan	construction, operation			management plan
Potential impact on property values						
The loss of high-quality agricultural land should be avoided and or minimised by careful planning in the final layout of the proposed WEF facilities.	Contractor, ECO, ESCO, Agriculture Specialist	The Final approved layout must be implemented on site	Construction	ECO, ESCO, Agriculture Specialist	Weekly	Site inspections and ECO Compliance reports

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of Noise Impacts - Recommendations						
If possible, access roads should be located further than 100m from NSR. If roads are located closer than 100m from NSR, it is recommended that construction activities be planned that these roads are not used at night	Contractor, Project Manger, Noise Specialist	The Final approved layout must be implemented don site and Construction activities must be planned to avoid activities at night (where possible)	Construction	Contractor, Project Manager, ECO, ESCO	Weekly	The Final approved layout must be implemented don site and Construction activities must be planned to avoid activities at night (where possible)
Project activities not to result in noise levels exceeding 45 dBA						
Re-evaluate the noise impact should the applicant make use of a wind turbine with a maximum SPL exceeding 110.5 dBA re 1 p	Project Manger, contractor, ESCO, ECO, Noise Specialist	Noise monitoring programme should the WTG have a maximum SPL exceeding 110.5dBa re 1 pW	Operation	ESCO, ECO, Noise Specialist	As required	Noise monitoring report
Applicant to re-evaluate the noise impact should the layout be revised (as part of an amendment process post Environmental Authorisation) where any WTG, located within 2,500 m from a confirmed NSR, are moved closer to the NSR;	Project Manger, contractor, ESCO, ECO, Noise Specialist	Should the layout be amended and the WTGs move within 2,500m from an NSR, the noise impacts must be reassessed. A Noise specialist must be appointed during the amendment process to determine	Only applicable for if the EA is amended.	Project Manger, ESCO, ECO, Noise Specialist	Only applicable for if the EA is amended. To be determined by	Noise Impact Assessment or an appropriate level of assessment s confirmed by the Noise specialist.

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		the noise impact of the new WTG locations.			the Noise Specialist	
Applicant to re-evaluate the noise impact should the layout be revised (as part of an amendment process post Environmental Authorisation) where any new WTG are introduced within 2,500 m from an NSR	Project Manger, contractor, ESCO, ECO, Noise Specialist	Re evaluate the noise impact should any new WTGs be introduced within 2,500m from an NSR increases, A Noise specialist must be appointed during the review process to determine the noise impact of the new WTG locations.	Only applicable new WTGs are introduced within 2,500m from an NSR increases	Project Manger, ESCO, ECO, Noise Specialist	To be determined by the Noise Specialist	Noise Impact Assessment or an appropriate level of assessment s confirmed by the Noise specialist.
Applicant to re-evaluate the noise impact should the layout be revised (as part of an amendment process post Environmental Authorisation) where the number of WTG within 2,500 m from an NSR are increased	Project Manger, contractor, ESCO, ECO, Noise Specialist	Should the layout be amended and the number of WTGs within 2,500m from an NSR increases, the noise impacts must be reassessed. A Noise specialist must be appointed during the review process to determine the noise impact of the new WTG locations.	Only applicable for if the number of WTGs within 2,500m from an NSR increases	Project Manger, ESCO, ECO, Noise Specialist	To be determined by the Noise Specialist	Noise Impact Assessment or an appropriate level of assessment s confirmed by the Noise specialist.

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Noise monitoring to define current ambient sound levels at selected NSR before the construction phase start. • Applicant to re-evaluate the noise impact once the WTG specifications was finalised. Should noise modelling indicate noise levels higher than 45 dBA at NSR, the applicant must design a noise abatement programme (or use appropriate mitigation measures) that will ensure that operational noise levels are less than 45 dBA at all verified NSR	Project Manager, ESCO, ECO, Noise Specialist	Pre construction noise monitoring programme	Before the construction phase start	ESCO, ECO,	Pre construction, the frequency of monitoring is to be determined by the Noise Specialist	Pre construction noise monitoring report
Applicant/Environmental Offices (EO) to conduct noise monitoring when a reasonable and valid noise complaint are received from an NSR living within 2,000m from a WTG of the project.	Project Manger, ESCO, ECO, Noise Specialist	Noise Monitoring to be conducted if a noise complaint has been submitted	Within 2 months after a noise complaint is registered	ESCO, ECO, Noise Specialist	Only required when a complaint is received	Noise monitoring report and a complaints register

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Noise monitoring to confirm that noise levels associated with operating WTG are less than 45 dBA at all NSR	Project Manger, ESCO, ECO, Noise Specialist	Noise Monitoring to be conducted in the first year of the WEF being operational	During the first year once the project is operational. Noise specialist to confirm need for future measurements .	ESCO, ECO, Noise Specialist	To be determined by the Noise Specialist when required	Noise monitoring report
Investigate any reasonable and valid noise complaint if registered by a receptor staying within 2,000m from the location where construction activities are taking place, or where an operational WTG are located. A complaint register, keeping a full record of the complaint, must be kept by the Project Developer;	ESCO, ECO, Contractor, Nosie Specialist (where required)	Complaints/ Grievance procedure for noise	Construction	ESCO, ECO,	Record the complaints as they come in	Complaints Register
The contractor and Environmental Control Officer (ECO) must liaise with local NSR on how best to minimise impact and	ESCO, ECO, Contractor,	Develop a notification board/system Inform the local Noise Sensitive Receptors (NSRs) about the type of	Construction	ESCO, ECO,	The notification to the NSRs is dependent on	Notification of Noise activities plan, Complaints Register

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
the NSR must be kept informed of the nature and duration of intended activities with regard to unavoidable noisy night-time construction activities in the vicinity of NSR (closer than 1,000 m from any identified NSR).	Nosie Specialist (where required)	activities taking place which may have a noise impact. Complaints Grievance procedure for noise.			when the activities are taking place. Record any complaints as they are submitted by the NSRs.	
Where practicable and if applicable, mobile equipment should be fitted with broadband (white-noise generators/alarms), rather than tonal reverse alarms.	Engineer, Contractor, ESCO, ECO, Noise Specialist (Where required)	Implement broadband white-noise generators/alarms	Construction	Engineer, Contractor ESCO, ECO, Noise Specialist (Where required)	Daily	Site inspections to ensure the broadband white-noise generators/alarms are working
Project activities not to result in noise levels exceeding night-time noise levels of 45 dBA						
ECO/ESCO to ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures. Engine bay covers over heavy equipment could be pre-fitted with sound	ECO, ESCO, Contractor	Implement an Equipment checklist procedure and correction procedure (for when an issue is identified)	Construction	ECO, ESCO, Contractor	Daily	Equipment checklist, weekly ESCO and ECO Compliance report

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
absorbing material. Heavy equipment that fully encloses the engine bay should be considered, ensuring that the seam gap between the hood and vehicle body is minimised.						
ECO /ESCO to include a component covering environmental noise in the Health and Safety Induction to sensitize all employees and contractors about the potential impact from noise. specially those employees and contractors that have to travel past receptors at night, or might be required to do work close (within 1,000m) to NSRs at night. This could include issues such as minimising the use of vehicle horns.	ECO, ESCO, Contractor	Tool Box Talks	Construction	ECO, ESCO	Weekly	Tool Box Talks attendance registers and presentation notes

Impact management outcome: Noise Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
ECO to notify NSR before night-time construction activities are to take place within 500 m from NSR (if the structures are used for residential activities during the proposed construction period).	Project Manager, Contractor, ESCO, ECO	Implementation of a notification system to all respective NSRs when there will be night time construction activities taking place	Construction activities within 1,500 m from NSR, if NSR is used for residential purposes	Construction	Only required when night time construction activities are planned	Implementation of a notification system to all respective NSRs when there will be night time construction activities taking place
Minimize night-time construction traffic at locations where the access road is closer than 100m from any NSR	ESCO, ECO, Contractor, Project Manager, Health and Safety Officer	Develop a roster /notification system for the times when drivers can drive and when they cannot drive on site. Restrict unnecessary travel at night through security checkpoints.	Construction	ESCO, ECO, Health and Safety Officers	As required when nighttime driving will be required	Maintain the notification system and roster

Impact management outcome: Traffic Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Management of Noise Impacts - Recommendations						
Implementation of the traffic management plan (Annexure J)	Project Manger, ESCO, ECO, Health and Safety Officer	Traffic Management Plan (Annexure J)	Construction Operation	ESCO, ECO, Health and Safety Officer	As required by the Traffic Management Plan	The Traffic Management Plan (Annexure J) will determine the appropriate monitoring / reporting system.

APPENDIX 1: CV OF THE EAP

APPENDIX 2: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

Environmental Management Programme WEF: Phase 2

FE Overberg (Pty) Ltd
2nd Floor, Cape Town Cruise Terminal Building
V&A Waterfront, Cape Town, 8001
+27 (0)21 418 3940 • info@redrocket.energy
www.redrocket.energy

Reg No: 2020/787250/07



ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) FOR THE WESTERN CAPE WIND ENERGY FACILITY, LOCATED SOUTHWEST OF THE TOWN OF SWELLENDAM, WESTERN CAPE PROVINCE

APPLICANT: WESTERN CAPE WIND FARM (RF) (PTY) LTD
CONTACT: MAGDALENA LOGAN

terramanzi
GROUP (PTY) LTD

people. planet. prosperity.

tel: +27 21 701 5228
fax: +27 86 558 1213
mobile: +27 82 575 3800

email: info@terramanzi.co.za
website: www.terramanzi.co.za

postal: postnet suite 211, private bag X26, tokai, 7966

OCTOBER 2024

Contents

1 INTRODUCTION 7
1.1 EXECUTIVE SUMMARY 7
1.2 PROJECT COMPONENTS 12
1.3 ENVIRONMENTAL MANAGEMENT PROGRAMME 20
2 STRUCTURE OF THIS EMPR 23
3 TERMS OF REFERENCE 24
3.1 EAP DETAILS, EXPERTISE AND INDEPENDENCE 24
3.2 DEVELOPMENT CONSENT CONDITIONS 26
3.3 POLLUTION CONTROL APPROVALS 26
3.4 STATUTORY OBLIGATIONS 26
3.5 CONTRACT OBLIGATIONS 26
3.6 ENVIRONMENTAL RISKS 26
3.7 ENVIRONMENTAL OPPORTUNITIES 29
4 ENVIRONMENTAL OBJECTIVES, TARGETS AND MEASURES 30
4.1 PRE-CONSTRUCTION PHASE IMPACTS 30
4.1.1 Bulk Services Identification 30
4.1.2 Permits 30
4.1.3 Site Boundaries 30
4.1.4 Site Layout 31
4.1.5 “No-Go” Areas 31
4.1.6 Safety considerations 32
4.1.7 Contractor's SHE Officer 32
4.1.8 Emergency procedures 33
4.1.9 Waste management control 33
4.1.10 Stormwater and erosion control 33
4.1.11 Pollution control 33
4.1.12 Training 33
4.1.13 Construction phase site layout 34
4.1.14 Working Hours 35
4.1.15 Heritage Management 35
4.1.16 Wet Environments Management 36
4.1.17 Bat Management 41
4.1.18 Avifauna Management 41
4.1.19 Agriculture Management 42

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.1.20 Turbine Micro-siting 43
4.1.21 Transportation of wind turbine infrastructure and access routes 43
4.2 CONSTRUCTION PHASE IMPACTS 45
4.2.1 Site Establishment 45
4.2.2 Site Maintenance 46
4.2.3 Monitoring and Record Keeping 47
4.2.4 Community relations (Social disruption) 48
4.2.5 Working times 48
4.2.6 Work Stoppage and Temporary Site Closure 48
4.2.7 Existing Services and Infrastructure 49
4.2.8 Prevention of damage to surrounding infrastructure 49
4.2.9 Socio-economic Management 49
4.2.10 Appropriate Machinery Management 51
4.2.11 Waste Management 52
4.2.12 Trenching and excavations 55
4.2.13 Excavations and stockpiling 55
4.2.14 Sanitation 55
4.2.15 Environmental Awareness 56
4.2.16 Safety and First Aid Management 57
4.2.17 Emergency preparedness 57
4.2.18 Air Quality (Dust Impacts) Management 58
4.2.19 (Wastewater and Contaminated) Water Quality Management 59
4.2.20 Hazardous Material / Substance (Bitumen Oils and Lubricants) Management 60
4.2.21 Hazardous Material (Fuels, Oils and Others) Management 61
4.2.22 Workshop, Equipment Maintenance and Storage Management 63
4.2.23 Noise Pollution Management 65
4.2.24 Blasting/Drilling/Demolitions Management 66
4.2.25 Concrete Mixing (Batching) Management 66
4.2.26 Establishment of Construction Lay Down Area 67
4.2.27 Fire Management 68
4.2.28 Traffic Control Management 70
4.2.29 Wet Environments Management 71
4.2.30 Stormwater and Erosion Management 72
4.2.31 Flora and Fauna Management 74
4.2.32 Heritage Resources Management 76

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.33 Avifaunal Mitigation Measures 77
4.2.34 Bat Mitigation Measures 79
4.2.35 Visual Management 81
4.2.36 Topsoil Management 82
4.2.37 Agricultural Management 82
4.3 OPERATIONAL PHASE IMPACTS 84
4.3.1 Hazardous Material (Fuels, Oils and Others) Management 84
4.3.2 Solid waste management 85
4.3.3 Wet Environments Management 85
4.3.4 Stormwater and Erosion Management 85
4.3.5 Access and Signage 86
4.3.6 Maintenance 86
4.3.7 Flora and Fauna Management 87
4.3.8 Heritage Resource Management 89
4.3.9 Avifaunal Management 89
4.3.10 Bat Management 92
4.3.11 Visual Management: 94
4.3.12 Agricultural Management 94
4.3.13 Noise Management 95
4.3.14 Emergency Management 95
4.3.15 Fire Management 96
5 DECOMMISSIONING IMPACTS 98
6 IMPLEMENTATION OF THE EMPR 99
6.1 ENTITY RESPONSIBLE FOR DEVELOPMENT OF THE PROJECT 99
6.2 ROLES AND RESPONSIBILITIES 99
6.3 AUDITING OF THE EA AND THE EMPR 106
6.4 FREQUENCY OF VISITS BY THE ECO/ESCO 107
6.5 DOCUMENTED PROCEDURES 108
6.6 HANDLING OF COMPLAINTS RELATED TO THE PROJECT 108
6.7 CONDUCT OF EMPLOYEES ON SITE 108
6.8 MATTERS PERTAINING TO NON-CONFORMANCE ON SITE 109

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

List of Annexures

Annexure A *contains the Glossary*

Annexure B *contains the generic Method Statement*

Annexure C *contains relevant permits applicable to the proposed development (Environmental Authorizations as applicable to this Project)*

Annexure D *contains design and planning documentation.*

Annexure E *contains a detailed copy of the recommended Roles and Responsibilities of the Environmental Control Officer (ECO/ESCO)*

Annexure F *contains the Specialists Reports associated with the Western Cape Wind Energy Facility*

Annexure G *contains the EAP's Curriculum Vitae*

Annexure H *contains the Environmental Authorisation (once available)*

Annexure I *contains the Habitat restoration Plan*

Annexure J *contains the Traffic Management Plan*

Annexure K *contains the Chance Fossil Finds Procedure*

Annexure L *contains the DFFE Generic EMPr for Overhead Electricity Transmission and Distribution Infrastructure*

Annexure M *contains the DFFE Generic EMPr for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity*

IMPORTANT NOTE: ALL READERS TO PLEASE FAMILIARIZE THEMSELVES WITH THE RELEVANT TERMINOLOGY CONTAINED IN THE GLOSSARY (ANNEXURE A) PRIOR TO READING THIS DOCUMENT.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Appendix 4 Regulation 1 of GN No. R. 982 of the NEMA EIA Regulations (2014) stipulates that an Environmental Management Programme (EMPr) must comply with Section 24N of the NEMA and must include the following:

Regulation		Content of Environmental Management Programme (EMPr)	Reference
A4 R1 (a)		**Details of:**	
	(i)	*The EAP who prepared the report; and*	Annexure G
	(ii)	*The expertise of the EAP, including a curriculum vitae*	Annexure G
A4 R1 (b)		***A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;***	Section 1 and 4
A4 R1 (c)		***A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;***	Section 1
A4 R1 (d)		***A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-***	Section 4
	(i)	*Planning and design;*	Section 1 and 4
	(ii)	*Pre-construction activities;*	Section 4
	(iii)	*Construction activities;*	Section 4
	(iv)	*Rehabilitation of the environment after construction and where applicable post closure; and*	Section 4
	(v)	*Where relevant, operation activities;*	Section 4
A4 R1 (e)		***a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);***	Section 4
A4 R1 (f)		***a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to -***	Section 4 and Annexures
	(i)	*Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*	Section 4
	(ii)	*Comply with any prescribed environmental management standards or practices;*	Section 4
	(iii)	*Comply with any applicable provisions of the Act regarding closure, where applicable; and*	Section 4
	(iv)	*comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;*	Section 4
A4 R1 (g)		***The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);***	Section 6
A4 R1 (h)		***The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);***	Section 6
A4 R1 (i)		***An indication of the persons who will be responsible for the implementation of the impact management actions;***	Section 6
A4 R1 (j)		***The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;***	Section 6
A4 R1 (k)		***The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);***	Section 6
A4 R1 (l)		***A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;***	Section 6
A4 R1 (m)		***An environmental awareness plan describing the manner in which-***	Section 6
	(i)	*The applicant intends to inform his or her employees of any environmental risk which may result from their work; and*	
	(ii)	*risks must be dealt with in order to avoid pollution or the degradation of the environment;*	
A4 R1 (n)		***Any specific information that may be required by the competent authority.***	Section 1

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

The Western Cape Wind Energy Facility ("WCWEF") is located Southwest of the town of Swellendam within the jurisdiction of the Overberg District Municipality, in the Western Cape Province (Figure 1.1 below). The Project (as described undercover) was approved on 12 December 2021 (DFFE Ref:14/12/16/3/3/1/2437). As per **Condition 14** of the EA, the Environmental Management Programme (EMPr) was not approved. Conditions 13, to 19 must be complied with in order for the Competent Authority to approve this EMPr and which have accordingly been satisfied with a Part 2 Amendment Process of which this EMPr forms a part of and is submitted for Public consultation in August 2024. **This EMPr** was compiled to **comply with Conditions 13, 14 15 and 16 of the EA**. This EMPr accommodates the final layout design dated (02 August 2024), all conditions specified within the EA, all mitigation measures to be implemented on site as well as all specialist recommendations to ensure practicable feasible and environmentally suitable implementation of the project components.

Western Cape Wind Farm (Pty) Ltd has been selected as the **Preferred Bidder** in a tender submitted for a large industrial private off-taker. The project thus forms part of a private procurement programme in the commercial and industrial (C&I) sector. The project, under a private Power Purchase Agreement (PPA) will contribute electricity, which is intended to be 'wheeled' via the National Eskom Grid.

The WEF is located within a **Renewable Energy Development Zone** (REDZ)[1], specifically the Overberg REDZ (please refer to Figure 1.3 below), which dictated that the original permitting process for the WEF was subject to a Basic Assessment Process ("BAR") and not a full Scoping and EIA (S&EIA) process, which is typically the case. This REDZ qualification also allows for a shortened decision-making timeframe of **57 calendar days** (instead of 107 days). The reason for this is REDZ are strategically designed and demarcated by the Competent Authority to encourage this type of development in these specific areas for a range of strategic considerations.

The approximate coordinates of the WEF:
Northern Boundary: 34°05'44.66"S, 20°17'42.66"E
Eastern Boundary: 34°11'05.33"S, 20°26'26.06"E
Middle Point: 34°9'47.49"S, 20°22'9.03"E
Southern Boundary: 34°12'35.70"S, 20°25'35.77"E
Western Boundary: 34°08'39.34"S, 20°19'45.39"E

[1] A Strategic Environmental Assessment (SEA) was completed for Southern Africa for the identification of Renewable Energy Development Zones (REDZs) for the development of potential wind and solar projects, which would be of national strategic importance in terms of green energy in support of the country's electrical demand and economy. The proposed development is located entirely within the Overberg Renewable Energy Development Zone (REDZ) (namely REDZ 1), as defined and in terms of the procedures laid out in Government Notices No. 113 and No. 145 which were formally gazetted on 16 February 2018 and 26 February 2021, respectively.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

The full list of Listed Activities triggered by the proposed WEF are given below:

Table 1.2: Summary table of the listed activities proposed for the Western Cape WEF upgrades.

GNR (LN)	GNR Date	Activity	Theme
GNR 327 (LN1)	2017	Activity 11	Transmission and Distribution of Electricity.
		Activity 12	Development within or within 32 metres of a watercourse.
		Activity 19	Infilling or depositing of any material within watercourse.
		Activity 24	Road Development.
		Activity 28	Industrial development of Agricultural Land.
		Activity 56	Widening or lengthening of existing Roads.
GNR 325 (LN2)	2017	Activity 1	Generation of Electricity (Renewable).
		Activity 15	Clearance of vegetation.
GNR 324 (LN3)	2017	Activity 4	Road Development. (Within the Western Cape)
		Activity 12	Clearance of vegetation. (Within the Western Cape)
		Activity 14	Development of infrastructure greater than $10m^2$ within 32m of a watercourse, outside an urban area and within a CBA. (Within the Western Cape)
		Activity 18	Widening or lengthening of existing Roads. (Within the Western Cape)

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

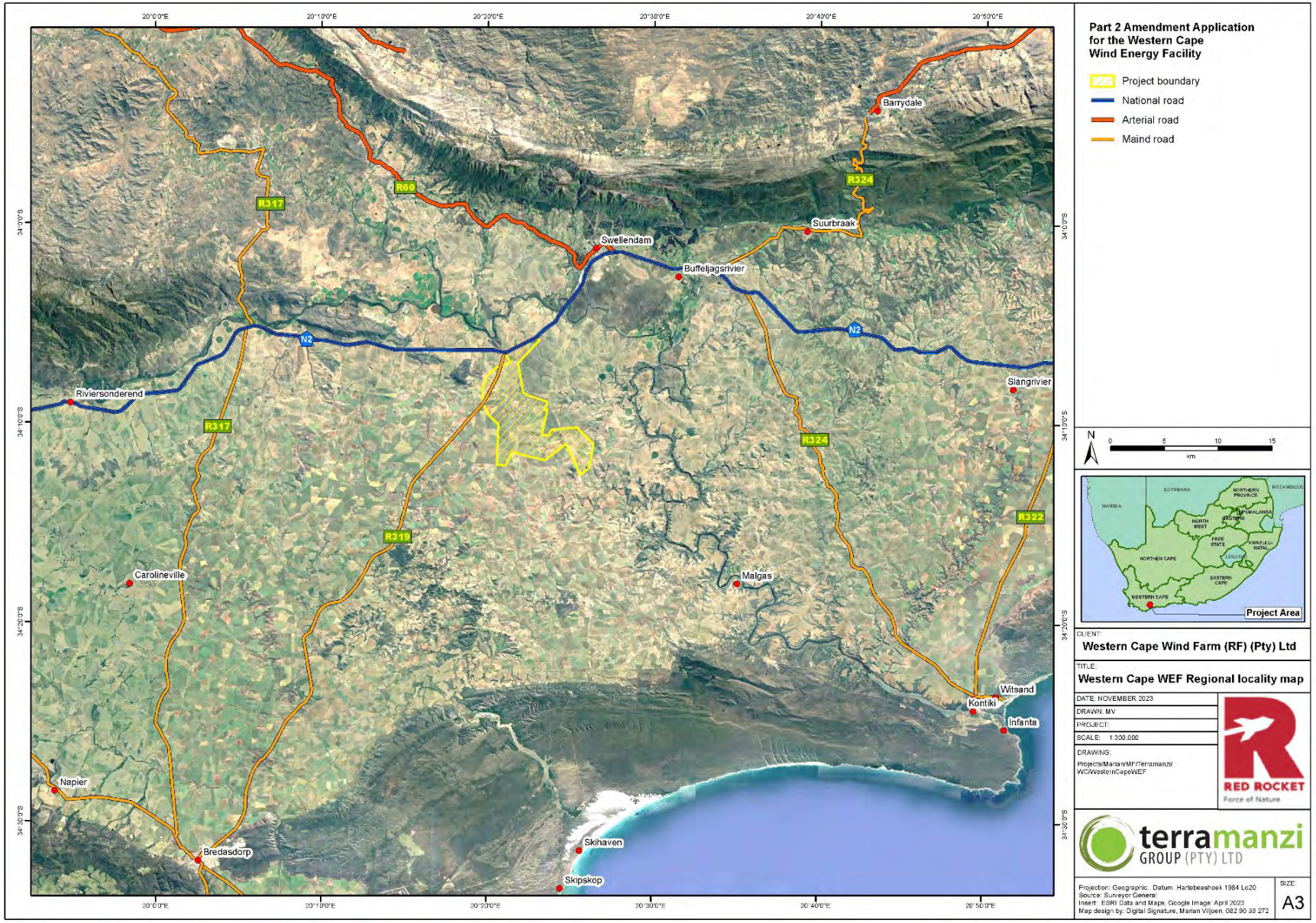


Figure 1.1: This figure shows the location of the proposed Western Cape WEF within a broad geographical context.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

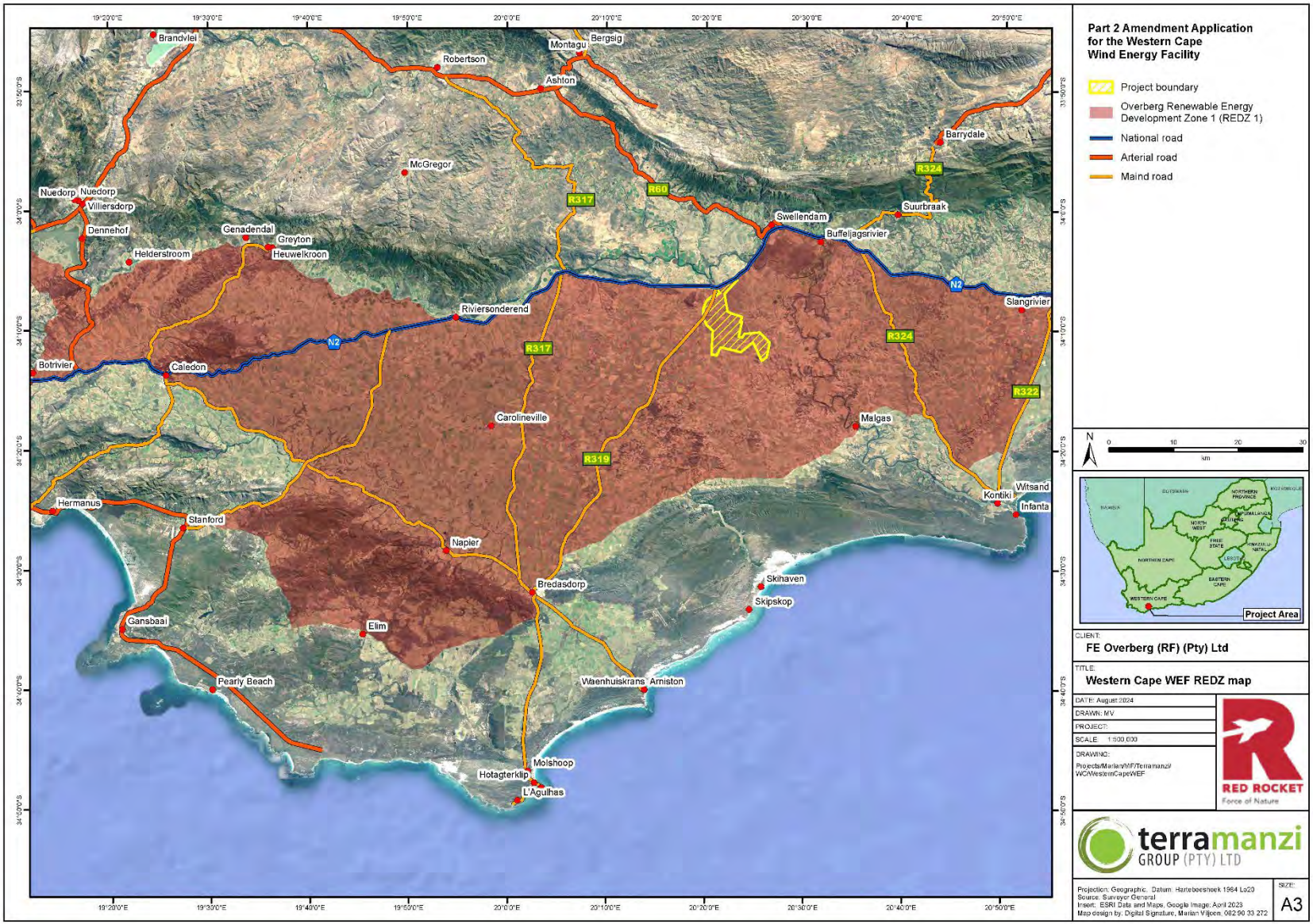


Figure 1.2: Western Cape Wind Energy Facility (indicated in yellow) falls within the Overberg REDZ1 (indicated in red).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

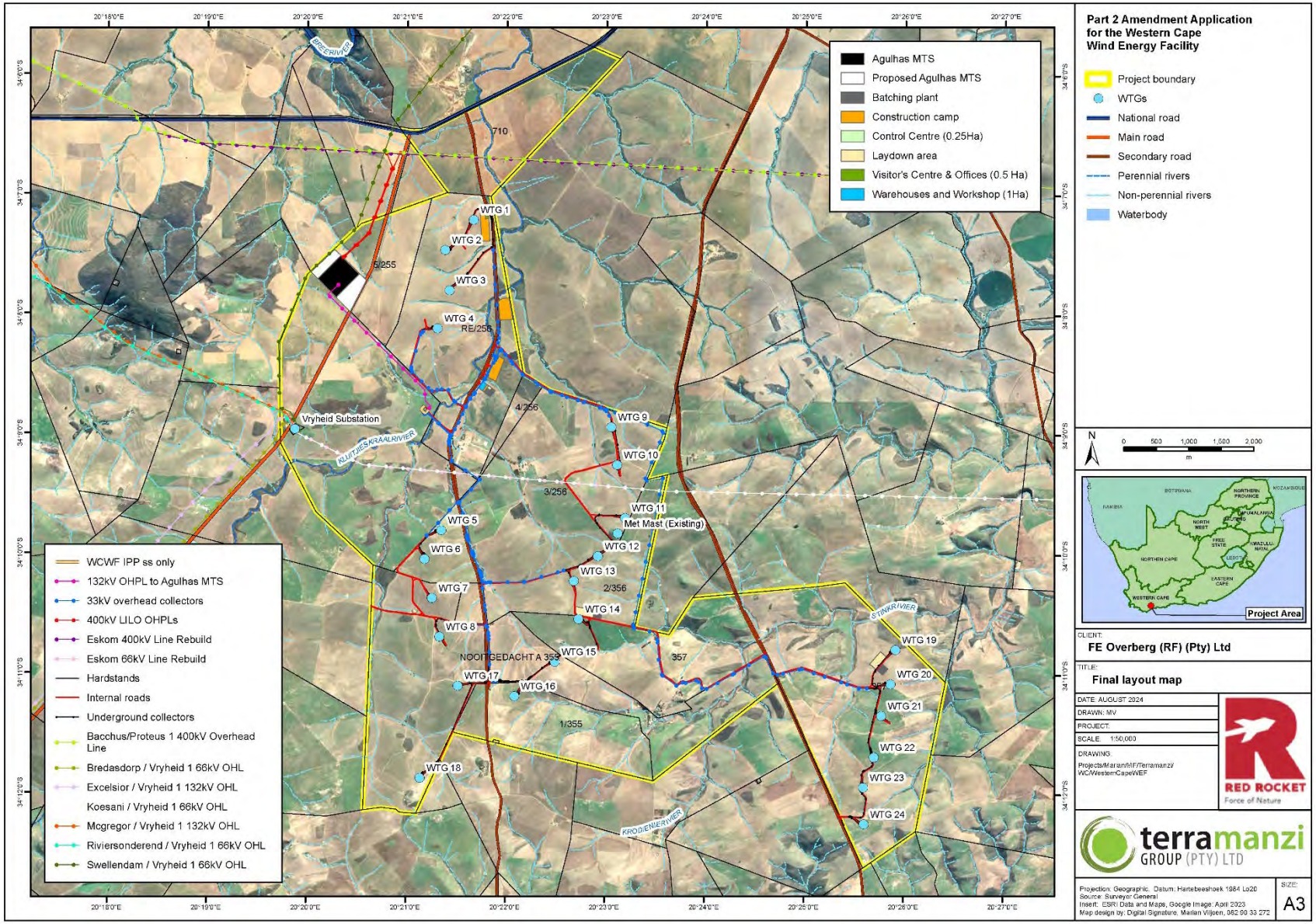


Figure 1.1 Final site layout plan for the Western Cape Wind Energy Facility, substation and all associated infrastructure (dated 02 August 2024).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

1.2 PROJECT COMPONENTS

The main components of the WEF and associated infrastructure includes *inter alia*:

- Up to 24 WTGs
- Total Generation Capacity of up to 149.9MW
- Generation Capacity of up to up to 8.2MW each
- Each WTG will consist of a transformer, steel tower, hub, nacelle (gearbox), and three rotor blades
- Maximum hub height of up to 150m
- Rotor length of up to 100m
- A rotor diameter of up to 200m
- Ground Clearance (lower swept blade tip height) 40m
- A 33/132kV WCWF IPP on-site substation (0.7ha)
- Associated Balance of Plant Areas which will include:
    - i). Temporary laydown areas,
    - ii). Construction camps, laydowns, and temporary concrete batching plants
    - iii). Operation and Maintenance buildings which will include control centre, warehouses, workshops, visitor's centre and offices
    - iv). Concrete turbine foundations and turbine hardstands areas of up to 7500m2
    - v). 132kV overhead power lines which will facilitate the connection of the WEF to the National Eskom Grid at the planned Agulhas Main Transmission Substation (MTS) from the WC WEF IPP Sub Station
    - vi). Up to 33kV overhead or underground cabling between the turbines and substation, to be laid underground and along roads where technically feasible
    - vii). Access roads to the site and between project components with a width of up to 12m and a servitude of up to 20m. The main access points will be up to 12m wide.
    - viii). Perimeter fencing, fencing of all buildings and substation

Updated Site Matrix (Opportunities and Constraints Mapping)

An updated set of spatial matrices were produced for all components of the Project and which include updated specialist spatial information which was used to guide detailed design parameters on the site to arrive at the final layout design (dated *"02 August 2024"*) for approval.

Terms of Reference:

1. Specialists were requested to provide a site matrix based on the requirements of Appendix 1 Regulation 3(h) (ix); of GN No. R. 326 of the NEMA EIA Regulations (2014, as amended).
2. Specialist were requested to provide a matrix for each component of The Project to **ensure optimal accuracy and positioning for each specific component of the facility**, as follows:
    a. **Wind Turbine Generators** (WTG) **Matrix:** this matrix is designed to target the specific potential impacts and influences that WTGs have on the site.
    b. **Associated infrastructure Matrix:** this matrix is designed to target the specific potential impacts and influences of the associated infrastructure. The infrastructure includes the substation facility, operations and maintenance buildings (which includes gate houses, a security building, a control centre, offices, warehouses, workshops and visitor's centre) as well as the internal roads (up to 12m wide with a servitude of up to 20m wide).and the powerlines which includes the 132kV Overhead Powerline ("OHPL") and the 33kV cabling between the turbines (overhead or underground cabling).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

3. The site maps were informed by expert assessment and consolidated by a GIS specialist and are presented as a **consolidated component site matrix**, for each component and which is presented below.
4. The matrices maps provided have guided the final layout design (dated 02 August 2024) to ensure a practical and environmentally acceptable solution for the site.
5. These matrices maps indicate the consolidated sensitivity features from each specialist input on each component.
6. All sensitive features e.g., Important Bird Areas, Critical Biodiversity Areas, Ecological Support Areas, heritage sites, wetlands, pans and drainage channels. All "no-go" and buffer areas that will be affected by the components undercover; have been identified and included within these maps as a set of matrices.

Description of the areas (colour coded for ease of reference):

- **Developable** means areas that are not sensitive and accordingly do not have any development constraints
- **Acceptable / Developable with mitigation** means areas that have some sensitivity but development can proceed with specified mitigation measures which have either reduced or removed the identified risk to acceptable levels
- **No-Go / Not Developable** means areas that have sensitivity of a nature that are either not mitigatable or would represent a fatal flaw should design extend into these areas, traditionally known as a ''no-go'' areas.

Developable Area	Acceptable Area	Not Developable

Opportunities and Constraints Map for the WTG's (Figure 1.4 below)

Within the final layout design (dated 02 August 2024) of the WEF, each WTG has been strategically positioned to avoid the red, No-Go areas in accordance with the principles of practicability and feasibility (Figure 7.6). WTGs situated within the yellow areas mean that their locations are deemed acceptable, provided that the prescribed mitigation measures outlined in Section 7.1 and the EMPr (Appendix E), as articulated by the Professional Team are implemented. Both the Professional Team and the EAP are satisfied with the placement and micro-siting of the WTGs as proposed within the final layout dated 02 August 2024.

Opportunities and Constraints Map for associated infrastructure (Figures 1.5 below)

Substation and permanent infrastructure

The design of the substation component and operations and maintenance buildings (which includes control centre, warehouses and workshops, and visitor's centre and offices) has been optimised based on its proximity to the planned Eskom Agulhas Main Transmission Substation (MTS) and has also been designed to avoid the No-Go red areas.

Internal roads

The design of internal roads within the Western Cape WEF prioritises avoidance of the No-Go areas. To optimise the road network, many of the internal roads have been aligned with existing routes. In certain areas, however, some internal roads will require widening or construction to accommodate various necessary elements, such as cut and fill requirements, side drains, stormwater control

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

measures, turning areas, and adequate vertical and horizontal turning radii to ensure the safe transportation of WTG components.

Powerlines

The powerline components have been designed to avoid no-go areas. There are two aspects to this component, as follows:

a) The 132kV Overhead Powerline (OHPL) to the Agulhas MTS is placed within an acceptable area and appropriate mitigations measures area detailed to ensure low impact to the environment.
b) The 33kV WTG collectors between the turbine components (**specifically the above-ground design**) is considered **sensitive primarily from an avifaunal perspective**. Where the proposed 33kV OHPL crosses any No-Go areas, it is a specialist requirement that the cabling in these areas needs to go underground to ensure that potential impacts here are mitigated to acceptable levels. **Therefore, a combination of above-ground OHPL and underground OHPL cabling for the 33kV routing will take place as aligned with the matrix undercover**.

The associated permanent infrastructures (Substation, Internal Roads and Powerlines) are within areas acceptable locations, provided that the prescribed mitigation measures outlined in the EMPr, as articulated by the Professional Team are strictly implemented. Both the Professional Team and the EAP are satisfied with the placement of the associated permanent infrastructure within this finalised layout.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

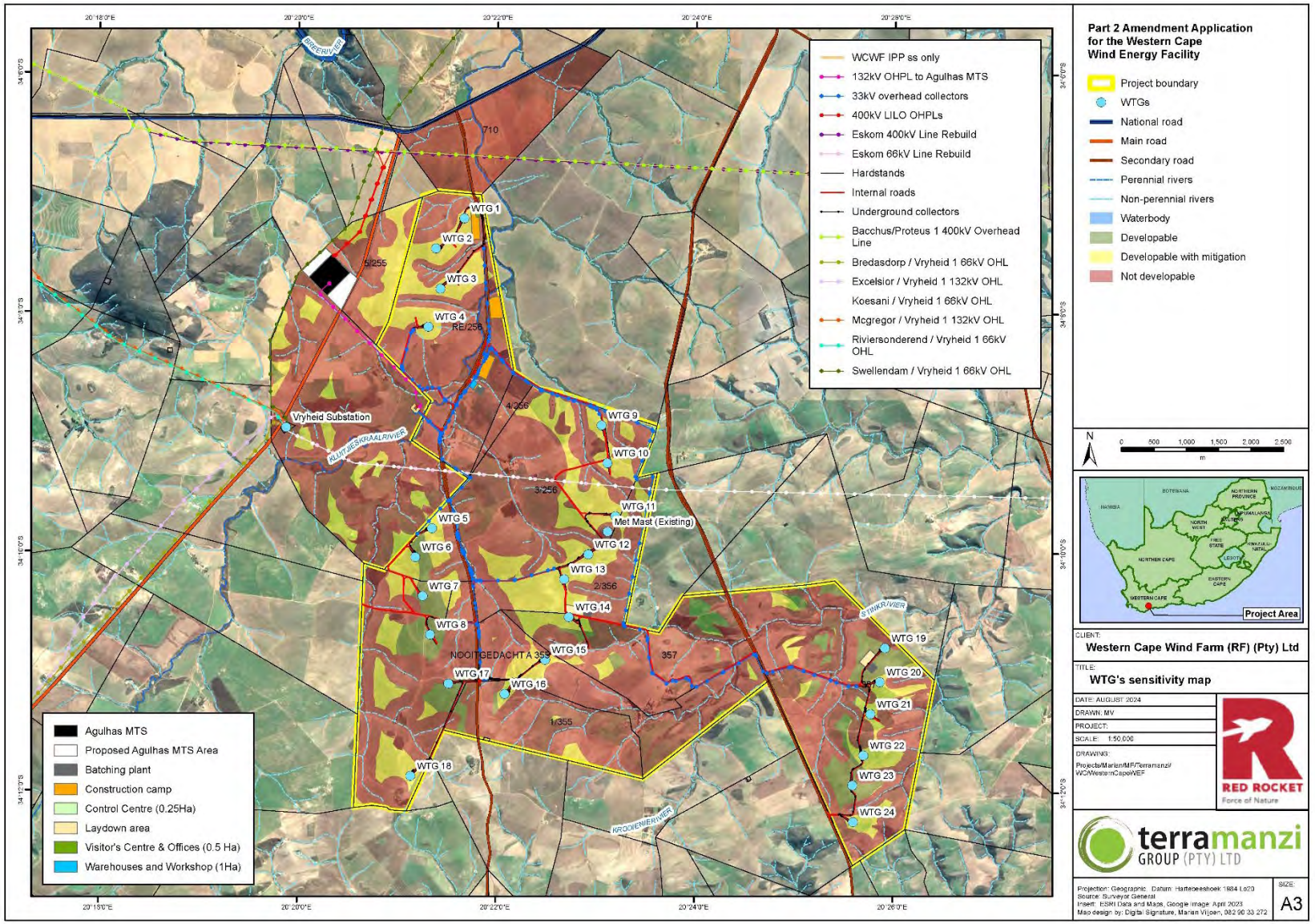


Figure 1.4. Opportunities and Constraints in comparison to the WTG's final positioning (dated 02 August 2024).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

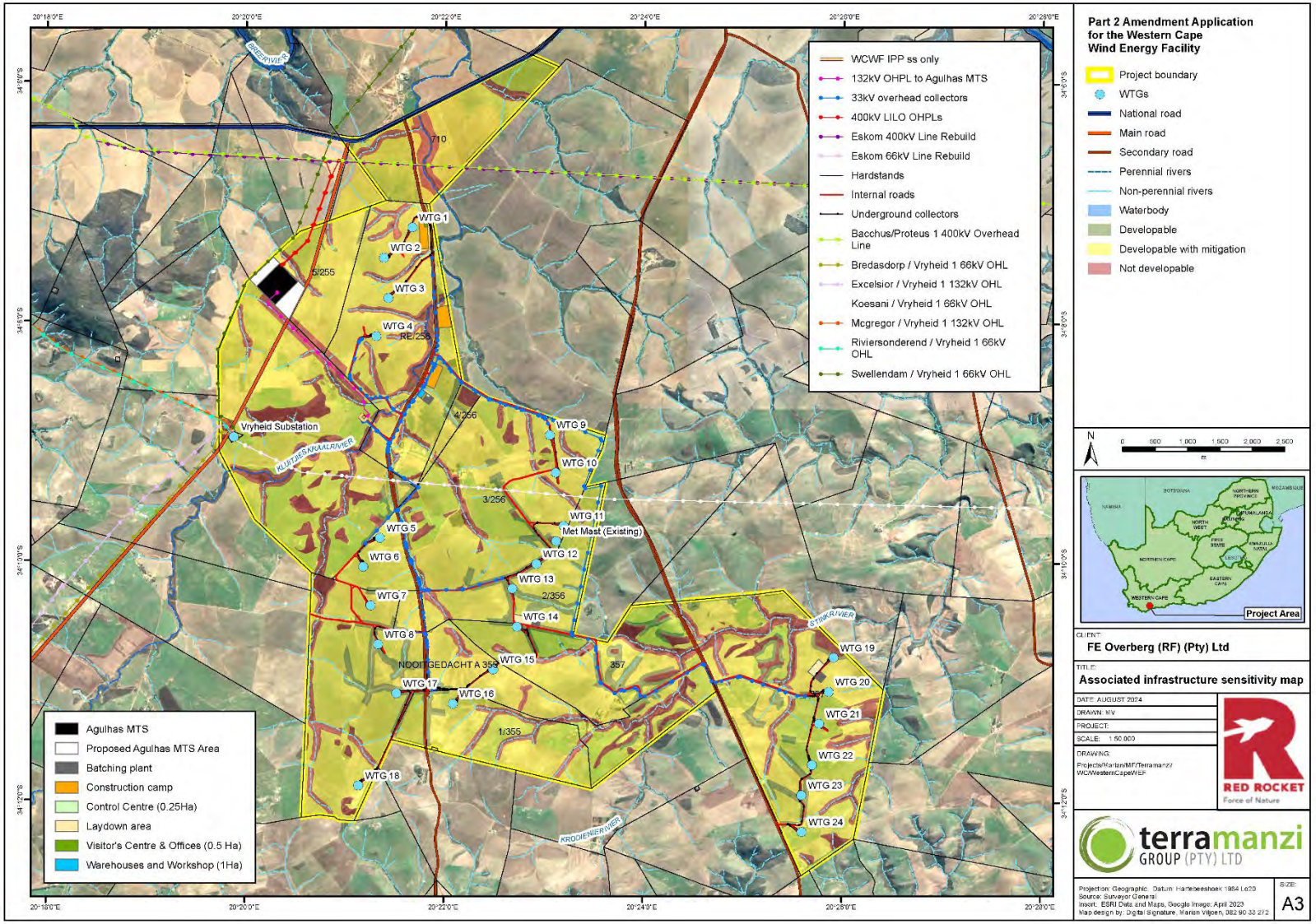


Figure 1.5. Opportunities and Constraints in comparison to the associated infrastructure final positioning (dated 02 August 2024).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Table 1.3 The GPS coordinates of the WEF and associated infrastructure are presented in the table below:

POINT OF INTEREST	LATITUDE	LONGITUDE
WTG 1	34° 7'12.92"S	20°21'40.01"E
WTG 2	34° 7'28.14"S	20°21'22.87"E
WTG 3	34° 7'48.36"S	20°21'25.57"E
WTG 4	34° 8'7.41"S	20°21'18.46"E
WTG 5	34° 9'48.28"S	20°21'20.99"E
WTG 6	34°10'2.72"S	20°21'10.99"E
WTG 7	34°10'22.19"S	20°21'15.49"E
WTG 8	34°10'41.64"S	20°21'20.04"E
WTG 9	34° 8'56.56"S	20°23'3.21"E
WTG 10	34° 9'15.31"S	20°23'6.80"E
WTG 11	34° 9'41.89"S	20°23'11.64"E
WTG 12	34°10'1.06"S	20°22'55.41"E
WTG 13	34°10'13.52"S	20°22'40.97"E
WTG 14	34°10'32.57"S	20°22'43.79"E
WTG 15	34°10'54.04"S	20°22'29.60"E
WTG 16	34°11'11.30"S	20°22'5.25"E
WTG 17	34°11'6.20"S	20°21'31.21"E
WTG 18	34°11'52.45"S	20°21'8.48"E
WTG 19	34°10'47.51"S	20°25'54.80"E
WTG 20	34°11'4.62"S	20°25'51.87"E
WTG 21	34°11'20.65"S	20°25'46.31"E
WTG 22	34°11'41.44"S	20°25'42.06"E
WTG 23	34°11'56.48"S	20°25'35.61"E
WTG 24	34°12'14.92"S	20°25'36.02"E
WC WEF IPP Substation	***Latitude***	***Longitude***
Centre Point	34° 8'48.33"S	20°21'10.90"E
Corner 1 of Substation	34° 8'47.98"S	20°21'8.64"E
Corner 2 of Substation	34° 8'46.28"S	20°21'10.61"E
Corner 3 of Substation	34° 8'48.30"S	20°21'13.11"E
Corner 4 of Substation	34° 8'50.00"S	20°21'11.14"E
132kV Overhead Powerline from WEC WEF IPP Substation to Agulhas MTS	***Latitude***	***Longitude***
Start Point	34° 8'48.32"S	20°21'12.58"E
Bend Point 1	34° 8'46.47"S	20°21'14.59"E
Bend Point 2	34° 8'43.94"S	20°21'11.41"E
Bend Point 3	34° 8'38.16"S	20°21'10.72"E
Middle Point	34° 8'16.45"S	20°20'44.10"E
Bend Point 4	34° 7'50.52"S	20°20'12.35"E
End Point	34° 7'45.51"S	20°20'18.92"E
Warehouse & Workshop, Control centre and Batching Plant Area	***Latitude***	***Longitude***
Centre Point	34° 8'37.68"S	20°21'47.88"E
Corner 1	34° 8'33.69"S	20°21'45.74"E

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Corner 2	34° 8'38.40"S	20°21'53.17"E
Corner 3	34° 8'41.56"S	20°21'50.30"E
Corner 4	34° 8'36.85"S	20°21'42.99"E
Visitor's Centre & Offices	***Latitude***	***Longitude***
Centre Point	34° 7'10.87"S	20°21'47.91"E
Corner 1	34° 7'9.20"S	20°21'48.81"E
Corner 2	34° 7'9.09"S	20°21'48.82"E
Corner 3	34° 7'12.25"S	20°21'49.03"E
Corner 4	34° 7'12.34"S	20°21'47.06"E
Construction Camp & Laydown Area 1	***Latitude***	***Longitude***
Centre Point	34° 7'17.14"S	20°21'46.82"E
Corner 1	34° 7'9.31"S	20°21'43.96"E
Corner 2	34° 7'9.09"S	20°21'48.83"E
Corner 3	34° 7'23.35"S	20°21'49.72"E
Corner 4	34° 7'23.57"S	20°21'44.84"E
Construction Camp & Laydown Area 2	***Latitude***	***Longitude***
Centre Point	34° 7'57.93"S	20°21'59.15"E
Corner 1	34° 7'53.86"S	20°21'55.06"E
Corner 2	34° 7'53.32"S	20°21'55.39"E
Corner 3	34° 7'52.26"S	20°21'57.36"E
Corner 4	34° 7'52.07"S	20°22'1.51"E
Corner 5	34° 8'2.70"S	20°22'3.87"E
Corner 6	34° 8'3.13"S	20°21'56.07"E
Construction Camp & Laydown Area 3	***Latitude***	***Longitude***
Centre Point	34° 8'27.33"S	20°21'53.11"E
Corner 1	34° 8'20.43"S	20°21'53.22"E
Corner 2	34° 8'22.74"S	20°21'58.83"E
Corner 3	34° 8'33.67"S	20°21'53.62"E
Corner 4	34° 8'31.41"S	20°21'47.82"E
Construction Camp & Laydown Area 4	***Latitude***	***Longitude***
Centre Point	34° 8'37.74"S	20°21'48.02"E
Corner 1	34° 8'33.71"S	20°21'45.73"E
Corner 2	34° 8'38.44"S	20°21'53.18"E
Corner 3	34° 8'41.58"S	20°21'50.27"E
Corner 4	34° 8'36.86"S	20°21'42.99"E
Temporary laydown Area 5	***Latitude***	***Longitude***
Centre point	34°10'29.22"S	20°22'47.54"E
Corner 1	34°10'26.23"S	20°22'42.05"E
Corner 2	34°10'28.11"S	20°22'53.54"E
Corner 3	34°10'31.93"S	20°22'52.64"E
Corner 4	34°10'30.36"S	20°22'43.07"E
Corner 5	34°10'29.30"S	20°22'42.12"E
Temporary Laydown Area 6	***Latitude***	***Longitude***
Centre point	34°10'53.01"S	20°25'44.37"E

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Corner 1	34°10'48.36"S	20°25'45.88"E
Corner 2	34°10'50.87"S	20°25'49.44"E
Corner 3	34°10'57.07"S	20°25'43.11"E
Corner 4	34°10'54.54"S	20°25'39.55"E
Batching Plant 1	***Latitude***	***Longitude***
Centre Point	34° 8'38.93"S	20°21'49.68"E
Corner 1	34° 8'36.01"S	20°21'49.32"E
Corner 2	34° 8'38.42"S	20°21'53.14"E
Corner 3	34° 8'41.56"S	20°21'50.27"E
Corner 4	34° 8'39.10"S	20°21'46.46"E
Batching Plant 2	***Latitude***	***Longitude***
Centre Point	34°10'30.48"S	20°22'55.39"E
Corner 1	34°10'28.14"S	20°22'53.56"E
Corner 2	34°10'28.78"S	20°22'58.30"E
Corner 3	34°10'32.71"S	20°22'57.29"E
Corner 4	34°10'31.94"S	20°22'52.67"E
Batching Plant 3	***Latitude***	***Longitude***
Centre Point	34°10'57.35"S	20°25'47.04"E
Corner 1	34°10'54.46"S	20°25'46.90"E
Corner 2	34°10'57.03"S	20°25'50.43"E
Corner 3	34°11'0.08"S	20°25'47.22"E
Corner 4	34°10'57.49"S	20°25'43.72"E

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

1.3 ENVIRONMENTAL MANAGEMENT PROGRAMME

The project was initially granted EA on 12 December 2021 with DFFE Reference number: 14/12/16/3/3/1/2437. As per Condition 14 if the EA, the EMPr was **not approved**. Conditions 13 to 19 must be complied with in order for the Competent Authority to approve the EMPr, which have accordingly been satisfied with this Part 2 Amendment Process of which this EMPr forms part of. The following conditions apply as per the EA:

13. *A final site layout plan for the 140MW Western Cape Wind Energy Facility, substation and all associated infrastructure, as determined by the detailed engineering phase and micro-siting of the wind turbine positions, and all mitigation measures as dictated by the final site layout plan, must be submitted to the Department for approval prior to construction. A copy of the final site layout map must be made available for comments to register Interested and Affected Parties and the holder of this Environmental Authorisation must consider such comments. Once amended, the final development layout map must be submitted to the Department for written approval prior to commencement of the activity. All available biodiversity information must be used in the finalisation of the layout map. Existing infrastructure must be used as far as possible e.g., roads. The layout map must indicate the following:*
    - *13.1 The position of wind turbines and associated infrastructure;*
    - *13.2. Internal Roads indicating width;*
    - *13.3. Wetlands, drainage lines, rivers, stream and water crossing of roads and cables;*
    - *13.4. All sensitive features e.g., Important Bird Areas, Critical Biodiversity Areas, Ecological Support Areas, heritage sites, wetlands, pans and drainage channels that will be affected by the facility and associated infrastructure;*
    - *13.5. The BESS, substation(s) inverters and/or transformer(s) sites including their entire footprint;*
    - *13.6. Connection routes (including pylon positions) to the distribution/transmission network;*
    - *13.7. All existing infrastructure on the site, such as roads;*
    - *13.8. Soil heaps (temporary for topsoil and subsoil and permanently for excess material);*
    - *13.9. Buildings, including accommodation; and*
    - *13.10.All "no-go" and buffer areas*
14. *The Environmental Management Programme (EMPr) submitted as part of the BAR dated October Is not approved and must be amended to include measures as dictated by the final site lay-out map and micro siting, and the provisions of this Environmental Authorisation. The EMPr must be made available for comments by registered Interested and Affected Parties and the holder of this Environmental Authorisation must consider such commen1B. Once amended, the final EMPr must be submitted ID the Department for written approval prior to commencement of the activity.*
15. *The EMPr amendments must Include the following:*
    - *15.1.All recommendations and mitigation measures recorded In the BAR and the specialist reports as included in the BAR dated October 2021.*
    - *15.2.The requirements and conditions of this authorisation.*
    - *15.3.An effective monitoring system to detect any leakage or spillage of any hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems.*
    - *15.4.A transportation plan for the transport of turbine components, main assembly cranes and other*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

large equipment.

15.5. An environmen1BI sensitivity map Indicating environmentally sensitive areas and features Identified during the EIA process.

15.6. Measures to protect hydrological features such as mams, rivers, pans. wetlands., dams and their

catchments, and other environmentally sensitive areas fr.om construction impacts Including the direct or indirect spillage of pollutants.

16. *Part C (Site Specific Environmental Attributes) of the generic EMPrs (Annexure Land Annexure M) for the Overhead Line and Substation and all associated infrastructure, submitted as part of the BAR dated October 2021, is not approved. Part.C must be amended to include measures as dictated by the final site layout map and micro siting and the provisions of this Environmental Authorisation. Part C of the generic EMPrs must be made available for comments to registered Interested and Affected Parties and the holder of this Environmental Authorisation must consider such comments. Once amended, the generic EMPrs must be submitted to the Department for written approval of Part C prior to commencement of the activity.*

    Part C of the generic EMPRs must be amended to include the following:

    16.1. The requirements and conditions of this Environmental Authorisation

    16.2. Measures as dictated by the final site layout map and micro-siting

    16.3. All recommendations and mitigation measures recorded In the BAR and the specialist reports as included In the BAR dated October 2021

    16.4. An effective monitoring system to detect any leakage or spillage of any hazardous substances during their transportation, hand ling, use or storage. This must Include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems

    16.5. A fire management plan to be implemented during the construction and operation of the facility;

    16.6. A re-vegetation and habitat rehabilitation plan. The plan must provide for restoration to be undertaken as soon as possible after completion of construction activities, to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

    16.7. An aquatic Rehabilitation and Monitoring plan, particularly for watercourse features that will be infilled and/or excavated;

    16.8. A stormwater management plan: and

    16.9. The final site layout map.

17. *The EMPrs must be Implemented and strictly enforced during all phases of the project. It shall be seen as a dynamic document and shall be Included In all contract documentation for all phases of the development once approved.*
18. *Changes to the approved EMPrs must be submitted in accordance with the EIA Regulations applicable* at the time.
19. The Department reserves the right to amend the approved EMPrs should any impacts that ware not anticipated or covered in the BAR be discovered.

Please note that the Applicant is not applying for an EMPr Amendment, but rather the **EMPr is being updated (as a new EMPr) to ensure compliance with the above-mentioned Conditions of Authorisation.**

Please note that this EMPr addresses the construction and operation of the WEF and all associated infrastructure. Additionally Generic EMPrs are required to be approved for the proposed power lines and the substation and are appended to this EMPr (Annexure O and P respectively), as follows:

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

1. Generic Environmental Management Programme (EMPr) for the Development and Expansion for Overhead Electricity Transmission and Distribution Infrastructure.
2. Generic Environmental Management Programme (EMPr) for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

2 STRUCTURE OF THIS EMPR

Section 1 provides an introduction to the Project.

Section 2 details the structure of this EMPr.

Section 3 deals with the terms of reference for this EMPr as well as identifies environmental risks and opportunities.

Section 4 and 5 documents the environmental objectives, targets and measures for each environmental risk identified.

Section 6 deals with the implementation of the EMPr including the assignment of roles and responsibilities, visits by the ECO/ESCO, documented procedures and handling of complaints related to the Project.

Annexure A contains the Glossary

Annexure B contains the generic Method Statement

Annexure C contains relevant permits applicable to the proposed development (Environmental Authorizations as applicable to this Project)

Annexure D contains design and planning documentation.

Annexure E contains a detailed copy of the recommended Roles and Responsibilities of the Environmental Control Officer (ECO/ESCO)

Annexure F contains the Specialists Reports associated with the Western Cape Wind Energy Facility

Annexure G contains the EAP's Curriculum Vitae

Annexure H contains the Environmental Authorisation (once available)

Annexure I contains the Aquatic Rehabilitation Management Plan

Annexure J contains the Traffic and Transportation Management Plan

Annexure K contains the Stormwater Management Plan

Annexure L contains the Fire Management Plan

Annexure M contains the Re-vegetation and Habitat Rehabilitation Plan

Annexure N contains the Chance Fossil Finds Procedure

Annexure O contains the DFFE Generic EMPr for Overhead Electricity Transmission and Distribution Infrastructure

Annexure P contains the DFFE Generic EMPr for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

3 TERMS OF REFERENCE

This EMPr was designed and produced in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations 2014, as amended. This EMPr also includes the best practice provisions which are recognised as International Best Practice and based on the ISO 14001 system, as well as any applicable statutory environmental requirements.

Terramanzi Group (Pty) Ltd ("TMG"), is the consulting firm appointed to undertake this Application for Environmental Authorisation on behalf of the Applicant.

3.1 EAP DETAILS, EXPERTISE AND INDEPENDENCE

*In accordance with **Appendix 4 of the NEMA EIA Regulations (2014, as amended)**:*

Details of-

i. The EAP that prepared the report, and
ii. The expertise of the EAP, including curriculum vitae

Ludwig van der Merwe is a Senior Environmental Consultant at the Terramanzi Group (Pty) Ltd who compiled this report. Ludwig holds a BSc (with Hons) in Conservation Ecology from the University of Stellenbosch and a Master of Environmental Management and Development from the Australian National University. He has experience doing environmental management, environmental compliance, water use license applications and specialist report writing. Ludwig is registered as a EAP (2020/2817) with the Environmental Assessment Practitioners Association of South Africa (EAPASA), a Natural Scientist in the field of Environmental Science (Pr.Sci.Nat) (133969) and is a member of the International Association for Impact Assessment (IAIAsa). Ludwig was assisted by the following Team members.

This Report was peer-reviewed by Fabio Venturi, whose career spans over 20 years in the industry, across both the government and private sectors of the green economy. Fabio's entrepreneurial drive to innovate and influence has resulted in multiple industry firsts and awards. Fabio is an Accredited Professional with the GBCSA, a Certified Environmental Scientist, served on the South Africa Environmental Industry Body, that being the Western Cape Committee Branch of the South African Affiliate of the International Association for Impact Assessment (IAIAsa), and sat on the National Executive Committee (NEC) of IAIAsa, is a founding member of the Environmental Assessment Practitioner's Association of South Africa (EAPASA, #2021/4088), and is a Certified Carbon Footprint Analyst and Energy Efficiency Auditor.

Tarryn Frankland is an Environmental Consultant for the Terramanzi Group (Pty) and holds a a BSc Honours in Geography and Environmental Management, and an MSc in Environmental Science. She has accumulated experience in the fields of environmental management, health and safety, air quality and renewable energy. Tarryn is registered as a Candidate EAP (2022/6205) with the Environmental Assessment Practitioners Association of South Africa (EAPASA), and is a member of the International Association for Impact Assessment (IAIAsa).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Bryan Cloete is an Environmental Consultant for the Terramanzi Group (Pty) Ltd and holds a BSc (with Hons) in Biodiversity and Conservation Biology and an MSc in Biodiversity and Conservation Biodiversity. He has accumulated experience in the fields of environmental management, environmental compliance and specialist report writing. Bryan is registered as a Candidate EAP with the Environmental Assessment Practitioners Association of South Africa (EPASA) and is a member of the International Association for Impact Assessment (IAIAsa).

Ana Mosse is a Junior Environmental Consultant for the Terramanzi Group (Pty) Ltd and holds a Diploma in Environmental Management from the Cape Peninsula University of Technology (CPUT), with experience in field assessments, collecting and analysing data, environmental checklists and carbon footprint. Ana has worked in diverse projects aimed at sustainability, conservation and environmental stewardship and is a member of the International Association for Impact Assessment (IAIAsa).

Chane Olckers is Operations Manager for the Terramanzi Group (Pty) Ltd and holds a BSc in Law (LLB) from the University of South Africa (UNISA). Chane has experience with environmental authorisation applications, basic assessment reports, scoping and environmental impact assessment reports, environmental management programmes, executing the public participation process, environmental compliance audits, environmental control officer (ECO) services, environmental screening, due diligence assessments as per project specifications.

TMG hereby declares that they have no conflicts of interest related to the work of this Report. Specifically, TMG declares that they have no personal financial interests in the property and/or activity being assessed in this report, and that they have no personal or financial connections to the relevant property owners, developers, planners, financiers or consultants of the property or activity, other than fair remuneration for professional services rendered for this Report to the Competent Authority. TMG declares that the opinions expressed in this Report are independent and a true reflection of their professional expertise.

TMG hereby declares that they have no conflicts of interest related to the work of this Report. Specifically, TMG declares that they have no personal financial interests in the property and/or activity being assessed in this report, and that they have no personal or financial connections to the relevant property owners, developers, planners, financiers or consultants of the property or activity, other than fair remuneration for professional services rendered for this Report to the Competent Authority. TMG declares that the opinions expressed in this Report are independent and a true reflection of their professional expertise.

Please refer to Annexure G for the EAP's Curriculum Vitae

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

3.2 DEVELOPMENT CONSENT CONDITIONS

Please refer to Annexure B.

3.3 POLLUTION CONTROL APPROVALS

Not applicable.

3.4 STATUTORY OBLIGATIONS

The applicant should incorporate the following statutory and best practice requirements as part of any contract documentation related to the construction, operation and decommissioning of the proposed development:

- The National Environmental Management Act, Act 107 of 1998 (NEMA)
- National Environmental Management: Biodiversity Act 10 of 2004 (as amended)
- National Water Act, 1998 (Act No. 36 of 1998) (as amended)
- National Heritage Resources Act, Act 25 of 1999 (as amended)
- The National Environmental Management: Waste Act (March 2008)
- Relevant SANS codes

3.5 CONTRACT OBLIGATIONS

It is understood that all contract documentation related to the construction, operation and decommissioning (if required) of the proposed development will include the conditions of this EMPr. It is important to note that the contract obligations must include the recording of any complaints on the project in the environmental register (defined below). Further, it is incumbent on the ECO/ESCO to keep an accurate audit trail showing compliance with the EMPr during construction phase.

3.6 ENVIRONMENTAL RISKS

The following environmental risks have been identified based on the available information:

Potential Impact	EMP reference
PRE-CONSTRUCTION	
Bulk Services Identification	Refer to Section 4.1
Permits	Refer to Section 4.1
Site Boundaries	Refer to Section 4.1
"No-Go" Areas	Refer to Section 4.1
Health Awareness (COVID-19)	Refer to Section 4.1
Safety Considerations	Refer to Section 4.1
Contractor's SHE Officer	Refer to Section 4.1
Emergency Awareness	Refer to Section 4.1
Waste Management Control	Refer to Section 4.1
Stormwater and Erosion Control	Refer to Section 4.1
Pollution Control	Refer to Section 4.1
Training	Refer to Section 4.1
Construction Phase Site Layout	Refer to Section 4.1
Working Hours	Refer to Section 4.1
Heritage Management	Refer to Section 4.1

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Wet Environments Management	Refer to Section 4.1
Bat Management	Refer to Section 4.1
Agricultural Management	Refer to Section 4.1
Noise Management	Refer to Section 4.1
Turbine Micro-siting	Refer to Section 4.1
Transportation of Wind Turbine Infrastructure	Refer to Section 4.1
CONSTRUCTION PHASE	
Site Establishment	Refer to Section 4.2
Site Maintenance	Refer to Section 4.2
Monitoring and Record Keeping	Refer to Section 4.2
Community relations (Social disruption)	Refer to Section 4.2
Working times	Refer to Section 4.2
Work Stoppage and Temporary Site Closure	Refer to Section 4.2
Existing Services and Infrastructure	Refer to Section 4.2
Prevention of damage to surrounding infrastructure	Refer to Section 4.2
Socio-economic Management	Refer to Section 4.2
Appropriate Machinery Management	Refer to Section 4.2
Waste Management	Refer to Section 4.2
Trenching and excavations	Refer to Section 4.2
Excavations and stockpiling	Refer to Section 4.2
Sanitation	Refer to Section 4.2
Health Awareness (COVID-19)	Refer to Section 4.2
Environmental Awareness	Refer to Section 4.2
Safety and First Aid Management	Refer to Section 4.2
Emergency preparedness	Refer to Section 4.2
Air Quality (Dust Impacts) Management	Refer to Section 4.2
(Wastewater and Contaminated) Water Quality Management	Refer to Section 4.2
Hazardous Material / Substance (Bitumen Oils and Lubricants) Management	Refer to Section 4.2
Hazardous Material (Fuels, Oils and Others) Management	Refer to Section 4.2
Workshop, Equipment Maintenance and Storage Management	Refer to Section 4.2
Noise Pollution Management	Refer to Section 4.2
Blasting/Drilling/Demolitions Management	Refer to Section 4.2
Concrete Mixing (Batching) Management	Refer to Section 4.2
Establishment of Construction Lay Down Area	Refer to Section 4.2
Fire Management	Refer to Section 4.2
Traffic Control Management	Refer to Section 4.2
Wet Environments Management	Refer to Section 4.2
Stormwater and Erosion Management	Refer to Section 4.2
Flora and Fauna Management	Refer to Section 4.2
Heritage Resources Management	Refer to Section 4.2
Avifaunal Mitigation Measures	Refer to Section 4.2
Bat Mitigation Measures	Refer to Section 4.2
Visual Management	Refer to Section 4.2
Topsoil Management	Refer to Section 4.2
Agricultural Management	Refer to Section 4.2
OPERATIONAL PHASE	
Hazardous Material (Fuels, Oils and Others) Management	Refer to Section 4.3
Solid waste management	Refer to Section 4.3

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Wet Environments Management	Refer to Section 4.3
Stormwater and Erosion Management	Refer to Section 4.3
Access and Signage	Refer to Section 4.3
Maintenance	Refer to Section 4.3
Flora and Fauna Management	Refer to Section 4.3
Heritage Resource Management	Refer to Section 4.3
Avifaunal Management	Refer to Section 4.3
Bat Management	Refer to Section 4.3
Visual Management	Refer to Section 4.3
Agricultural Management	Refer to Section 4.3
Noise Management	Refer to Section 4.3
Emergency Management	Refer to Section 4.3
Fire Management	Refer to Section 4.3
DECOMMISSIONING PHASE	
Please refer to the Construction Phase Impacts	

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

3.7 ENVIRONMENTAL OPPORTUNITIES

It would be responsible of the applicant to implement the principles below to minimise environmental risks defined above.

Sustainable development is best summarised by an extract from the United Nations World Commission on Environment and Development and reads as follows:

"*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs… As such it requires the promotion of values that encourage consumption standards that are within the bounds of the ecologically possible and to which all could reasonably aspire.*" (Our Common Future, WCED, 1987)[1].

The NEMA Principles state that sustainable development requires the consideration of all relevant factors including the following:

- *That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
- *that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
- *that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*
- *that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;*
- *that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*
- *that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*
- *that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*
- *that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*

In this regard, **sustainable technology alternatives** that are technologically and environmentally superior to “standard” technologies must be promoted at all times which will assist in meeting compliance with the above Principles. All recommendations relating to the above and as contained in this EMPr must therefore be implemented.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4 ENVIRONMENTAL OBJECTIVES, TARGETS AND MEASURES

4.1 PRE-CONSTRUCTION PHASE IMPACTS

4.1.1 Bulk Services Identification

Objectives: To minimise any possible damage to bulk services as a result of pre-construction and construction related activities.

Targets: To comply with any local authority by-laws regarding bulk services and to avoid additional costs and potential project delays due to damage to these services.

Measures:

- If any bulk services are required to be relocated and/or re-routed, then the appropriate permits/approvals must be sought.
- The location of existing bulk services must be determined to prevent accidental damage to these facilities.

4.1.2 Permits

Objectives: To ensure that the necessary permits regarding any activities related to construction activities are in place prior to construction starting.

Targets: To ensure that the construction works can proceed without possible delays and/or legal repercussions during building works as a result of outstanding permits and/or non-compliance with permits.

Measures:

- The client shall issue a list of applicable permitting conditions together with the respective permits/authorisations to the ECO/ESCO prior to the start of construction works.
- Permits are to be acquired from the relevant authorities should protected or Red Data List (RDL) floral species be removed or relocated.

4.1.3 Site Boundaries

Objectives: To ensure that site boundaries are agreed to by the ECO/ESCO, Principal Agent and Contractor prior to the start of the site operations.

Targets: To contain construction activities to the development site/s and prevent unauthorised access (pedestrian or vehicular) and to demarcate potentially sensitive areas and or vegetation.

Measures:

- The Contractor must fence or clearly demarcate the area where construction activities are taking place.
- Access to the site must be restricted, to ensure that members of the public are not able to gain access other than via the designated, controlled access points.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.1.4 Site Layout

Objectives: Determine and define layout on site

Measures:

- Determine the site for the construction camp in collaboration with the Project Manager and ECO/ESCO before the moving onto site, such that it takes into consideration:
    - The need to be more than 50 meters from a water body in a position that will facilitate the prevention of storm water runoff from the site from entering a water body.
    - The risk of public nuisance through, for example, noise generation, visual intrusion, light pollution or disruption to access.
    - Security implications.

- The construction camp must also be of sufficient size to accommodate the needs of all Sub Contractors that may work on the project.
- Submit to the engineer for his/her approval a site layout plan at least seven days before construction can begin.
- Provide the graphical representation with detailed notes of the location, layout and method of establishment of the construction camp, including the following:
    - The extent of the Contractors site camp, and other required areas if not located within the site camp
    - All Contractor's buildings, and/or offices
    - Lay down areas
    - Vehicle and plant storage areas, including wash areas
    - Workshops and drip trays
    - Fuel storage areas (including filling and dispensing from storage tanks)
    - Cement/concrete batching areas (including the methods employed for the mixing of concrete and particularly the containment of runoff water from such areas and the method of transportation of concrete)
    - Other infrastructure required for the running of the project.

4.1.5 "No-Go" Areas

Objectives: To minimise any potential impacts to identified sensitive areas.

Targets: To prevent possible impacts to any identified sensitive areas on site.

Measures:

- Before any work commences on site, sensitive areas must be demarcated by the Contractor's Environmental Officer (EO) in conjunction with the ECO/ESCO.
- All Renosterveld remnants must be treated as strict no-go areas.
    - Provision for penalties for transgressions, in particular for encroachment into natural vegetation must be included in the Construction Environmental Management Plan (CEMP), and in this EMPr.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- A construction site layout plan must be compiled and approved by the ECO/ESCO, clearly stipulating where the ablutions, equipment, machinery, etc. are required to be placed, thereby not allowing any encroachments on the sensitive areas on site.
- Should additional working space be required at a later date, this must be agreed between the Principal Agent, Contractor, and ECO/ESCO.
- Authorisation from the Principal Agent must only be given once the potential impacts have been assessed by the ECO/ESCO.
- Any construction activities taking place prior to the above will constitute a serious violation of this EMPr and are liable to a fine as detailed within this EMPr.
  No vehicles must be allowed to drive through designated sensitive areas. The Contractor's EO to monitor the fences and signage on the No Go areas on a monthly basis and keep records of such monitoring.

4.1.6 Safety considerations

Objectives: Ensure safety of staff on site as well as general public.

Measures:
Provide details identifying what safety precautions will be implemented to ensure the safety of all staff, and the general public at large, on site during the life of the project. This will include protective clothing requirements for all types of construction activities on site, e.g. protection against dust, noise, falling objects, work in trenches, work at heights, etc.

4.1.7 Contractor's SHE Officer

Objectives: Appointment of the Contractors SHE Officer.

Measures:
The name and letter of appointment of the Contractors SHE Officer must be given to the ECO/ESCO and the terms of reference for the work to be undertaken must be detailed including time on site, roles and responsibility, interaction with the Contractor and environmental offices, etc.

- Implementation of safety measures, work procedures and first aid must be implemented on site.
- Workers should be thoroughly trained in using potentially dangerous equipment.
- Contractors must ensure that all equipment is maintained in a safe operating condition.
- A safety officer must be appointed.
- A record of health and safety incidents must be kept on site.
- Any health and safety incidents must be reported to the project manager immediately.
- First aid facilities must be available on site at all times.
- The contractor must ensure that all construction workers are well educated about HIV/ AIDS and the risks surrounding this disease. The location of the local clinic where more information and counselling are offered must be indicated to workers.
- Material stockpiles or stacks, such as, pipes must be stable and well secured to avoid collapse and possible injury to site workers / local residents.
- Personal Protective Equipment (PPE) must be made available to all construction staff and their usage must be compulsory. Hard hats and safety shoes must be worn at all times and other PPE worn were necessary i.e., dust / masks, ear plugs etc.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.1.8 Emergency procedures

Objectives: Compile emergency procedures to be implemented on site.

Measures:
Provide details regarding all relevant emergency procedures that will be implemented for fire control and accidental leaks and spillages of hazardous substances (including fuel and oil). Detail the risk reduction measures to be implemented including firefighting equipment, fire prevention procedures and spill kits.

4.1.9 Waste management control

Objectives: Correct handling of solid and liquid waste on site.

Measures:
Provide details regarding how solid and liquid waste generated on the construction site and site camp will be collected, stored, transported and disposed of. Details of any service provider(s) appointed to manage this task must also be provided.

4.1.10 Stormwater and erosion control

Objectives: Adequate stormwater management on site.

Measures:
Provide details of how stormwater emanating within or adjacent to the construction site may impact on construction activities. Details on how the Contractor will deal with stormwater runoff and potential erosion within the construction footprint must further be provided. Details of any service provider(s) appointed to manage this task must also be provided.

Please refer to Annexure K for the Stormwater Management Plan

4.1.11 Pollution control

Objective: Effective pollution control implemented on site.

Measures:
Expected solid waste types, quantities, methods and frequency of collection and disposal as well as location of disposal sites must be identified and stated in a Method Statement. The Method Statement shall further include methods of minimising, controlling, collecting and disposing of contaminated water, and details of any hazardous substances/materials to be used, together with the transport, storage, handling and disposal procedures for the substances.

4.1.12 Training

Objectives: To ensure that all staff working on site are adequately trained on the requirements of this EMPr and are legally compliant with relevant legislation.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Targets: To ensure that the requirements of this EMPr are understood and implemented by all staff (as and when required) on site.

Measures:

- The ECO/ESCO will provide induction training to all on-site personnel before being allowed to work on site. It is the duty of the Contractor's EO to provide weekly toolbox talks to their teams on site and keep records of these in the form of attendance registers.
- An interpreter should be provided as required.

4.1.13 Construction phase site layout

Objectives: To designate areas on site for various types of construction related activities.

Targets: To ensure an efficient and orderly layout that promotes safe access.

Measures:

- The location of the Contractor's camp, toilet facilities and storage areas must be agreed to by the ECO/ESCO, Principal Agent and Contractor prior to the commencement of work at the site.
- A sketch diagram of the above is required by the ECO/ESCO.
- These areas must all be kept tidy, litter-free, sanitary and in good condition throughout the project.
- Any construction activities taking place prior to the above will constitute a serious violation of this EMPr and are liable to a fine as detailed within this EMPr.
- All development footprint areas must remain as small as possible and must not encroach onto no-go areas. It must be ensured that these areas are off-limits to construction vehicles and personnel unless these personnel are involved in rehabilitation activities. Very strict control of edge effects must be practiced.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.1.14 Working Hours

Objectives: To designate working hours for construction related activities.

Targets: To ensure that the hours of operation shall be restricted to those stipulated by the local authority.

Measures:

- The Contractor shall at all times ensure that working hours are restricted to those stipulated by the local authority.
- Modifications to the above may only take place through the local authority and the ECO/ESCO must be notified in writing.

4.1.15 Heritage Management

Objectives: To aid in the conservation of heritage (including archaeological) resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of such resources.

Measures

- A no-go development buffer of 500m for wind turbine infrastructure must be implemented around the farm werfs within the development area.
- To maintain the character of the landscape, the remaining areas of endemic and endangered natural vegetation must be conserved. Development of the wind turbines should not be allowed within these areas.
- Should any previously undocumented heritage resources be identified during the course of the construction, operation or decommissioning of the project, work must cease in the area of the find and HWC must be contacted regarding a way forward.
- Should any substantial fossil remains (e.g. vertebrate bones and teeth, shells, peat horizons or lenses) be encountered during development, such as within fresh excavations, these must be safeguarded, if possible in situ. These fossil finds must then be reported by the responsible ECO/ESCO to Heritage Western Cape for recording, sampling and any appropriate further mitigation by a professional palaeontologist. Refer to the Chance Fossil Finds Procedure (Annexure K).
- If human remains are encountered during construction, they must left in place and nothing removed, the area must be cordoned off and the project archaeologist informed, HWC and the South African Police Services must be notified and, if exhumation is required, a permit must first be obtained from HWC.
- All the access roads to each wind turbine site, the temporary site camp and the permanent on on-site substation must be aligned along existing roads as far as possible and in a pattern that fits the field configuration. The reason is to reduce rapid surface water runoff which will likely cause erosion but importantly to conform to the visual pattern of the fields.
- All access roads will be planned and no ad hoc or temporary short cuts will be permitted to be developed without approval of the Engineer's Representative (ER).

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.1.16 Wet Environments Management

Objectives: To aid in the conservation of wet environment resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the statutory requirements relating to management of natural freshwater resources.

Measures:

- Encroachment into freshwater ecosystems and their recommended buffer areas must be avoided as far as possible.
- Alter the layout plan to minimise encroachment into wetlands and river corridors as far as possible (following the recommended changes outlined in this freshwater ecology impact assessment report) and, where encroachment into wetlands of moderate conservation importance is unavoidable, rehabilitate degraded portions of these wetlands and/or degraded portions of nearby wetlands of high and moderate conservation importance that are of a similar type.
- The crossing or infilling of freshwater ecosystems of high conservation importance (such as FEPA wetlands and CBA wetlands) by WEF-related structures and infrastructure would potentially result in negative impacts of high significance and must thus be specifically avoided at all costs.
- No water must be taken from a water resource for any purpose without authorisation in terms of the National Water Act, 1998 (Act 36 of 1998) (NWA).
- No waste or water containing waste may be disposed without authorisation in terms of the NWA and National Environmental Management: Waste Act, 2008 (Act 59 of 2008).
- All relevant sections and regulations of the NWA regarding water use must be adhered to.
- No pollution of surface water or groundwater resources may occur.
- Effective measures must be designed for the management of stormwater runoff from new roads and other hardened surfaces (including the bases of the wind turbines), so as to minimise the hydrological changes to freshwater ecosystems in the study area as far as possible.
- Stormwater management must be addressed both in terms of flooding, erosion and pollution potential.
- No stormwater runoff from any premises containing waste, or water containing waste emanating from industrial activities and premises may be discharged into a water resource. Polluted stormwater must be contained.
- Where the crossing of rivers by infrastructure such as roads and underground services is necessary, this must be located at existing road crossings as far as possible.
- Land that has already been substantially disturbed and/or transformed from its natural state (e.g. through extensive, long-term farming activities) must be targeted for the establishment of structures and infrastructure associated with the proposed WEF, as far as possible, because this would lower the risk of impacting on freshwater ecosystems that are in a good present ecological condition.
- Underground cabling must preferably be directionally drilled under freshwater ecosystems and not trenched.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Overhead cabling must, as much as practically feasible, span the width of the applicable freshwater ecosystem to avoid placement of monopoles directly within the freshwater ecosystem. A minimum of a 10m buffer from the wetland boundary should also be maintained from the monopoles.
- Construction areas within 50 m of any freshwater ecosystem must have clearly defined, approved work areas / footprints, which must be clearly demarcated on site, to limit the risk of potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5 m on either side of the crossing may be implemented and the reaches of the freshwater ecosystem up- and downstream of the construction ROW must be designated 'no-go' areas.
- As far as possible, the use of hard engineering techniques such as gabions, reno mattresses and so forth to manage erosion and sedimentation must be avoided. Where feasible, employment of 'soft' techniques such as biodegradable hessian sheeting with coir logs, brush cutting stabilised with additional cobbles and soil, or step-cutting and revegetation with indigenous flora is preferred for bank stabilisation. Further detail in this regard is provided in the freshwater rehabilitation and management plan (FEN, 2023).
- Further to the above, Acacia spp. were noted to occur within several drainage systems within the Western Cape WEF project boundary. Removal of these trees is recommended albeit not within the duty of care of the proponent; however, felled tree trunks and larger branches without and roots (to avoid perpetuating growth of these species) could be utilised in slope and bank stabilisation.
- Vegetation cleared from construction areas is to be limited to the approved development footprint. Indigenous vegetation which is viable for replanting is to be retained for utilisation in disturbed areas post-construction. Alien vegetation must be removed to a licensed waste facility and may not be stockpiled, mulched, composted or burnt on site, with the exception of trunks and sturdy branches which are to be used for erosion control as above.
- Accumulated sediment and debris within freshwater ecosystem crossings is to be removed manually or by the lightest equipment possible to minimise disturbances to soil and hydraulic patterns within the freshwater ecosystems.
- Management of potential sources of contamination within the batching areas is extremely important, given that the sites are upgradient of freshwater ecosystems. A clean and dirty water separation trench and berm must be developed between these sites and the downgradient watercourses, which must be restored to pre-development topography and rehabilitated during decommissioning of the batching sites.
- Concrete and cement-related mortars can be toxic to aquatic life. Proper handling and disposal should minimise or eliminate discharges into the freshwater ecosystems. High alkalinity associated with cement can dramatically affect and contaminate both soil and ground water. The following measures are specific to concrete works within the batching sites and must be adhered to: Fresh concrete and cement mortar must not be mixed near the freshwater ecosystems. Mixing of cement may be done within the batching site, on an impervious surface only, and must be within a lined, bound or bunded portable mixer. Consideration must be given to the use of ready mix concrete if possible.
- No mixed concrete maybe deposited directly onto the ground within the freshwater ecosystems, outside of the designated area (e.g. at road crossings, no closer than 5 m to the

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

freshwater ecosystem). All concrete for any works within the freshwater ecosystems must be brought in via a cement mixing truck which must remain 5 m from the crossing, and cement must be piped down to the construction site. Any areas that require manual application of cement require that mixed cement be placed on a batter board or other suitable platform/mixing tray until it is deposited.

- A washout area must be designated outside of the freshwater ecosystems, and wash water must be treated on-site or discharged to a suitable sanitation system.
- At no point may batter boards/mixing trays or cement trucks be rinsed off on site and run-off water be allowed into the freshwater ecosystems.
- Cement bags (if any) must be disposed of in the demarcated hazardous waste receptacles and the used bags must be disposed of through the hazardous substance waste stream.
- Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.
- Water is planned to be abstracted from existing boreholes within the Western Cape WEF project boundary as far as possible but further groundwater development may be needed to supply sufficient water for the project. Abstraction must be carefully managed according to the recommendations made by the geohydrologist, to ensure that groundwater levels are maintained and the sustainable yield of the aquifer is not exceeded and that dewatering of freshwater ecosystems does not occur.
- As far as possible, underground cabling must be installed across freshwater ecosystems by means of directional drilling. If trenching cannot be avoided, the following measures must be taken: Trenching must, as far as practically possible, be undertaken during the dry, summer low-flow period, to contain the impacts from the construction phase.
- The construction footprint must be limited to the width of the trench and a construction ROW (to allow for the temporary stockpiling of soil and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation.
- The stockpiles must remain as small as possible and may not exceed 2 m in height to prevent excessive dust generation that could smother wetland vegetation and impact the downstream reach of the freshwater ecosystem.
- The duration of open trenching through any freshwater ecosystem must be kept as short as possible.
- Trenching will potentially result in bank destabilisation, and cause bank incision and sedimentation of the freshwater ecosystem therefore, sediment control devices (such as geotextile sediment traps - Figure 4.1) must be installed prior to trenching activities downgradient of the construction works to limit any sediment from entering the downstream reach. Sediment traps should allow for surface runoff should a rainfall event occur.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za



Figure 4.1: Examples of sediment/silt traps to be used during the construction phase, to limit additional sediment from entering downstream reach of the floodplain wetland; during (Left) instream activities; (Right) activities directly adjacent to the freshwater ecosystem.

- During trenching through the freshwater ecosystem, soil may be stockpiled on the upgradient edges of the excavation in order to limit potential sedimentation of the freshwater ecosystem (Figure 4). In cases where the space does not allow for the stockpiling of excavated material, then protective sheeting must be used to stockpile soil on the downgradient edges (Figure 4.2). Mixture of the lower and upper layers of the excavated soil should be kept to a minimum



Figure 4.2: (Left) Excavation for pipe trenching with stockpiles alongside; (Right) Backfilling of the trench with the construction vehicle remaining on one side of the disturbance footprint. Note the use of bog mats to limit impact on wetland soils.

- During trenching activities, seepage water may be present within the trench - invariably this will be filled with silt and have high suspended solid loads. Therefore, any seepage must not directly into the downstream reach of the freshwater ecosystem but must rather dewatered and pumped into a small stilling basin first before being released to the receiving environment.
- The stockpiled soil must be used to backfill the trench, immediately after constructing the pipeline.
- Material used as bedding material (at the bottom of the excavated trench) should be stockpiled outside of the delineated boundary of the freshwater ecosystem. Once the trench has been excavated, the bedding material should directly be placed within the trench rather than stockpiling it alongside the trench.
- The bedding layer (such as clean gravel) must be spread evenly and compacted uniformly to the required density using a hand tamper (one-man operator) in order to minimise the use of large machinery within the defined extent of any watercourses. Depending on the substrate

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

of the active channel, the same channel bed material must be returned - i.e., if cobbles, cobbles must be replaced.

- Once the cabling has been installed, the stockpiled soil must be used as backfill for the trench, while keeping the disturbance footprint to a minimum – no indiscriminate movement of construction machinery by personnel (Figure 4.2 above). The trench must be filled with soil in the same sequence as it was removed. It is imperative that topsoil be reinstated to ensure suitable rehabilitation of vegetation.
- The trench must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion and the upper 300 mm must be ripped for reestablishment of vegetation. However, consideration must be given to accounting for subsidence of the soil level over time by allowing for a slightly higher soil level in the trench (depending on the soil type). Therefore, monitoring post construction is required. Conversely, areas compacted as a result of construction activities (within the 5 m construction ROW must be loosened to natural soil compaction levels.
- Proliferation of alien vegetation must be monitored and controlled.
- Unused excavated soil/sediment must be utilised as part of the open space area or be removed from site to a registered landfill.

Please refer to Annexure I for the Aquatic Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.1.17 Bat Management

Objectives: To minimise or prevent, where possible, the disturbance, displacement or destruction of bats and bat roost areas.

Targets: To ensure compliance with the statutory requirements relating to management of bat resources.

Measures:

- The turbine layout must adhere to the bat sensitivity buffers. Turbines must be sited outside of buffer areas such that blade tips do not encroach into buffer zones.
- The height of the lower blade swept height must be maximised, and should not be lower than 50m if possible, to minimise collisions with low flying species
- Preconstruction monitoring in combination with bat mortality monitoring during the operational phase is recommended for this site. This will improve and determine the effectiveness of mitigations applied.
- The final selection of the deterrent measures and curtailment/shut down on demand system to be implemented (Aligned for Birds and Bats) must be determined, as informed by the pre-construction monitoring and input from an Independent Bat Specialist, and submitted to the Competent Authority for approval before construction can commence.
- Implementation of real-time minimisation mitigation for bats through the initial use of four (04) Smart Systems (or similar) to automate Shut-Down on Demand and prevent collision by bat species when their level of activity is high
- Adaptive mitigation based on bat and avifauna fatality monitoring to manage the requirements for number of Bioseco and Smart System units, their locations and their thresholds (Smart System only) to allow for fatality minimisation to within acceptable limits

4.1.18 Avifauna Management

Objectives: To minimise or prevent the disturbance, displacement and direct mortality of avifaunal Species of Conservation Concern (see Annexure A for a definition).

Targets: To ensure compliance with the statutory and EMPr requirements relating to management of avifaunal resources.

Measures:

- The Developers or the Client shall appoint an Avifaunal Specialist where required or where obliged to do so in terms of the EMPr.
- Disturbance and Displacement of avifaunal Species of Conservation Concern
    - The footprint within Avifaunal Sensitive 'No-Go' areas should be avoided;
    - Laydown and other temporary infrastructure to be placed within very low sensitivity areas, preferably previously transformed areas, wherever possible;
    - Appropriate run-off and erosion control measures are to be implemented where required;
    - Existing roads and farm tracks should be used where possible;
    - The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths;

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.
- If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined), pre-construction activities within 500m of the breeding site must cease, and an Avifaunal Specialist shall be appointed by the Developer for further assessment of the situation and instruction on how to proceed.
    - Should a new nest be confirmed, within one day (24 hours) following its discovery the Developer and/or Avifaunal Specialist is required to inform BLSA and ORCT.
- The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.
- Maximum use of existing access road and servitudes;
- Existing and novel access roads are to be suitably upgraded or constructed to prevent damage and erosion resulting from increased vehicular traffic and construction vehicles
- The appointed Environmental Officer (EO) and Environmental Site Compliance Officer (ESCO) must be trained to identify the potential Red Data species as well as the signs that indicate possible breeding by these species. Training is to be conducted prior to construction.

4.1.19 Agriculture Management

- All laydown and construction areas, to be fully rehabilitated after construction.
- No permanent hard standing area for cranes, post construction.
- Where existing farm roads does not provide access to turbines, the access road will be rehabilitated to a farm type track after construction.
- All cable trenches will follow access roads where possible and will be sufficiently deep to allow for normal farming activities at the surface.
- Turbine foundations to be well below the surface, effectively limiting the above ground footprint of the turbine base to less than 30m².
- Ensure that as much as possible of the planned infrastructure is confined to transformed land, or non-arable areas.
- Ensure that use is made of existing roads, servitudes, etc where at all possible
- Ecological corridors occur predominantly along the rivers, drainage lines and seep areas, so design must be such that it does not impede these corridors unnecessarily.
- Every care must be taken before, during and after the construction and future maintenance of the renewable energy structure, supporting infrastructure or access routes to protect the vegetation and veld condition against deterioration and destruction.
- It is the responsibility of the owner of the renewable energy project to ensure that suitable soil conservation works is established on the site to limit or restrict the loss of soil.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- No renewable energy structure, supporting infrastructure or access routes shall in any manner divert any run-off water from a water course to any other water course or obstruct the natural flow pattern of runoff water, except with the permission from DAFF.
- All access routes, existing or newly constructed and utilised during the construction and/or maintenance of the renewable energy structures must be restore to its original state after completion of the establishment of the structures.
- Every care must be taken not to damage or degrade the status of the natural resources base of the farm during the construction phase of the mentioned or to impact negatively on the farming or production practices on the farm.
- All service routes that will be used to gain access to the renewable energy structures for maintenance purposes have to be covered in gravel, tarred or compressed in order to limit the possibility of degradation and erosion.
- The installation of the underground power cables must not negatively impact on the resource base of the site. During the installation no soil conservation structure is to be disturbed, the soil texture must be restored, the work area should not be wider than 5 m, should not be directed through existing or future cultivated land nor impact negatively on existing farming infrastructure or any farming activity.
- The lease agreement must be transferred to the new land owner, should the farmer decide to sell the property during the time period of the current lease agreement. DAFF needs to be informed of the transfer of the lease agreement upon which a new approval number will be issued. Supporting documentation must be provided that the new land owner concurs with the specifications of the existing lease agreement.

4.1.20 Turbine Micro-siting

- After an authorisation is issued, a team of relevant specialists must perform a detailed "walk down" assessment of the site for **micro-siting** of turbines. This assessment must investigate, in detail, the recommended location of wind turbines and associated infrastructure, as well as all elements of the construction site.
- Plan the layout of the wind turbines and the elements of construction infrastructure placed on site based on the findings of the micro-siting assessment to ensure that environmental impacts are minimised.
- Micro-siting of footprints should ensure all turbines remain wholey outside of no-go buffer zones.

4.1.21 Transportation of wind turbine infrastructure and access routes

Details, including a drawing, showing where and how the access points and routes will be located and managed must be provided in a Method Statement. The time of day and route from the relevant port of arrival of the components to the development site must be clearly indicated and adhered to by the transport service provider, as far as is reasonably practicable.

4.1.22 Noise Management

Objectives: Ensure compliance with Western Cape Noise Control Regulations, 2013.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Targets: Ensure noise from each WTG is below the recommended noise level of 45.0 dBA.

Measures:

- When the final selection is done on the type of wind turbine to be used this must be taken into consideration and an assessment be made of the technical specifications of the type of wind turbine, to ensure that the recommended noise level of 45.0dBA and noise spectrum of the turbines on an individual and cumulative basis will be in line with the Western Cape Noise Control Regulations, 2013.
- This must be verified by an approved environmental noise specialist before the installation of the turbines

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2 CONSTRUCTION PHASE IMPACTS

4.2.1 Site Establishment

Objective: Identify, establish and produce a Site Layout Plan

Site Identification

- Produce a Site Layout Plan illustrating the location and layout of the proposed site camp in each cluster and the working areas. This plan must be approved by the PM.
- Ensure that the site camp is fenced and provided with a lockable access gate to prevent vandalism, theft and unauthorised entry by the public, where necessary.
- Obtain approval from the landowner prior to establishing the site camp in the event that the site camp is to be situated on private land.
- Produce a photographic record of the area earmarked for the site camp prior to site establishment. This will serve as the benchmark against which rehabilitation will be measured and shall be kept in the site environmental file.
- Ensure that the site camp is reinstated to its original agricultural condition once the project has been completed.
- Do not use the land for the site camp for any purpose other than for the proper carrying out of the works under the contract.

Site Demarcation

- Prior to construction commencing, the ECO/ESCO, Contractor, and/or PM shall inspect the site and identify any sensitive environments.
- All Renosterveld remnants must be treated as strict no-go areas.
- Where necessary, demarcate the construction footprint areas using materials as specified by the PM. These may include fencing, rope, hazard tape, wire mesh, or other approved materials or means.
- The Contractor will be required to maintain all demarcation fencing and other demarcating materials for the duration of construction activities or as otherwise instructed by the PM.

Vegetation Clearance

- Vegetation clearance shall take place strictly in accordance with the Site Layout Plan developed by the Contractor.
- Collection or wilful damage to any plants outside of the areas demarcated for clearing is not allowed.
- Only trees and shrubs directly affected by the works may be felled or cleared, subsequent to approval from the ECO/ESCO or PM in writing.

Protection of natural features

- The Contractor shall not deface, paint, damage or mark any natural features situated in or around the Site for survey or other purposes unless agreed beforehand with the ECO/ESCO. Any features affected by the Contractor in contravention of this clause shall be restored/rehabilitated to the satisfaction of the ECO/ESCO.
- The Contractor shall not permit his employees to make use of any natural water sources (e.g. springs, streams, and open water bodies) for the purposes of swimming, personal washing, drinking and the washing of machinery or clothes.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Protection of archaeological and paleontological sites

- Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the national Heritage Resources Act 25 of 1999 (NHRA).
- If at any stage during construction any semblance of a fossil were to be observed, it must be reported to the authorities so that it can be removed safely.
- Should any archaeological or cultural heritage resources as defined and protected by the NHRA and not reported on in this report be identified during the course of construction, the developer should immediately cease operation in the vicinity of the find and report the site to Heritage Western Cape or SAHRA.

Topsoil

- Topsoil can only be stripped from the following areas in or adjacent to the construction site or site camp:
  - Areas which is to be used for temporary storage of soil and/or materials.
  - Areas which could be polluted by any aspect of the construction activity.
  - Areas within the footprint of the proposed infrastructure to be constructed.
- Undertake the stripping of topsoil in a manner that minimises erosion by wind or runoff.
- Topsoil will be stripped to a depth not exceeding 300 mm from the original ground level, unless greater depth is required during the execution of the construction phase of the project.
- Clear areas from which the topsoil is to be removed of any foreign material which may come to form part of the topsoil during removal including bricks, rubble, any waste material, litter, excess vegetation and any other material which could reduce the quality of the topsoil.
- Ensure that subsoil and topsoil are not mixed during stripping, excavation, reinstatement and rehabilitation.
- Subsoil can be used – if suitable – for road construction.
- Soils must be exposed for the minimum time possible once cleared.
- Topsoil will be temporarily stockpiled, separately from (clay) subsoil and rocky materials.
- Topsoil will be stockpiled in areas designated by the ECO/ESCO.
- Topsoil (300 mm) should be stored at an appropriate site on each farm for future rehabilitation after decommissioning.
- Soil must not be stockpiled on drainage lines or near watercourses without proper risk assessment conducted and prior consent from the ECO/ESCO.
- Stockpiles will either be vegetated with indigenous vegetation, covered by a suitable fabric or maintained in some other suitable way approved by the PM and ECO/ESCO to prevent erosion and invasion of weeds.
- Stockpiles must be monitored for weed infestation and cleared of weeds when necessary.
- Stockpiled topsoil will not be compacted and shall not exceed 2m in height.

4.2.2 Site Maintenance

Objective: Adequate maintenance of site.

Measures:

Workshop

- If an on-site workshop is to be established for the duration of construction, obtain the approval of the PM prior to commencing activities and confine maintenance activities to the identified workshop area.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Ensure that there is no contamination of the soil or surface water from the on-site workshop.
- Maintain a spill control kit and staff appropriately trained to utilise it.

Equipment Maintenance and Storage

- Keep all vehicles and equipment in good working order in the site camp or an area approved by the PM.
- Inspect all vehicles and plant daily for leaks and spills. Log and sign off maintenance checks a in a site maintenance file after each inspection.
- Repair or remove leaking equipment from the site immediately, where practicable.
- Stationary plant must be supplied with drip trays to prevent soil contamination after hours and when not in use.

Cooking Facilities

- Designate an all-weather cooking and eating area, subject to the approval of the PM.
- Any cooking on site shall be done on either well-maintained gas cookers or by contained fires (e.g. in a drum or braai place), located away from flammable vegetation or construction materials in designated areas. No fires for heating purposes shall be allowed on site.
- Keep the cooking and eating areas tidy and clean at all times to prevent the luring of vermin, domesticated or wild animals.
- Provide sufficient bins with vermin and wind proof lids for waste disposal, within a 5m radius of the cooking/eating area at all times.

Water for human consumption

Water for human consumption must be available at the site offices and at other convenient locations on site at all times.

4.2.3 Monitoring and Record Keeping

Objective: Maintain an environmental site file containing necessary documentation

Measures Monitoring and record keeping on site

- Inspect the site on a daily basis to ensure that the environmental specifications of the EMP are adhered to.
- Provide the PM with a written report, at least fortnightly, detailing compliance with the EMP as well as environmental performance.
- Maintain a record of incidents (spills, impacts, complaints, legal transgressions, etc.) as well as corrective and preventive actions taken, for submission to the PM at the scheduled project meetings.
- Maintain an environmental site file containing at a minimum the following documents:
  - Final Environmental Impact Assessment Report compiled for the Western Cape WEF;
  - Latest version of EMPr;
  - Final design documents and diagrams issued to and by the Contractor;
  - All communications detailing changes of design/scope that may have environmental implications;
  - Site monitoring reports;
  - Complaints register;
  - Training manual;
  - Training attendance registers;
  - Incident and accident reports;
  - Emergency preparedness and response plans;
  - Disciplinary procedures;

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Monthly site construction meeting minutes;
- All relevant permits;
- Letters or legal documents authorising identified site staff to act in a specified authoritative capacity relating to the protection and preservation of the environment, and on behalf of the Contractor;
- Environmental Authorisation and Amendments on the EIA; and
- All method statements from the Contractor for all phases of the project.

4.2.4 Community relations (Social disruption)

Objective: Ensure good relations with surrounding community

Measures:

- Erect and maintain information boards in the positions, quantities, designs and dimensions required by municipal specifications. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the ECO/ESCO.
- Keep a Complaints Register on site, containing contact details of complainants, the nature of the complaint, details on the complaint itself, as well as the date and time that the complaint was made and resolved.
- The Contractor, or if required the ECO/ESCO, shall be responsible for responding to queries and/or complaints and may request assistance from the Contractor's Management Staff.
- All abutting neighbours (or as required) must be notified of the proposed construction phase activities at least two weeks before they commence.
- The Contractor must record and repair any damage that the construction works may cause to neighbouring properties, to the satisfaction of the ECO/ESCO.
- The ECO/ESCO must be notified in writing of any incidents relating to the above.
- Staff shall in no way be a nuisance to residents or clients seeking the services of the established businesses in the area. Any complaints received by the PM will be investigated, addressed and, if deemed necessary, the relevant persons will be suspended from the project.
- Give at least seven days' notice to the residents in the vicinity of the construction activities of his intention to begin construction activities in their area.
- The PM may request a representative of the Contractor to be available to discuss issues raised by residents and make information available to them on construction activities.

4.2.5 Working times

Objective: Establish clear daily working times

Measures:

- Daily timeframes for construction works is to be agreed to by the Contractor, ECO/ESCO and landowners.
- For any deviation from the ordinary working hours the written approval of the PM must be obtained before such works commences.

4.2.6 Work Stoppage and Temporary Site Closure

Objective: Determine when work stoppage and site closure is required

Measures

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

The Project Engineer, in consultation with the ECO/ESCO, shall have the right to order work to be stopped in the event of significant infringements of the Project Environmental Specifications until the situation is rectified in compliance with the specifications. In this event, the Contractor shall not be entitled to claim for delays or incurred expenses.

4.2.7 Existing Services and Infrastructure

Objective: Note position of existing services and infrastructure on development site

Measures:

- Take cognisance of the position of existing services and infrastructure (e.g. roads, pipelines, power lines and telephone services) that may get damaged due to construction activities.
- Ensure that existing services are not damaged or disrupted unless required by the contract and with the permission of the PM.
- The repair and reinstatement of any infrastructure that is damaged or services that are interrupted during construction will be done at the expense of Contractor's and shall receive top priority over all other activities.
- Adhere to the time limit for the repairs as stipulated in consultation with the PM.

4.2.8 Prevention of damage to surrounding infrastructure

- Be extra vigilant, during the construction activities, to prevent damage from occurring to any buildings, road furniture and motor vehicles located in the vicinity of the construction site.
- The Contractor shall be responsible, at his own cost, for the repair and reinstatement of any damages to existing structures resulting from the construction works.
- Investigate any complaints received from the public regarding any of the listings above. If substantiated, the above listings may result in a fine, or suspension or dismissal of the guilty party.

4.2.9 Socio-economic Management

Objective: To maximise impacts on employment in the area during the construction phase.

Targets: To ensure that employment for local people is ensured during the construction phase.

Measures:

- *Creation of employment and business opportunities* - Guidelines should be prepared for the implementation of a Procurement Strategy that includes the following:
    - Initiate the procurement strategy during the first phase of the project after which the implementation of the strategy becomes the responsibility of the contractor(s) collectively under the guidance of the developer.
    - Develop a database of local contractors who are competitive and possess the required skills and capacity to obtain contracts.
    - Local contractors should be invited to tender for work in the context of the terms and conditions that should be included in Request for Proposal documentation.
- *Impact associated with presence of construction workers* - To avoid and or minimise the potential impact of construction workers on the local community. This can be achieved by

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

maximising the number of locals employed during the construction phase and minimising the number of workers housed on the site.

- Local people skilled in earth moving and building activities can be employed during the construction phase, whilst cleaning, security and maintenance services during operations could employ low- or semi-skilled workers. In the event of a shortage of labour from the Swellendam area, the developer should undertake to employ contractors from other areas of the Overberg. The Developer should consider this as one of the pre-qualification requirements for tendering.
- A Communication Strategy should be prepared to inform locals about opportunities together with the terms and conditions applicable to procurement and employment.

- *Safety, poaching, stock theft and damage to farm infrastructure*- The housing of construction workers on the site must be limited to security personnel, as far as possible.
  - The site will be fenced and patrolled 24/7.
  - Increase in local crime On-site security measures, such as perimeter fencing, controlled access and security guards and patrols will minimise the risk.

- *Increase risk of fires* - Ensure that open fires on the site for cooking or heating are not allowed except in designated areas. Provide adequate firefighting equipment onsite. Provide fire-fighting training to selected construction staff. Approval from site management e.g. construction manager, ECO/ESCO, safety officer must be gained before cooking in designated areas and the fire must be controlled and monitored by the party responsible for the activity (namely the Contractor Safety Officer/EO).

- *Impact of dust and noise due to heavy vehicles and damage to roads* – Dust and noise emissions during the construction period should be minimised by employing a Construction Environmental Management Plan (CEMP).

  - Site construction roads and excavated materials should be sprayed with an eco-friendly dust suppression liquid during dry periods to mitigate the formation of dry dust particles.
  - If water is used for dust suppression purposes, non-potable water as must be used.
  - Ensuring that vehicles used to transport sand and building materials are fitted with covers.
  - Ensure that all vehicles are road-worthy, drivers are qualified and are made aware of the potential noise, dust and safety issues.
  - Ensure that drivers adhere to speed limits. Vehicles should be fitted with recorders to record when vehicles exceed the speed limit or installation of cameras to limit speed on site.
  - Ensure that damage to roads is repaired before completion of construction phase.

- *Impact on farming activities* - Minimise the footprint of the wind energy facility and the associated infrastructure. Rehabilitate disturbed areas on sections already constructed or on completion of the construction phase. Details of the rehabilitation programme are to be contained in the EMP.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.10 Appropriate Machinery Management

Objectives: To minimise possible nuisance effects and environmental damage through the use, storage and/or handling of machinery during the construction works.

Targets: To ensure that impacts and damage to the environment are minimised via the responsible use of appropriate machinery on site.

Measures:

- The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions (no-go areas) required to comply with the specifications. The Contractor shall ensure that these delivery drivers are supervised during off loading and made well aware of the specification of the site.
- The Contractor shall at all times carefully consider what machinery is appropriate to the task in the context of this EMPr while minimising the extent of environmental impact.
- Materials shall be appropriately secured and/or covered to ensure safe transportation between destinations.
- Loads containing but not limited to, sand, stone, fine vegetation, chips, paper cement sand and waste, will be appropriately covered (i.e. with tarpaulin) to ensure that such materials do not spill during the transportation of such materials. The Contractor in charge will be responsible for any required “clean-ups” resulting from failure to by his/her employees or suppliers to properly cover the required materials.
- Construction machinery must be located away from sensitive areas when parked for extended periods of time.
- A dedicated parking and equipment storage area must be defined, and metal drip trays placed beneath any equipment to contain any spilled liquids. Contractor must maintain a register to monitor the condition of the drip trays on site and make it available on request to the ECO/ESCO.
- These materials must be replaced regularly to prevent over-saturation and potential spillage of free phase product. This material must be disposed of as hazardous waste and be collected by an approved/licensed Contractor/delivered to a licensed suitable waste site.
- Chain of custody documentation must be provided as proof of final end recipient.
- All spills are to be recorded in the Environmental Register, including any clean-up actions taken to remediate the spillage. Such actions are to be agreed with the ECO/ESCO prior to taking place.
- In the event of a major spillage on site, the ECO/ESCO should contact the municipality to determine whether the spillage constitutes a NEMA Section 30 incident
- For any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.11 Waste Management

Objectives: To minimise possible environmental damage through inappropriate waste management on site or related to the site.

Targets: To ensure that the handling of waste is in accordance with the statutory requirements of the local authority by laws and the NEM: Waste Act (2008).

Measures:

1) Liquid Waste:
   - Storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment.
   - The Contractor shall keep a manufacturer specific Material Safety Data Sheet (MSDS) on-site for all potentially hazardous materials used.
   - Suitably trained personnel shall be available on the site during working hours so that in the event of human exposure to any hazardous materials that the correct first aid actions are taken. This training should also include environmental spill containment procedures. Training must be provided by an accredited institution (i.e. for first aid, firefighting, handling of hazardous substances and storage).
   - Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity.
   - Contractor will maintain a register and have waste manifests and safe disposal certificates for all hazardous waste that has been disposed of.
   - Safe disposal certificates for general, hazardous and recycled waste should be retained for a minimum period of five years in accordance with the provisions of the National Waste Information Regulations promulgated in Government Notice ("GN") No. R. 625 of 13 August 2012.
   - All hazardous waste must be transported and disposed of at a registered landfill site. The Contractor must keep a valid permit of the landfill site on their records. Moreover, the Contractor must keep an agreement letter with the waste contractor on their files.
   - No discharge of pollutants such as cement, concrete, chemicals, fuels or oils will be allowed into any water resource
   - The areas around fuel tanks will be bunded.
   - Only above ground temporary storage tanks will be allowed on site.
   - Contaminated or potentially contaminated water will be kept separated from unpolluted storm water.

2) Solid Waste:
   - Prepare and submit a Method Statement on waste control and management at the site.
   - No burning, burying or dumping of any waste materials, vegetation, litter or refuse shall be permitted.
   - Remove, or appoint a suitable service provide to remove solid waste from site on a weekly or fortnightly basis.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Solid waste must be recycled where possible and the remainder spoiled at an approved municipal land fill site or waste disposal service provider.
- Disposal certificates for each waste removal event shall be issued and kept in the site environmental file for auditing purposes.
- Safe disposal certificates for general, hazardous and recycled waste should be retained for a minimum period of five years in accordance with the provisions of the National Waste Information Regulations promulgated in Government Notice ("GN") No. R. 625 of 13 August 2012.
- Waste must be categorised by the Contractor and disposed of in a suitable manner into separate waste streams (this includes general and hazardous waste).
- The Contractor must provide an adequate number of waste receptacles for general waste at points around the construction site, and a single collection point for hazardous waste.
- The frequency of collections/emptying of waste receptacles will be at least once per week or at such a frequency that waste receptacles do not overflow.
- Particular care shall be taken with the disposal of materials that could be wind-borne or waterborne to ensure that the release of these materials is minimised (the latter is a requirement for hazardous waste). Alternatively, bins with weighted lids must be used.
- The use of netting covers or similar sealed containers must be implemented as and when required by the ECO/ESCO.
- Areas demarcated for specific activities including food consumption must have suitable waste receptacles provided.
- General waste to be further categorized to ensure recycling is implemented (eg. glass, paper, plastic, metal etc.)
- No dumping within the surrounding area (within and offsite) is to be permitted.
- No burning of solid waste is allowed.
- All material used by the Contractor during the construction phase shall be managed in such a way that it does not cause pollution, or that minimises pollution.
- Do not allow burning of cleared vegetation on site. Chipping or composting of vegetation shall be allowed where viable.

- Should any general and hazardous waste be generated during the construction phase, these must be stored and handled separately. Should these waste streams be mixed, the entire volume should be viewed as hazardous and handled accordingly

3) <u>Hazardous Waste:</u>

- All hazardous waste must be stored in a demarcated area and disposed of using registered and licensed waste disposal contractors. All documents relating to volumes and type of waste must be kept on site for inspection (eg. waste registers and manifests).
- In the event of a spillage, the Contractor should have suitably trained personnel who can correctly clean up any spillage in an efficient and environmentally sound manner.
- Storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment.
- The Contractor shall keep manufacturer specific MSDS on-site for all potentially hazardous materials used.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Suitably trained personnel shall be available on the site during working hours so that in the event of human exposure to any hazardous materials, the correct first aid actions are taken. This training should also include environmental spill containment procedures.
- Any spills occurring on site must be cleaned up, removed and disposed of safely as soon after detection as possible to minimize pollution risk.
- Chain of Custody documentation must be provided for any hazardous substances disposed of as proof of end recipient.
- All significant spills of harmful product/waste into the soil or water resources that might lead to environmental degradation must be reported to all relevant authorities. This requirement is in terms of Section 30 (10) of the National Environmental Management Act, No. 107 of 1998 (NEMA).
- For any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

4) Ablution Facilities

- Chemical toilet facilities are to be supplied and managed by the Contractor. These are to be located in specific areas agreed to by the ECO/ESCO prior to placement and to be used by all personnel.
- The number of chemical toilets required on site (i.e. the ratio of persons working on site to number of toilets) must be determined by the Contractor in conjunction with the Competent Local Authority prior to works starting on site.
- These toilets are to be secured (e.g. held down with four separate cables, r guy ropes or staked down) to ensure that they are not knocked over or blown over by the wind.
- Ablution facilities provided will include shelter, toilets and hand washing facilities/hand sanitizer.
- Toilets will be provided as required.
- Sanitation facilities shall be located within 100m of any point of work, but not closer than 50m from any water body, storm water channels and no-go areas; or according to the customer EMPr.
- All temporary/portable toilets will be secured to the ground to prevent them toppling due to wind or any other cause.
- Entrances to toilets will be adequately screened from public view. The height and width of the screen must be able to cover the entire entrance.
- Ablution facilities provided will be maintained in a hygienic state and serviced regularly to ensure proper operation.
- Toilet paper will be supplied at ablutions.
- No spillage will be allowed when the toilets are cleaned or serviced.
- The contents of chemical toilets will be removed by a registered and licensed contractor to a registered disposal site. The Contractor must provide a valid disposal permit for the landfill/treatment site and keep it on file.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The toilets will be serviced at least twice a week or as required. The Contractor to maintain a waste register for all the services and have waste manifests for all the waste collected.
- Waste disposal certificates for mobile chemical toilets must be retained for a minimum of five years.

4.2.12 Trenching and excavations

Objectives: Adequate topsoil and subsoil management during trenching.

Measures

- Topsoil and subsoil excavated during trenching may be stockpiled next to the trench, but must be set back from the edge of the trench by a minimum distance of 1m.
- Subsoil can be used – if suitable – for road construction.

4.2.13 Excavations and stockpiling

Objectives: Correct excavation and stockpiling protocol implemented on site.

Measures:

- The movements of the construction vehicles must be confined to the immediate vicinity of each tower location.
- All construction activities (i.e. vehicle movement) in cultivated fields should be minimised and contained within clearly demarcated areas.
- Topsoil is to be stockpiled upslope of the excavation where possible.
- Rocks and debris are to be stockpiled separately within the immediate construction site and used as fill where necessary.
- Rocks can be stacked as walls to prevent the loss of top and subsoil on cut or fill banks.
- Banks should not be steeper than 1:3 and cut back where the ECO/ESCO deems necessary.
- Berms may be specified on sloped sites, depending on the gradient and length of slope affected.
- Any stockpiling of gravel, cut, fill or any other material including spoil shall be in areas approved by the ECO/ESCO within the defined working area.
- Ensure that stockpiled material is not lost due to exposure to the elements. If the stockpiled material is in danger of being washed or blown away, cover it with a suitable material, such as hessian or plastic. Do not cover stockpiles of topsoil with plastic.
- Do not allow stockpiling of any material within the 100m of any residential areas or 20m of any no-go area.

4.2.14 Sanitation

Objectives: Ensure adequate sanitation for staff on site

Measures

- Provide adequate washing and toilet facilities at the construction site camp.
- Provide portable chemical toilets at a ratio of one toilet per 15 workers.
- The toilet facilities must be easily accessible.
- All temporary/portable toilets shall be secured to the ground to the satisfaction of the PM to prevent them from toppling over or being blown over by wind.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The type and exact location of the toilets shall be approved by the PM prior to establishment. No septic tanks are to be established.
- Ensure maintenance of all toilets in a clean sanitary condition to the satisfaction of the PM. Toilets are to be serviced at least once per week and toilet paper shall be provided.
- Ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from the site to an appropriate location/facility. The Contractor/service provider is to provide proof that the toilet contents are disposed of at an appropriate facility.
- Discharge of waste from toilets into the environment and burial of toilet waste is strictly prohibited.
- Waste disposal certificates for mobile chemical toilets must be retained for a minimum of five years.

4.2.15 Environmental Awareness

Objectives: Provide adequate environmental training

Measures

- Provide adequate environmental training.
- Ensure that all employees undergo project induction on environmental awareness.
- Provide evidence that the environmental awareness induction courses have been presented.
- Place emphasis on any (potential) environmental impacts relating to the construction activities on site and to the related environmental precautions taken to avoid or mitigate these impacts.

  The environmental training should, as a minimum, include the following: The importance of conformance with all environmental policies; The significance of environmental impacts, actual or potential, as a result of their work activities; Their roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements; The mitigation measures required to be implemented when carrying out their work activities; The importance of not littering; The need to use water sparingly; Details of, and encouragement to, minimise the production of waste and re-use, recover and recycle waste where possible; Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed should these be encountered; The procedures which must be followed should a grave or any significant archaeological finding be encountered, or unearthed during the construction phase; Details regarding fauna and flora of special concern, including protected/endangered plant and animal species, and the procedures to be followed should these be encountered during the construction phase.
- Conduct a training needs analysis in consultation with the ECO/ESCO, to identify the appropriate environmental and health training programmes, and the appropriate target groups amongst the employees of the Contractor.
- File the results of the environment and health training needs analysis with the environmental records.
- Environmental awareness training programmes should contain the names, positions and responsibilities of personnel to be trained, the framework for appropriate training plans, and a schedule for the presentation of the training courses.
- Maintain records of all training interventions. The ECO/ESCO shall monitor the records and undertake regular follow ups.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.16 Safety and First Aid Management

Objectives: To minimise any potential safety or health related incidents on site.

Targets: To ensure compliance with the local authority by-laws and any other statutory requirements relating to health and safety on a construction site.

Measures:

- All people working on site are responsible for their own safety on site. Contractors and Principal Agent/s shall at all times comply with the relevant statutory requirements including the Occupational Health and Safety Act (Act 85 of 1993).
- A comprehensive site specific first aid kit must be available on site at all times.
- At least one person trained in safety and first aid and familiar with the first aid equipment on site must be present on the site at all times.
- Emergency procedures must also be established prior to the start of construction operations on site and appended to this EMPr.
- First Aider/Safety Officer to ensure that there is a bin for medical waste were all the bandages, plasters etc are disposed
- Safety precautions must be taken to ensure that residents in the area do not come to harm. The construction site shall be off limits to the general public at all times during the construction period and during site clean-up.
- Clearly demarcate construction areas, open sewers, trenches and other potential construction-related danger areas with hazard tape and/or appropriate fencing.
- Erect hazard warnings and maintain in good condition warning signs in the relevant languages and at appropriate positions, warning traffic of construction activities ahead and at problem sites.
- Ensure that all staff is compliant with the relevant safety regulations on site and wear applicable safety clothing and gear at all times while on site.

4.2.17 Emergency preparedness

Objectives: Compile and maintain environmental emergency procedures

Measures:

- Compile and maintain environmental emergency procedures to ensure an appropriate response to unexpected or accidental incidents that may cause environmental impacts.
- Activities that may be addressed in the environmental emergency procedures include, for example, accidental exposure of employees to hazardous substances, veld fires and accidental spillage of hazardous substances.
- Ensure that the necessary materials and equipment for dealing with the spills and leaks are available on site at all times.
- The site shall have a supply of absorbent material readily available to absorb any accidental hydrocarbon spills. The quantity of such material shall be able to absorb/deal with a minimum of 200 litres of spill.
- Contain any spill using sand berms, sandbags, sawdust or absorbent materials.
- The area shall be cordoned off and secured.
- Notify the ECO/ESCO, PM and relevant authorities of any spills that occur.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Assemble and clearly list the relevant emergency telephone contact numbers for staff and brief staff on the required procedures. These contact details shall be listed in English, and any other relevant language, in the site office, construction camp and any other suitable areas.
- The treatment and remediation of areas affected by emergencies shall be undertaken to the satisfaction of the PM and ECO/ESCO at the cost of the Contractor where his staff have been proven to be responsible for the emergency.

- The environmental emergency procedures plan should include the following:
  - A list of key personnel
  - Details of emergency services applicable to the various areas along the route that turbine components will need to be transported and for the site itself (e.g. the fire department, spill clean-up services, etc.)
  - Internal and external communication plans, including prescribed reporting procedures where required by legislation; Actions to be taken in the event of different types of emergencies; Incident recording, progress reporting and remediation measures required to be implemented.
  - Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.
  - Training plans, testing exercises and schedules for effectiveness.
  - Comply to emergency preparedness and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended and/or any other relevant legislation.
  - Maintain an environmental incident register to record incidents that occur on site as a result of the activities associated with the contract. Environmental incidents constitute all those activities and incidents that may have a negative impact on the surrounding natural environment.
  - Ensure that each environmental incident is investigated by the ECO/ESCO and forward an environmental incident report to the Contractor, Proponent and relevant authority, including details on the manner in which the incident was remedied.
  - Ensure that each environmental incident report contains as a minimum, a description of the incident, a statement on the severity and significance of the impact, and actions taken to remediate the resultant damage.

4.2.18 Air Quality (Dust Impacts) Management

Objectives: To minimise potential air quality impacts during construction related activities.

Targets: To ensure compliance with the National Dust Control Regulations (GN No. R. 827) of 1 November 2013, promulgated in terms of National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)) relating to air quality These regulations prohibit a person from conducting any activity in such a way as to give rise to dust in such quantities and concentrations that the dust, or dust fallout, has a detrimental effect on the environment.

Measures:

- Ensure that all vehicles and plant used are maintained in good working order to help reduce air emissions.
- The burning of substances that may emit foul smelling smoke or vapour, e.g. oil rags, tar paper, etc. is not permitted.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Wind-blown dust and sand may generate considerable negative impacts (e.g. reduced visibility for vehicles travelling along adjacent roads and nuisance to neighbours/adjacent erven). Therefore, the following is required to be taken into account:
  - The use of water bowsers and wetting down of loose soil areas (preferably with non-potable water), as well as the erection of shade netting screens to prevent off-site movement of dust.
  - The use of straw stabilisation or mulching of exposed sandy areas must also be considered in consultation with the ECO/ESCO.
  - Speed limits for vehicles on unpaved roads and minimisation of haul distances must be implemented on site.
  - All material loads need to be properly covered during the transportation process.
  - Avoid the excavation, handling and transport of erodible materials under high wind conditions.
  - Soil stockpiles shall be wetted and/or sheltered from the wind, as required.
  - Location and treatment of material stockpile must take into consideration the prevailing winds direction and location of sensitive receptors.
  - Adherence to ear duct loads and protective gear which is stipulated in the Occupational Health and Safety Act (Act No. 85 of 1993).
- In particular, no potable water may be used for dust suppression purposes.
- During the dry season and during the wind season, a water bowser must be present on site at all times to ensure that all dust is wetted and managed appropriately.
- Dust reduction techniques must be used before and during surface clearing, excavation, or blasting activities.
- Appropriate dust suppression techniques must be implemented on all exposed surfaces during periods of high wind. Such measures may include wet suppression, chemical stabilisation, the use of a wind fence, covering surfaces with straw chippings and re-vegetation of open areas.
- Should a need arise, dust monitoring must be conducted on site.

4.2.19 (Wastewater and Contaminated) Water Quality Management

Objectives: To minimise any potential impacts on the water quality of the site and off site through direct and indirect impacts.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to water quality.

Measures:

- Prepare a Method Statement on the control and management of wastewater on site, including providing for the appropriate disposal of contaminated water.
- No grey water runoff or uncontrolled discharges from the site/working areas (including wash down areas) to adjacent or nearby water bodies shall be permitted.
- Discharge water containing environmental pollutants into a conservancy tank, where appropriate, for removal from site.
- Prevent runoff loaded with sediment and other suspended materials from the site/working areas from discharging to adjacent watercourses and/or stormwater infrastructure.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Potential pollutants of any kind and in any form shall be kept, stored and used in such a manner that any escape can be contained.
- Wash down areas must be approved by the PM and ECO/ESCO and shall not pollute the surrounding environment.
- Notify the PM and ECO/ESCO of any pollution incidents on site.
- Site staff shall not be permitted to use any stream, river, open water body or natural water source adjacent to or within the designated site for the purposes of bathing, washing of clothing, drinking or for any construction or related activities.
- Bowser water (or another source approved by the Principal Agent and ECO/ESCO) should instead be used for all activities such as washing of equipment, dust suppression, concrete mixing, compaction, etc. with the latter taking place well outside any identified sensitive areas and within a demarcated area approved by the ECO/ESCO.
- In particular, no potable water may be used for dust suppression purposes.
- Before an operation occurs near a waterbody, vehicles must be checked for leaks, to reduce soil and water contamination from vehicle fluids.
- Re-fuelling areas for vehicles must be bunded and located away from water resources and sensitive environments to prevent any accidental spillage contaminating soil or seeping into groundwater aquifers. All servicing area run-off must be directed towards a fully contained collection sump for recovery and appropriate disposal.
- Old engine oil must NOT be thrown on the ground or down a stormwater drain but rather collected in containers and recycled.
- If soil contamination occurs (such as due to a spill), the soil must be removed from the site and legally disposed of appropriately.
- Any spills that occur during all phases of the development must be recorded in the Environmental Register. All clean-up actions must also be recorded that was used to remediate the spillage. All actions need to be agreed in conjunction with the ECO/ESCO prior to commencing any work.

4.2.20 Hazardous Material / Substance (Bitumen Oils and Lubricants) Management

Objective: To minimise any potential hazardous material from causing environmental damage through the use, storage and/or handling of such hazardous material during the construction works.

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to hazardous materials.

Measures:

- All potentially hazardous materials are to be handled by the Contractor's trained staff and stored on site in accordance with manufacturer's instructions and legal requirements.
- Clearly label products and provide symbolic safety/hazard warning signs (MSDSs).
- The Contractor shall ensure that all hazardous materials are stored within a bunded area.
- All hazardous material containers are required to be inspected regularly to ensure that no leaks occur.
- When hazardous materials are required to dispensed, proper dispensing equipment must be used and made available on the site for such activities.
- The dispensing equipment is required to be stored in a waterproof container when not in use.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Hazardous material must be used in moderation and dispensed at designated areas, which are controlled appropriately.
- Ensure that areas for the storage of fuel and other flammable materials comply with standard fire safety regulations.
- Provide appropriate training for the handling and use of such materials as necessary. This includes providing for any spills and pollution threats that may occur.
- The Contractor shall take all reasonable and necessary precautions to prevent accidental and incidental spillage during the use of such materials.
- In the event of a hazardous material spill, the Contractor must isolate and contain the hazardous material spillage.
- The Contractor shall clean up the spill, either by removing the contaminated soil and/or by the application of absorbent material in the event of a larger spill.
- Treatment and remediation of the spill will be undertaken to the reasonable satisfaction of the Engineer.
- The Contractor must advise that Engineers and the ECO/ESCO of where any Bitumen is being stored.
- The storage area of hazardous waste should comprise of a smooth impermeable floor (concrete and/or 250um plastic cover).
- A spill kit is required to be present on the site at all times.
- The Contractor must develop a spill kit checklist and maintain it to ensure that the contents of the spill kit are complete at all times
- Locate fuel and chemical depot(s) at least 100m from any water body.
- Retain the relevant MSDS on site. Procedures detailed in the MSDS shall be followed in the event of an emergency situation.
- Where hazardous substances are removed from site for disposal, proof of disposal for auditing purposes shall be kept in the form of disposal certificates.
- Safe disposal certificates for general, hazardous and recycled waste should be retained for a minimum period of five years in accordance with the provisions of the National Waste Information Regulations promulgated in Government Notice (“GN”) No. R. 625 of 13 August 2012.
- For any event resulting in the spill or leak of hazardous substances into the ground and/or water courses must be reported to all relevant authorities, including the Directorate: Pollution and Chemicals Management, within 14 (fourteen) days. This requirement is in terms of section 30(10) of the NEMA, 1998 that pertains to the control of incidents and include the reporting, immediate containment and clean-up procedure of such incident and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

4.2.21 Hazardous Material (Fuels, Oils and Others) Management

Objective: To minimise any hazardous fuel and oil material from causing environmental damage through the use, storage and/or handling of such hazardous material during the construction works.

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to hazardous materials.

Measures:

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Obtain all necessary approvals regarding storage and dispensing, where fuel is to be stored on site, from the appropriate authorities.
- Fuel may be stored on site in an area which was been approved by an Engineer and the ECO/ESCO.
- Ensure that all liquid fuels and oils are stored in tanks with lids and that these are kept firmly locked at all times. The design and construction of the storage tanks shall be in accordance with a recognised code and as approved by the PM.
- A chemical register must be placed on the entrance of the hazardous store to identify all the chemicals in the store.
- The tanks or bowsers are required to be located / stored on smooth impermeable surfaces (concrete or plastic) with an earth bund.
- Where reasonably practical, plant shall be refuelled at a designated refuelling area or at the workshop as applicable. If it is not reasonably practical then the surface under the temporary refuelling area shall be protected against pollution to the reasonable satisfaction of the PM prior to any refuelling activities.
- The impermeable lining shall extend to the crest of the bund and the volume of the bund will be 130% of the total of the storage tanks and/or bowsers located on the site.
- The bunded area is required to be sheltered from the rain.
- Provisions shall be made for refuelling at the fuel storage area, by protecting the open soil with bunding.
- If fuel will be dispensed from 200l drums, only empty clean drums will be able to be stored on the bare ground.
- All empty dirty drums must be stored on a bunded area.
- Should the use of a 200l drum be required, proper dispensing mechanisms are required to be used and the drum will not be allowed to be tipped in order to dispense the fuel.
- The dispensing mechanism for the fuel drums will be stored in a waterproof container when it is not in use.
- The Contractor will be required to prevent unauthorised access to the fuel storage area. Keep fuel under lock and key at all times.
- The Contractor must ensure that adequate fire-fighting equipment is readily available at the fuel storage area.
- Where practical, the plant shall be refuelled at the fuel storage area or at the workshop as applicable. If it is not possible then the surface under the refuelling area must be bunded with plastic and/or wooden pallets.
- The Contractor must obtain the Engineer's and ECO/ESCO's approval for any refuelling or maintenance activities.
- All hazardous material containers are required to be inspected regularly to ensure that no leaks occur.
- The storage of general waste in excess of 100m³ and/ or the storage of hazardous waste in excess of 80m³, excluding the storage of waste in lagoons or the temporary storage (i.e. less than 90 days) of such waste, requires the applicant to comply with GN No. 926 of 29 November 2013: National Norms and Standards for the Storage of Waste.
- Remove storage tanks on completion of the works.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- No smoking shall be allowed in the vicinity of the fuel storage area. Erect at least one no-smoking warning sign, which is clearly visible at the fuel storage area, to warn all staff of associated dangers.
- The Contractor to ensure that there is always a supply of absorbent material readily available to absorb/break down any hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200l of hydrocarbon liquid spill. This material must be approved by the PM prior to any refuelling or maintenance activities.
- In the case of a spill, contaminated material must be removed from the site immediately and disposed of at an appropriate hazardous waste facility.

4.2.22 Workshop, Equipment Maintenance and Storage Management

Objective: To minimise any potential dangerous material from causing environmental damage through the use, storage and/or establishment of such areas during the construction works.

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to such storage and/or workshop and/or equipment maintenance areas.

Measures:

- Should any leaking equipment be present on this site, this equipment is required to be removed from the site immediately.
- All maintenance of equipment and vehicles on site should ideally be repaired off site or at a designated workshop area, which is appropriately bunded. Contractor to provide a method statement for such servicing.
- Should emergency maintenance work be undertaken outside of the workshop area then this emergency work is required to be bunded appropriately and further such works must be approved by the Engineer and ECO/ESCO prior to commencement.
- The Contractor must ensure that the workshop and/or any other maintenance areas (such as emergency maintenance areas) do not result in the contamination of the soil and/or vegetation.
- The workshop must have a smooth impermeable floor (concrete and/or plastic).
- The floor of the workshop is required to be angled towards an oil trap and/or sump to ensure that any dangerous spills are contained in the workshop area.
- Should servicing of equipment be required to be undertaken on the site then drip trays are required to be used to contain any waste oil and other lubricants.
- Drip trays are required to be used for all stationery equipment such as generator sets and compressors and all parked equipment such loaders, scrapers and vehicles on the construction site.
- All drip trays must be monitored and emptied on a daily basis.
- During rainy days and/or the rainy season the drip trays are required to be monitored continuously to ensure that they do not overflow. Where possible the Contractor is encouraged to place the drip trays and equipment during the rainy periods in sheltered areas, which will ensure that the drip trays do not overflow.
- The washing of any equipment on the site must be limited to urgent and/or preventative maintenance requirement only.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- As washing of any equipment must be undertaken off site and/or in the workshop area if necessary.
- The use of detergents for washing equipment must be restricted to detergents that have a low phosphate and nitrate content.
- The store man will be responsible for stacking and storage of material in the storage area at the site camp.
- Bricks, sandstone blocks, building sand, plaster sand and stone will be stored "open" on site but with special care that materials are not contaminated i.e. that different types of sand are not mixed.
- Cement will be stored in a lockable and waterproof container and will be stacked. Otherwise, cement bags to be covered and placed on a protective sheet.
- Not more than 13 pockets high. Cement will be used, as far as possible, on a first-in first-out basis;
- Reinforcing bars will be stored in the open but will be placed on timber poles to avoid "contamination" by mud or soil.
- Steel door and window frames will be stored in the open but within a fenced-off secure area;
- Paint will be stored in a ventilated lockable store.

Natural Materials: Sourcing

- Materials must be sourced in a legal and sustainable way to prevent off-site environmental degradation.
- Where possible, a signed document from the supplier of natural materials must be obtained confirming that they have been obtained in a sustainable manner and in compliance with relevant legislation (legitimate source).
- Where materials are borrowed (mined), permit must be provided of authorization to mine these materials.

Stockpile Areas

- Sites for stockpile areas are to be agreed with the Principal Agent and ECO/ESCO.
- Materials are not permitted to be stockpiled underneath or against the trunks of trees, on streams, riverbanks or within floodplains.
- No material will be permitted to be stockpiled in drainage lines or where there is a potential for the stockpiled material to be washed away.
- Stockpiles must not obstruct natural water pathways.
- Stockpiles must not exceed 2m in height.
- Stockpiles to be kept clear of alien invasive weeds.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.23 Noise Pollution Management

Objectives: To minimise any potential noise impacts related to the construction operations on site.

Targets: To ensure compliance with all legal requirements, including the local authority by laws and any other statutory requirements relating to noise impacts.

Measures:

- Construction staff must be trained to minimise noise impacts.
- All wind turbines must be located at a setback distance of 500m from any homestead and a day/night noise criteria level at the nearest residents of 45.0dBA should be used to locate the turbines. The 500m setback distance can be relaxed if local factors; such as high ground between the noise source and the receiver, indicates that a noise disturbance will not occur;
- *Grading and building of new internal roads* - Construction equipment to comply with the standards for construction vehicles as explained in the IFC's Environmental Health and Safety Regulations.
- *Preparation of the footprint area, earthworks & construction* - Construction equipment to comply with the standards for construction vehicles as explained in the IFC's Environmental Health & Safety Regulations.
- *Construction of the wind turbines* - Construction of wind turbines to take place during daytime only, where possible.
- *Additional traffic* - Roads to be kept in a good state at all times and all potholes to be repaired.
- Keep noise level within acceptable limits in compliance with all relevant guidelines and regulations.
- The (contractor) holder of the authorisation must ensure that all vehicles, equipment and machinery are well maintained and equipped with silencers;
- Reverse hooters of heavy earthmoving vehicles must be set at such a level that the beeping sound does not create a nuisance to residents of nearby houses.
- The use of all plant and machinery shall be appropriate to the task required in order to reduce noise levels and/or environmental damage.
- The applicant must provide a prior warning to the community when a noisy activity e.g. blasting is to take place. Notify affected community and ECO/ESCO, should the PM approve any noisy construction activities outside of normal working hours, least 5 days in advance of the event.
- The Contractor must use modern, appropriate equipment, which produces the least noise.
- Any unavoidably noisy equipment must be identified and located in an area where it has least impact.
- The use of noise shielding screens must be considered and the operation of such machinery restricted to when it is actually required.
- The applicant must ensure that the National Noise Control Regulations and SANS 10103:2008 are adhered to and reasonable measures to limit noise from the work site are implemented.
- The applicant must ensure that the construction staff working in areas where the 8-hour ambient noise levels exceed 75dBA must wear ear protection equipment.
- The applicant must ensure that all equipment and machinery are well maintained and equipped with silencers.
- In order to prevent noise impacts resulting from construction activities, working hours are to be limited

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- If certain construction requires work outside of these hours, all adjacent landowners have to be informed prior to any construction outside of the specified hours.
- Preventative measures will be taken, where required, to minimise noise and vibration nuisance from sources such as power tools.
- Design and implement a noise monitoring programme, as indicated below:
    - Twice annual noise monitoring during construction period by an Acoustic Consultant or Approved Noise Inspection Authority, during the winter and the summer periods, with all information to be kept on record.

4.2.24 Blasting/Drilling/Demolitions Management

Objectives: To minimise impacts associated with blasting/drilling/demolition on site during construction.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to blasting and/or drilling and/or demolitions and to minimise nuisance impacts.

Measures:

- The following recommendations will be implemented in addition to normal health and safety requirements as stipulated in the Occupational Health and Safety Act (Act No. 85 of 1993).
- These activities will only take place via a competent and appropriately qualified and legally compliant Contractor.
- The Contractor shall take all necessary precautions to prevent damage to special features and the general environment, which includes the prevention of any fly rock.
- Environmental damage caused by the above activities shall be repaired and/or rehabilitated at the Contractor's expense to the satisfaction of the ECO/ESCO and Principal Agent.
- None of the above activities may be carried out on Sundays or Public Holidays without the approval of all relevant authorities.
- Careful sealing off of the site and surrounding area will be carried out to ensure that all personnel are removed from the site and its immediate surrounds.
- Adequate notification and warning of blasting activities must be provided to all adjacent and or affected parties.
- Borrow materials must be obtained only from authorised and permitted sites.
- Appropriate anti-erosion measures such as silt fences must be installed in disturbed areas.

4.2.25 Concrete Mixing (Batching) Management

Objectives: To ensure that appropriate and efficient measures are undertaken on site to manage concrete mixing areas during the construction phase.

Targets: To ensure compliance with the local authority by laws, independent specialist recommendations and any other statutory requirements relating to concrete mixing.

Measures

- Batching plants are to be located in areas of low environmental sensitivity.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The batching plant area shall be operated in a way that prevents contaminated water run-off from the batching site and polluting nearby water bodies.
- Suitable measures, such as diversion berms, to be installed to direct the wastewater to a suitable catchment area.
- Suitable screening and containment must be in place to prevent wind-blown contamination from cement storage, mixing, loading and batching operations.
- Topsoil must be cleared from the area demarcated for the batching plant prior to establishment and stockpiled for later rehabilitation purposes.
- Topsoil (300 mm) should be stored at an appropriate site on each farm for future rehabilitation after decommissioning.
- No batching / mixing activities may occur on the ground or on any permeable surface.
- Protect the batching plant on the up-slope side (where applicable) with an earth berm or sandbags to deflect clean surface run-off water away from the plant.
- Cleaning of equipment and flushing of mixers must occur in designated wash bays (with contaminated water collected, stored/contained) to ensure that contaminated wash water does not enter the environment.
- Aggregates (Stone, Crusher Sand and River Sand) will be stored in dedicated "bins". The bins will have three walls each to contain the aggregates.
- All visible remains of excess concrete and aggregate must be removed from site and disposed of in an appropriate manner.
- Cement bags must not become litter after use. They must be disposed of in bins/skips (see waste management).
- Concrete Truck Drivers to adhere to the following:
  - Appropriate License Code
  - Competence certificate
  - Medical Examination
  - Training given on daily checklists etc.

4.2.26 Establishment of Construction Lay Down Area

Objectives: To minimise impacts associated with the establishment and operation of construction site lay down area.

Targets: To ensure proper management of the construction site from a centralised point

Measures:

Establishment of Construction Sites:

- The contractor shall not locate the site camps in any areas in which vegetation is pristine (as defined by each contract's specifications), nor within 100m of any watercourse, nor in any area that could cause nuisance or safety hazards to surrounding landowners, inhabitants or the general public unless otherwise instructed by the Engineer and ECO/ESCO.
- The site camp/office is to be clearly signposted and no unauthorised access is permitted. Relevant contact details are to be made easily visible and available to the public for the purposes of complaints/concerns or emergencies.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- A plan showing the construction site layout, including the positions of all buildings, fuel storage and hazardous materials storage areas, stockpiles, storm water management infrastructure, access points for deliveries and services, the position of site offices and ablutions and other infrastructure must be prepared and submitted to the Engineer and ECO/ESCO for approval and a copy kept on site.
- The plan will detail all pollution control measures. The sites are demarcated by means of a security fence
- Access to the sites will be limited to authorised persons and will be security controlled
- The placement of buildings and equipment will be done to minimise the footprint and visual impact of the sites
- Locate Materials and soil stockpile areas, fuels and chemical storage areas and batching areas away from environmentally sensitive areas.
- Down lighting will be used and it will be ensured that lighting on site does not interfere with road traffic or cause a reasonably avoidable disturbance to the surrounding community or other users of the area
- Smoking areas to be provided and these areas must have a fire extinguisher. Fire extinguishers to be monitored (i.e. for expiry) and a register for this monitoring to be made available by the EO.
- Workers will be instructed to dispose of cigarette butts in designated areas.

Demarcation and Access Control:

- Sound environmental principles must be followed whilst establishing access to the site.
- The construction sites will be properly identified and demarcated.
- The selected accesses must consider minimising nuisance impacts on neighbours.
- Any new access tracks must be approved by the Customer/Engineer and ECO/ESCO prior to construction. No roads or access tracks may be created on an ad-hoc basis.
- The utility and safety of any exiting access shall not be compromised by use for the construction work or construction-related activities, nor shall spillage, littering, accelerated erosion, or other environmental impact, occur.

Clearing and Grubbing:

- Prior to clearing the ECO/ESCO must be notified in order to identify and demarcate any indigenous trees or plants, nesting sites or heritage sites that require protection or translocation.
- Areas of the construction site requiring clearance shall only be cleared immediately prior to construction activities commencing e.g. at the last practical stage.
- No indigenous trees or shrubs may be felled, lopped, pruned or removed without the prior permission of the ECO/ESCO.
- Pruning of branches of indigenous trees will be completed under direct competent supervision and sealant will be applied to cut surfaces in excess of 50mm in diameter.

4.2.27 Fire Management

Objectives: To ensure that fire as a result of the construction related activities are controlled and managed appropriately. Please refer to Appendix L for fire management plan.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to fire management.

Measures

- Take all reasonable and precautionary steps to ensure that fires are not started as a consequence of construction activities.
- Contractor to provide adequate firefighting equipment on-site. Fire-fighting equipment must be in working order and serviced to date.
- Contractor to provide fire-fighting training to selected construction staff. Appoint a Fire Officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedures to be followed. Forward the name of the Fire Officer to the ECO/ESCO for his approval within seven days of being on site.
- Flammable materials must be stored under conditions that will limit the potential for ignition and the spread of fires.
- Smoking shall not be permitted in those areas where there is a fire hazard, e.g. fuel storage areas and areas susceptible to the rapid spread of fires.
- Hold fire prevention talks with staff to create an awareness of the risks of fire.
- Preferentially no fire will be lit on the site, however if required, fires must be limited to use for cooking and heating use only within a designated area. This area will be suitable distance from any fuel source.
- No burning of waste will be permitted on site.
- Suitable precautions will be taken when working with welding or grinding equipment near potential sources of combustion.
- The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase will be compensated for. The agreement must be signed before the construction phase commences.
- The option of establishing a fire-break around the perimeter of the site prior to the commencement of the construction phase should be investigated.
- Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas.
- Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care must be taken during the high risk dry, windy summer months.
- No construction staff, with the exception of security staff, to be accommodated on site over night.
- As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the firefighting costs borne by farmers and local authorities.
- The Applicant must establish a 30-meter firebreak around the proposed WEF.
- No open fires will be allowed on site under any circumstances.
- No Smoking except in designated safe smoking areas which include cleared area with no combustible vegetation or materials and approved butt receptacles.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The contractor shall take all reasonable & active steps to avoid increasing the risk of fire through their activities on Site.
- The contractor shall ensure that the basic firefighting equipment is to the satisfaction of the ECO/ESCO.
- The contractor shall take precautions when working with welding, "hot" work or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher and fire beaters immediately at hand and the use of welding curtains.
- The contractor is to provide the ECO/ESCO with a list of equipment and location of all firefighting equipment.
- The contractor to provide the ECO/ESCO with a list of names of designated firefighting teams.
- The contractor will ensure awareness of fire seasons, and particular controls required, by the posting of the daily FDI on notice boards.
- The contractor will provide relevant staff with firefighting training.
- The contractor will maintain vegetation to manageable levels in the project area.
- All site staff must know the fire drill procedure

Please refer to Annexure L for the Fire Management Plan

4.2.28 Traffic Control Management

Objectives: To ensure that traffic impacts as a result of the construction related activities are minimized. Please refer to Appendix J for Transportation management plan

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to construction traffic. To ensure that the impacts on current traffic flows in the vicinity of the site are minimised and that complaints relating to traffic associated with the site's activities are minimised.

Measures:

- Access to the site is proposed via the existing farm access roads.
- During construction, existing farm access roads might require regular maintenance to prevent permanent damage to the road structure.
- It is recommended that once the construction phase has been completed the farm access roads needs to be inspected and repaired where necessary.
- All deliveries with abnormal loads (for the transport of turbine components, main assembly cranes and other large pieces of equipment) will operate under an approved transportation plan with the necessary traffic routes and traffic accommodation plans in place.
- Implementation of a traffic management plan for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan must include measures to minimise impacts on local commuters e.g. limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely populated built up areas so as not to disturb existing retail and commercial operations.
- These measures are included in the Transport Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Abnormal and heavy load vehicles should not be allowed on the public road network during the typical weekday a.m. and p.m. peak hours.
- Abnormal load vehicles should be escorted by traffic officials to control traffic and limit possible conflicts at intersections.

Please refer to Annexure J for the Traffic Management Plan

4.2.29 Wet Environments Management

Objectives: To ensure that the best practice is followed with regards to wet environments rehabilitation, management and operations.

Targets: To ensure that the wetland and rivers areas on site are not impacted during the establishment of the proposed development.

Measures:

- The existing road infrastructure must be utilised as far as possible to minimise the overall disturbance created by the proposed project.
  - New roads must be rationalised and any unnecessary temporary roads decommissioned and rehabilitated to reduce the disturbance of the area and within the river beds.
  - For new roads to the turbines, these must be located at least 50m outside of the drainage/riverbeds, if possible.
  - Where access routes need to be constructed through the watercourses, the disturbance of the channels should be limited.
  - Wetland areas should be avoided and any road adjacent to a wetland feature should also remain outside of the 50m buffer zone.
- All crossings over watercourses must be such that the flow within the drainage channel is not impeded and should be constructed perpendicular to the river channel, where possible based on the contours.
- Road infrastructure and cable alignments should coincide as far as possible to minimise the impact.
- Any indigenous vegetation clearing within or adjacent to the watercourses must occur in a phased manner to minimise erosion and/or run-off. An Environmental Control Officer or a specialist with knowledge and experience of the local flora must be appointed during the construction phase to be able to make clear recommendations with regards to the revegetation of disturbed areas.
- Extra care must be taken that structures of the proposed WEF development are not placed within drainage lines and do not obstruct the flow of runoff water.
- Construction camps. including fuel storage, chemical toilets, refuelling, vehicle maintenance or vehicle depots, temporary laydown areas, washing of machines and vehicles, and stockpiles (spoil materials and stripped topsoil) must be located at least 30m from freshwater ecosystems identified to be of low or moderate conservation importance and 50m from freshwater ecosystems identified to be of high conservation importance.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- No spoil material, including stripped topsoil, may be temporarily stockpiled within 30m of freshwater ecosystems identified to be of low or moderate conservation importance and 50m of freshwater ecosystems identified to be of high conservation importance.
- If construction areas are to be pumped of water (e.g. after rains), this water must be pumped into an appropriate settlement area, and not allowed to flow into any rivers or wetland areas.
- No discharge of effluents or polluted water shall be allowed into any rivers or wetland areas.
- Wetlands, rivers and riparian areas within which no wind turbines or access roads are to be established must be treated as "no-go" areas and appropriately demarcated as such. No vehicles, machinery, personnel, construction material, fuel, oil, bitumen or waste is to allowed into these areas without the express permission of and supervision by the ECO/ESCO, except for rehabilitation work in these areas.
- Workers must be made aware of the importance of not destroying or damaging the vegetation along rivers and in wetland areas, and this awareness must be promoted throughout the construction phase.
- Workers must be made aware of the importance of not killing or harming any animals that they encounter, and this awareness must be promoted throughout the construction phase.
- There must be as little disturbance to surrounding vegetation as possible when construction activities are undertaken, as intact vegetation adjacent to construction areas will assist in the control of sediment dispersal from exposed areas.
- Freshwater ecosystems located in close proximity to the site must be inspected on a regular basis (but especially after rainfall) by the ECO/ESCO for signs of disturbance, sedimentation and pollution – these inspections should form part of every site inspection carried out by the ECO/ESCO. If signs of disturbance, sedimentation or pollution are noted, immediate action must be taken to remedy the situation and, if necessary, a freshwater ecologist is to be consulted for advice on the most suitable remediation measures.
- Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, must be located on impervious bases and should have bunds around them. Bunds must be sufficiently high to ensure that all the fuel kept in the area will be captured in the event of a major spillage.
- The BESS must be appropriately bunded and regularly inspected in case of leak or spillage.
- Sediment trapping measures (e.g. silt curtains, cut-off trenches and/or settlement sumps) must be placed down-slope of areas that are cleared, to minimise sediment runoff into freshwater ecosystems. The use of sediment-trapping measures is particularly important for construction activities undertaken during the wet season (i.e. May – October). A Method Statement must be drawn up before construction begins, setting out the exact measures that are proposed to be used. This Method Statement is to be subject to the approval of the ECO/ESCO and must be implemented under the guidance of the ECO/ESCO.

Please refer to Annexure I for the Aquatic Management Plan

4.2.30 Stormwater and Erosion Management

Objectives: To ensure that erosion and storm water are controlled and managed.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to management of storm water and erosion.

Measures:

- During the construction phase, site management must be undertaken at the laydown area, batching plant and the individual turbine construction areas. This should specifically address

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

on-site stormwater management and prevention of pollution measures from any potential pollution sources during the construction activities such as hydrocarbon spills. Any stormwater that does arise within the construction sites must be handled suitably to trap sediments and reduce flow velocities.

- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.
- Extra care should be taken that structures of the proposed WEF development are not placed within these drainage lines and do not obstruct the flow of runoff water.
- Slow stormwater, and in such a way lessen erosion on the site.
- The local material such as the rocks found within the area could be applied to the stormwater runoff from the road to prevent erosion.
- Take all reasonable measures to control storm water and the erosive effects thereof and provide a Method Statement for approval by the PM and ECO/ESCO.
- Areas affected by construction related activities and/or susceptible to erosion must be monitored regularly for evidence of erosion. Ongoing monitoring must be carried out on the interventions that have been proposed to deactivate the existing erosional features to ensure that they are successful in terms of meeting their objectives. Modifications to the interventions may be required if it is found that the interventions are not entirely meeting their objectives in terms of stabilising the existing erosional features.
- As it is relatively unclear at this stage to fully understand what impact the proposed development is going to have in terms of erosion, it is recommended that the drainage lines be monitored on a regular basis to ensure that any erosion is adequately managed.
- In general, the areas where concentrated flows develop as a result of the proposed development must be monitored for erosion and corrective measures implemented accordingly. Areas of particular concern would include, but are not limited to, the discharge points from the laydown and WEF footprint areas.
- The farm road network must be monitored regularly to determine areas where stormwater may be concentrated or diverted which may lead to erosion. In addition, the crossing points at the drainage lines must be monitored for signs of erosion.
- In general, the site must be monitored following any large-scale storm event as well as periodically on an annual basis.
- A monitoring program must be developed during the final design stage to ensure that impacts, both during the construction phase, are managed.
- Protect streams, rivers, pans, wetlands, dams, and their catchments from erosion, direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products.
- Inspect storage containers regularly to prevent leaks into the aquatic system.
- On any areas where the risk of erosion is evident, special measures may be necessary to stabilise the areas and prevent erosion. These may include, but not be restricted to:
    - Confining construction activities
    - Using cut-off berms

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

  - Using mechanical cover or packing structures such as geo-fabric to stabilise steep slopes or hessian, gabions and mattress and retaining walls
  - Straw stabilising
  - Brush cut packing
  - Constructing anti-erosion berms.
- The erosion prevention measures must be implemented to the satisfaction of the PM and ECO/ESCO.
- Where erosion does occur on any completed work/working areas, reinstate such areas and areas damaged by the erosion at the expense of the Contractor and to the satisfaction of the PM and ECO/ESCO.
- Restrict and control traffic and movement over stabilised areas.
- Repair and maintain any damage to the stabilised areas to the satisfaction of the PM and ECO/ESCO.
- The Contractor shall be liable for any damage to downstream property caused by the diversion of overland storm water flows.

Please refer to Annexure K for the Stormwater Management Plan

4.2.31 Flora and Fauna Management

Objectives: To aid in the conservation of floral and fauna habitat, floral biodiversity and protected floral species within the subject property as well as to promote the enhancement and good management of natural environmental features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to natural environment management.

Measures:

- Vegetation clearing to be kept to a minimum. No unnecessary vegetation to be cleared.
- All no-go areas must be clearly demarcated.
- Where roads and other infrastructure cross sensitive features such as drainage lines, caution must be exercised to ensure that impact to these features are minimised.
- All construction staff should undergo an environmental induction from the ECO/ESCO or other suitably qualified persons.
- Any fauna directly threatened by the construction activities must be removed to a safe location by the ECO/ESCO or other suitably qualified person.
- The collection, hunting or harvesting of any plants or animals at the site must be strictly forbidden. Personnel should not be allowed to wander off the construction site.
- Fires should only be allowed within fire-safe demarcated areas.
- No fuelwood collection is to be allowed on-site.
- No dogs are to be allowed on site.
- All hazardous materials must be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site must be cleaned up in the appropriate manner as related to the nature of the spill.
- No unauthorised persons are to be allowed onto the site.
- All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- All roads and other hardened surfaces should have runoff control features which redirect water flow and dissipate any energy in the water which may pose an erosion risk.
- Regular monitoring for erosion after construction to ensure that no erosion problems have developed as result of the disturbance.
- All erosion problems observed must be rectified as soon as possible, using the appropriate erosion control structures and revegetation techniques.
- Cleared areas which are not surfaced or required for construction must be revegetated with seed or plants of locally occurring species.
- Regular monitoring for alien plants within the development footprint during construction

Vegetation management

- Rehabilitation is to begin as individual turbines are erected and not left until the end of the construction phase.
- Rehabilitation shall be undertaken in line with the Rehabilitation plan developed for the project during the final design phase.
- Rehabilitation shall be required for all specified areas disturbed by the works and site camp.
- Rehabilitation shall ensure that all specified areas disturbed by the works are returned to a similar or better state than before the construction works commenced.
- The Contractor shall rehabilitate all disturbed areas to the satisfaction of the PM and the ECO/ESCO.
- Implement a programme of progressive rehabilitation, i.e. rehabilitation and/or re-vegetation must commence once works are complete in a particular area with acceptable regrowth being achieved after 3 months.
- A programme of progressive rehabilitation will provide an opportunity to assess whether or not the methods employed are suitable and successful. Where rehabilitation of an area is not successful, the Contractor will rehabilitate these areas at no additional cost to the Developer.
- Rehabilitation includes, but is not limited to, the following activities:
- Clearance of rubble associated with construction, including removal of surplus materials, excavation and disposal of consolidated waste concrete and concrete wash water, litter etc.
- Removal of all soil/sand contaminated by hydrocarbons by excavation to the depth of contaminant penetration and removal to an appropriate landfill site.
- Backfilling and contouring using stockpiled subsoil removed during site clearing. Finishing and grading of final levels of all disturbed areas shall be consistent with the master plan for the site.
- Rehabilitation of all drainage lines affected by construction to approximately their original profile. Where this is not feasible due to technical constraints, the profile is to be agreed upon by the PM.
- Ripping along the contour of compacted disturbed areas, including stockpile areas, to a depth of 300mm prior to the replacement of topsoil, except where otherwise specified by the PM.
- The eradication of young invasive/alien species that may have grown up during the construction period in impacted and rehabilitated areas.
- The removal of visually detracting or environmentally unacceptable piles of blast rock and boulders to an approved spoil site.
- Areas compacted by vehicles during construction must be scarified to allow penetration of plant roots and the regrowth of natural vegetation.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Excess subsoil shall be spoiled in a pre-identified location or be used, where possible, as infill material or building material, in conjunction with the ECO/ESCO's approval.

Please refer to Annexure M for the Revegetation &Habitat Management Plan

4.2.32 Heritage Resources Management

Objectives: To aid in the conservation of heritage (including archaeological) resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of such resources.

Measures:

- Palaeontology: no mitigation required.
- Archaeology (pre-colonial and colonial): no mitigation required, except if new sites and archaeological material are encountered during construction. This area must be cordoned off and the archaeologist and Heritage Western Cape (HWC) be notified by the environmental officer or senior person on site.
- If human remains are encountered during construction, they must be left in place and nothing removed, the area must be cordoned off and the project archaeologist informed, HWC and the South African Police Services must be notified and, if exhumation is required, a permit must first be obtained from HWC.
- Should any previously undocumented heritage resources be identified during the course of the construction, operation or decommissioning of the project, work must cease in the area of the find and HWC must be contacted regarding a way forward.
- The HWC Chance Fossil Finds Procedure (Annexure K) must be implemented for the duration of construction activities

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.33 Avifaunal Management

Objectives: To minimise or prevent, where possible, the disturbance and displacement of avifaunal Species of Conservation Concern. To avoid the mortality of avifaunal Species of Conservation Concern where practicably possible.

Targets: To ensure compliance with the statutory requirements and obligations in the approved EMPr relating to management of avifaunal resources.

Measures:

- Habitat Destruction
    - Laydown and other temporary infrastructure to be placed within very low sensitivity areas, preferably previously transformed areas, wherever possible;
    - Appropriate run-off and erosion control measures are to be implemented where required;
    - All contractors are to adhere to the EMPr and should apply good environmental practice during construction;
    - All hazardous materials should be stored in the appropriate manner to prevent contamination of the site and downstream environments. Any accidental chemical, fuel and oil spills that occur at the site should be cleared as appropriate for the nature of the spill;
    - Existing roads and farm tracks should be used where possible;
    - The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths;
    - No off-road driving should be permitted in areas not identified for clearing;
    - An Environmental Site Officer (ESO) must form part of the on-site team to ensure that the EMPr is implemented and enforced and an Environmental Control Officer (ECO)/ ESCO must be appointed to oversee the implementation activities and monitor compliance for the duration of the construction phase.

- Disturbance and Displacement of avifaunal Species of Conservation Concern
    - Infrastructure to avoid Avifaunal sensitive 'No Go' areas
    - Existing and novel access roads are to be suitably upgraded or constructed to prevent damage and erosion resulting from increased vehicular traffic and construction vehicles;
    - No off-road driving in undesignated areas;
    - Speed limits (30km/h) should be strictly enforced on site to reduce unnecessary noise;
    - Construction camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate;
    - The movement of construction personnel should be restricted to the construction areas on the project site;
    - No dogs or cats other than those of the landowners should be allowed on site;
    - The appointed Environmental Officer must be trained to identify the avifaunal

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Species of Conservation Concern as well as the signs that indicate possible breeding by these species;

- The Environmental Site Control Officer (ESCO) must then, during audits/site visits, make a concerted effort to look out for such breeding activities of avifaunal Species of Conservation Concern (e.g. Black Harrier, cranes, bustards), and such efforts may include the training of construction staff (e.g. in Toolbox talks) to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species.

- Direct Avifauna Mortality
  - The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.
  - If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined), construction activities within 500m of the breeding site must cease, and an Avifaunal Specialist shall be appointed for further assessment of the situation and instruction on how to proceed.
    - Should a new nest be confirmed, within one day (24 hours) following its discovery the Developer and/or Avifaunal Specialist is required to inform BLSA and ORCT.
  - The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.
  - Appropriate (Eskom approved) Bird flight diverters (BFDs) to be affixed to the entire length of novel above-ground overhead power lines;
  - The type of bird flight diverter (BFD) and spacings of the BFDs must be optimised for Denham's Bustards and Blue Cranes in consultation with an avifauna specialist prior to their fitment;
  - Internal power lines must be buried, unless it is not ecologically, technically or financially feasible;
  - Fatalities of avifaunal Species of Conservation Concern are to be appropriately recorded and reported by the ESCO to the Developers and/or the Client and Avifaunal Specialist as soon as reasonably practicable after first being detected or observed on-site during operational monitoring whereby appropriate and/or feasible measures will be taken, as per the recommendation of the Avifaunal Specialist, if applicable. These reports must be made available to relevant stakeholders each quarter. Any fatality of avifaunal Species of Conservation Concern must be reported to BLSA and ORCT within 24 hours.
  - Maximum use of existing access road and servitudes;
  - No off-road driving in undesignated areas;
  - Speed limits (30 km/h) should be strictly enforced on site to reduce probability of vehicle collisions;
  - The movement of construction personnel should be restricted to the

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

construction areas on the project site;
- No dogs or cats other than those of the landowners should be allowed on site;
- Any holes dug e.g. for foundations should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter;
- If double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences;
- Temporary fencing must be suitably constructed, e.g. if double layers of fencing are required for security purposes they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences;
- Roadkill is to be reported to the ECO and removed as soon as possible.
- The installation of cattle grids should be done in such a manner as to allow the escape of chicks should they fall in;

4.2.34 Bat Mitigation Measures

Objectives: To aid in the conservation of bats

Targets: To ensure compliance with the local authority and national statutory requirements relating to conservation and management of bats.

Measures:

- The placement of turbines within areas identified as having a High Bat Sensitivity is to be avoided.
- The height of the lower blade swept height must be maximised, and should not be lower than 50m if possible, to minimise collisions with low flying species.
- Laydown areas and temporary access roads must be kept to a minimum in order to limit direct vegetation loss and habitat fragmentation. Construction should, where possible, be situated in areas that are already disturbed.
- The removal of vegetation, particularly trees, must be kept to a minimum, and should also not occur in the no-go areas of the Bat sensitivity map.
- Following construction, rehabilitation of all disturbed areas (e.g. temporary access tracks and laydown areas) must be undertaken as per the habitat restoration plan, developed in conjunction with a botanical specialist (Annexure I).
- Implementation of real-time minimisation mitigation for bats through the initial use of four (04) Smart Systems (or similar) to automate Shut-Down on Demand and prevent collision by bat species when their level of activity is high
- Adaptive mitigation based on bat and avifauna fatality monitoring to manage the requirements for number of Bioseco and Smart System units, their locations and their thresholds (Smart System only) to allow for fatality minimisation to within acceptable limits

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.35 Visual Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to mitigate visual impacts to an acceptable level.

Targets: To ensure compliance with the local authority by laws, independent specialist recommendations and any other statutory requirements relating to Visual Management.

Measures:

- Construction camp and laydown areas to be adequately screened off.
- All the access roads to each wind turbine site, the temporary site camp and the permanent on-site substation must be aligned along existing roads as far as possible and in a pattern that fits the field configuration. No ad hoc short cuts. The reason is to reduce rapid surface water runoff which will likely cause erosion but importantly to conform to the visual pattern of the fields.
- All access roads will be planned, and no ad hoc or temporary short cuts will be permitted to be developed without approval of the Engineer's Representative (ER).
- Screen site camp with shade cloth on surrounding fence. To reduce the visibility of the internal clutter of the site, the fence must be clad with a neutral-coloured shade cloth or similar. The length of the fence that is covered will be determined by the position of the most sensitive receptor, for instance a road or homestead.
- The length of the site camp fence that is covered will be determined by the position of the most sensitive receptor, for instance a road or homestead.
- The limitation of dust generation is to be controlled preferably by using a dust binding emulsion that is sprayed over the entire road surface. An alternative is to spray the road surface with water at time intervals to ensure that dust does not become a visual intrusion, health hazard or crop growth retardant.
- Working hours will generally be restricted to daylight hours.
- If working hours are required outside of daylight hours, notification will be provided to relevant neighbours.
- If working hours are required outside of daylight hours, sufficient lightning plants will be provided.
- Security lights are directed from the perimeter wall towards the centre of the camp with a down angle.
- Keep the construction site neat and tidy at all times during the life of the project.
- Locate the construction camp(s) inconspicuously in the landscape to reduce visual impact severity.
- Keep signage and other infrastructure to a minimum.
- Minimise new road construction and existing roads where possible.
- Minimise night lighting of the construction sites within requirements of safety and efficiency.
- Contain and store general and construction related waste, upon approval by the PM, as prescribed by relevant specifications.
- Maintain good housekeeping on site to avoid litter and minimise waste.
- Ensure that any lighting installed on site for his activities does not interfere with road traffic or cause an unreasonable disturbance to the surrounding community.
- The site perimeter shall be fenced with robust material and be at least 2m high.
- No advertising will take place on the turbine structures.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.2.36 Topsoil Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage topsoil storage.

Targets: To ensure compliance with the local authority by laws, independent specialist recommendations and any other statutory requirements relating to Topsoil Management.

Measures

- Topsoil can only be stripped from areas as indicated below:
  - Any area which is to be used for temporary storage of materials
  - Areas which could be polluted by any aspect of the construction activity
  - Areas designated for the dumping / stockpiling of soil
  - or as instructed by the Customer's Representative or ECO/ESCO.
- Where topsoil (300 mm) stripping forms part of the contract requirement the Contractor will store the excavated topsoil in an appropriate windrow or stockpile which shall be discernibly separate from wind rows or stockpiles of any other excavated materials, for future rehabilitation after decommissioning.
- Subsoil can be used – if suitable – for road construction.
- Stripping of topsoil will be undertaken in such a manner as to minimize erosion by wind or runoff.
- Topsoil shall not be disturbed more than is absolutely necessary.
- Topsoil stripping will only take place as the area becomes necessary for works to commence.
- Topsoil will not be contaminated with anything that might impair its plant-support capacity (e.g. aggregate, cement, concrete, fuels, litter, oils, domestic and industrial waste).
- Topsoil stockpiles will not be situated such that they obstruct natural water pathways.
- Stockpiles will not exceed 2m in height.
- Stockpiles will be kept clear of weeds and alien vegetation growth by regular weeding.
- After the completion of the backfilling, re-contouring and erosion control works, the Contractor shall spread the topsoil evenly at uniform depth over the areas from which it was removed, where this is a requirement of the contract specifications.

4.2.37 Agricultural Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage agriculture impacts on site

Targets: To ensure compliance with the local authority by laws, independent specialist recommendations and any other statutory requirements relating to agricultural management
Measures:

- All construction activities (i.e. vehicle movement) in cultivated fields should be minimised and contained within clearly demarcated areas.
- Ensure that as much as possible of the planned infrastructure be confined to transformed land, or non-arable areas.
- Ensure that use is made of existing roads, servitudes etc where at all possible.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Topsoil (300 mm) should be stored at an appropriate site on each farm for future rehabilitation after decommissioning.
- Subsoil can be used – if suitable – for road construction.

- It is the responsibility of the owner of the renewable energy project to ensure that suitable soil conservation works be established on the site to limit or restrict the loss of soil.
- No renewable energy structure, supporting infrastructure or access routes shall in any manner divert any run-off water from a water course to any other water course or obstruct the natural flow pattern of runoff water, except with the permission from DAFF.
- All access routes, existing or newly constructed and utilised during the construction and / or maintenance of the renewable energy structures must be restored to its original state after completion of the establishment of the structures. Every care must be taken not to damage or degrade the status of the natural resources base of the farm during the construction phase of the mentioned or to impact negatively on the farming or production practices on the farm.
- All service routes that will be used to gain access to the renewable energy structures for maintenance purposes have to be covered in gravel, tarred or compressed in order to limit the possibility of degradation and erosion.
- The installation of the underground power cables should not negatively impact on the resource base of the site. During the installation, no soil conservation structure may be disturbed, the soil texture must be restored, the work area should not be wider than 5m, should not be directed through existing or future cultivated land nor impact negatively on existing farming infrastructure or any farming activity.
- The lease agreement must be transferred to the new landowner, should the farmer decide to sell the property during the time period of the current lease agreement. DAFF needs to be informed of the transfer of the lease agreement upon which a new approval number will be issued. Supporting documentation must be provided that the new landowner concurs with the specifications of the existing lease agreement.
- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.3 OPERATIONAL PHASE IMPACTS

4.3.1 Hazardous Material (Fuels, Oils and Others) Management

Objective: To minimise any hazardous fuel and oil material from causing environmental damage through the use, storage and/or handling of such hazardous material during the operational phase

Targets: To ensure compliance with all legal requirements, including local authority by laws and other statutory requirements relating to hazardous materials.

Measures:

- Fuel may be stored on site in an area which was been approved by an Engineer and the ECO/ESCO.
- The Contractor shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are firmly shut and/or in bowsers.
- The tanks or bowsers are required to be located on smooth impermeable surfaces (concrete or plastic) with an earth bund.
- The impermeable lining shall extend to the crest of the bund and the volume of the bund will be 130% of the total of the storage tanks and/or bowsers located on the site.
- The bunded area is required to be sheltered from the rain.
- Provisions shall be made for refuelling at the fuel storage area, by protecting the open soil with bunding.
- If fuel will be dispensed from 200 litre drums, only empty clean drums will be able to be stored on the bare ground.
- All empty dirty drums must be stored on a bunded area.
- Should the use of a 200l drum be required, proper dispensing mechanisms are required to be used and the drum will not be allowed to be tipped in order to dispense the fuel.
- The dispensing mechanism for the fuel drums will be stored in a waterproof container when it is not in use.
- The Contractor will be required to prevent unauthorised access to the fuel storage area.
- No smoking will be allowed within the vicinity of the fuel storage areas.
- The Contractor must ensure that adequate fire-fighting equipment is readily available at the fuel storage area.
- Where reasonably practical the plant shall be refuelled at the fuel storage area or at the workshop as applicable. If it is not possible then the surface under the refuelling area must be bunded with plastic and/or wooden pallets.
- The Contractor is required to ensure that absorbent materials are readily available in the vicinity of the refuelling areas to absorb and/or breakdown and where possible be designed to encapsulate minor hydrocarbon spills.
- This absorbent material must be able to absorb a minimum spill of 200l of hydrocarbons.
- The Contractor must obtain the Engineer's and ECO/ESCO's approval for any refuelling or maintenance activities.
- All hazardous material containers are required to be inspected regularly to ensure that no leaks occur.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Damaged solar panels are classified as hazardous waste and must be stored in a covered, impermeable area. These panels must be returned to the supplier for repairs or recycling or supplied to a licensed recycling facility or licensed hazardous waste disposal facility where no recycling or re-use is possible.
- The storage of general waste in excess of 100m³ and/ or the storage of hazardous waste in excess of 80m³, excluding the storage of waste in lagoons or the temporary storage (i.e. less than 90 days) of such waste, requires the applicant to comply with GN No. 926 of 29 November 2013: National Norms and Standards for the Storage of Waste.
- Hazardous materials (if any) which may be generated during the operation phase must be disposed of at approved hazardous waste landfill site.
- The Proponent or Contractor acting on his behalf shall ensure that an emergency preparedness plan is in place for implementation in the case of a spill.

4.3.2 Solid waste management

Objective: Adequate solid waste management on site

Measures:

During the operation phase, the area of the development must be cleared of litter on a regular basis. Once collected, this litter shall be disposed of at an approved waste disposal site.

4.3.3 Wet Environments Management

Objectives: To ensure that the best practice is followed with regards to wet environments (rivers and wetlands), management and operations.

Targets: To ensure that the wet areas (rivers and wetlands) on site are not impacted during the operational phase of the facility.

Measures:

- Formalisation of road crossings over rivers and drainage lines using structures that minimise the alteration of flows (e.g. box culverts with a wide span).
- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.
- Ensure that roads that run through or adjacent to wetlands, if any, have multiple cross-drains, to prevent the concentration of flows into the wetlands at a limited number of points along the roads.
- The BESS must be regularly inspected for leak or spillage.

4.3.4 Stormwater and Erosion Management

Objectives: To ensure that erosion and storm water are controlled and managed.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to management of storm water and erosion.

- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.

- Monitoring of the site be carried out, both during and after construction, to identify potential impacts on the natural systems as a result of altered flow patterns. It is proposed that features on site be monitored after large storm events.
- The natural drainage lines, diversion channel and dam walls must be monitored for signs of erosion and scouring which may be brought about by alterations to the natural hydrological characteristics of the site in the post development scenario. Increased sediment loads entering the dams should also be monitored for in the post development scenario. In addition, the discharge points from the laydown and substation areas, as well as the areas under and around the PV panels must be monitored for signs of concentrated flows and erosion.
- The road network must be monitored regularly to determine areas where stormwater may be concentrated or diverted which may lead to erosion. In addition, the crossing points at the drainage features must be monitored for signs of erosion.
- Should signs of erosion and alterations to the natural flow patterns be identified, a suitably qualified engineer must be appointed to design appropriate interventions to address the issues as they arise.
- The various protective measures that were installed during the construction phase must be properly maintained, e.g. the vegetation of road verges and cut faces must be inspected and maintained on a regular basis.

Please refer to Annexure K for the Stormwater Management Plan

4.3.5 Access and Signage

Objectives: Access control and signage on site

Measures:

- All access requirements must be identified and detailed by the Contractor. Communities, landowners and/or developers within the turbine site will be required to apply for access to the Operator. The Operator must consider each application and consult with each applicant in this regard.

- Avoid signs near wind turbines unless they serve to inform the public about wind turbines and their function. Advertising billboards must be avoided.

4.3.6 Maintenance

Objectives: Adequate maintenance on site

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Measures:

- The components of the turbines and associated infrastructure shall be maintained so in a good working order so as to minimise impacts associated with the malfunctioning of a wind turbine.
- Scheduled repairs must be carried out during daylight working hours during the working week.
- Road maintenance must be conducted on the service roads within and around the development site by the Developer as and when necessary.
- Spinning rotor is perceived as being useful but stationary rotor when the wind is blowing is seen as not fulfilling its purpose and a negative impression is created.

4.3.7 Flora and Fauna Management

Objectives: To aid in the conservation of floral and fauna habitat, biodiversity and protected floral species within the subject property

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to natural environment management.

Measures:

- All maintenance and operations staff should undergo environmental training which highlights the sensitive features of the site and the major risks posed by the development such as unplanned fires.
- Any vegetation management which occurs as part of operational and maintenance activities at the site, should ensure that listed plant species are not impacted.
- On-site lighting must be kept to a minimum, with only lighting essential for operation of the facility.
- Where necessity, such as for security purposes, only lighting with a low attractiveness for insects should be used. These include low-pressure sodium and warm white LED lights. High pressure sodium and white mercury lighting should not be used as far as possible.
- Lighting should be fitted with movement sensors to limit illumination and light spill, and the overall lit time. In addition, the spread of light should be directed downward (below the horizontal plane) to minimise light trespass and sky glow.
- Spacing between lights, and the height of light units, should be maximised where possible to reduce the intensity and volume of the light, and to minimise the area illuminated.
- All hazardous materials must be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site must be cleaned up in the appropriate manner as related to the nature of the spill.
- No unauthorized persons are to be allowed onto the site.
- All maintenance vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.
- Regular maintenance of erosion control features at the site, not only on the roads themselves but also in those areas which receive runoff from the roads and other hardened surfaces of the facility.
- Regular monitoring for erosion after construction to ensure that no erosion problems have developed as result of the disturbance. All erosion problems observed must be rectified as

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

soon as possible, using the appropriate erosion control structures and revegetation techniques.

- Regular monitoring for alien plants within the site as a whole and not just within the development footprint.
- Regular alien clearing must be conducted using the best-practice methods for the species concerned. The use of herbicides must be avoided as far as possible.
- Alien management plan must be developed as part of the EMPr for the development, it should aim to address alien plant problems within the whole site, not just the development footprint.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.

Please refer to Annexure M for the Revegetation &Habitat Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

4.3.8 Heritage Resource Management

Objectives: To aid in the conservation of heritage (including archaeological) resources and promote the enhancement and good management of such features on site.

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of such resources.

Measures:

- Should any archaeological or cultural heritage resources as defined and protected by the NHRA 1999 and not reported on in this report be identified during the course of operation, it must be reported to Heritage Western Cape.
- If human remains are encountered during operational or maintenance actives, they must left in place and nothing removed, the area must be cordoned off and the project archaeologist informed, HWC and the South African Police Services must be notified and, if exhumation is required, a permit must first be obtained from HWC.

4.3.9 Avifaunal No-Net Loss

Objectives: To identify and mitigate any losses of avifaunal Species of Conservation Concern occurring as a direct result of the facility's operations.

Targets: 'No-net Loss' of avifaunal Species of Conservation Concern in connection with the facility's operations.

Measures:

- Implement the avifauna mitigation measures as stipulated in this EMPr as a key component of the No-Net Loss of avifaunal Species of Conservation Concern approach.
- Should any fatalities of avifaunal Species of Conservation Concern occur within the facility boundaries then the Avifaunal Specialist shall investigate the likely cause of such fatalities and evaluate whether the avifauna mitigation measures stipulated in this EMPr should be adjusted (with input from the Developer) or if some other mechanism is feasible eg an Offset Programme (designed by an Avifaunal Specialist).

4.3.10 Avifaunal Management

Objectives: To aid in the conservation of avifauna and ensure no net loss of Species of Conservation Concern (Black Harrier and Verreaux's Eagle).

Targets: No net loss of Species of Conservation Concern (Black Harrier and Verreaux's Eagle).

Measures:

- A Three-tiered mitigation approach will be implemented on site comprising blade painting, Observer-Led Shut Down On Demand (OLSDOD) and Automated Shut Down On Demand (ASDOD) during daylight hours, seven days a week, including public holidays from the moment blades are turning.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- Results comparing the effectiveness of OLSDOD and ASDOD will be assessed annually for the three (03) years of the operational phase of the WEF and systematically adjusted by the qualified and appropriately experienced Avifaunal Specialist appointed to the Project and made available to BLSA, ORCT and EWT prior to adjustments, if any, being made. The Client reserves the right to reduce tiers of mitigations as determined and advised by an Avifaunal Specialist, in consultation with BLSA and ORCT.
- The Developers will install and implement automated shutdown on demand (ASDOD) technologies, in addition to other mitigation measures identified, to be operational from the date each such turbine firsts starts operation. The Developers will determine the most suitable ASDOD technology for the species of concern on the site in consultation with qualified service providers, including an Avifaunal Specialist. The turbines on which ASDOD technology will be installed are identified in this section of the EMPr.
- The Developers will consult with BLSA and ORCT regarding the proposed ASDOD technology that will be implemented on the project turbines.
- All contractors are to adhere to the environmental management programme and should apply good environmental practice during all operations;
- A livestock carcass management plan to be implemented in collaboration with other operational WEFs (where possible) to reduce the likelihood of attracting vultures
- Livestock carcasses must be removed or covered within 8 hours of being located.
- Surveys for breeding avifaunal Species of Conservation during the correct breeding season must be undertaken by appropriately trained/experienced people. This includes monitoring of the known SCC nest sites in close proximity to the WEF.
- Operational phase bird monitoring and reporting in line with the latest available guidelines, must be implemented for the lifespan of the facility due to the risk of significant impacts.

- Direct mortality of avifaunal Species of Conservation Concern:
  - Fatalities of avifaunal Species of Conservation Concern are to be appropriately recorded and reported by the ESCO to the Avifaunal Specialist, the Developers and/or the Client as soon as reasonably practicable after first being detected or observed on-site during operational monitoring whereby appropriate and/or feasible measures will be taken, in consultation with an Avifaunal Specialist, if applicable. These reports must be made available to relevant stakeholders on quarterly basis (within 15 days of the completion of monitoring).
  - Any Black Harrier fatalities are to be reported to the ORCT within 24 hours.

- Monitoring:
  - Prior to operations, an OLSDOD monitoring programme is to be designed and established for the project and is required to be included in the avifaunal monitoring programme established for the project. The OLSDOD programme is to be developed by an Avifaunal Specialist, in collaboration with the Applicant.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

The purpose of the OLSDOD is to ensure that the ASDOD is working efficiently and to assist in the mitigation of risk and impact to the Avifauna on site.

- As a **first-tier of mitigation**, all 24 WTGs will be manufactured with one painted (or patterned) blade to increase the visibility for birds.
- The Developers will consult with the ORCT and BLSA (including with reference to any guidance from the South Africa Wind Energy Association) regarding the blade painting required terms of the EA that is in accordance with the best available Science and the South Africa Civil Aviation Authority (CAA) requirements.
    - The Developer will determine the appropriate blade patterning based on South Africa Civil Aviation Authority's (SACAA) requirements. The best applicable patterning is it to be presented and discussed with BLSA, ORCT and the South African Wind Energy Association.
- Standard aviation stripes will not be implemented on the Project turbines as a means of satisfying the blade painting specifications required from an avifaunal mitigation perspective.
- A system of Shutdown on Demand (SDoD) should be implemented for all turbines at the WEF, modelled on the system which is currently operational at the nearby Excelsior Wind Farm.
- WTGs 4, 5, 9 and 13 are to be fitted with ASDOD technology as a means of **second-tier mitigation,** and enables detection of an approaching bird where it is required for a turbine to automatically shut down (or drastically reducing the speed of) the spinning turbine blade that will enable the approaching bird to travel through the wind farm safely. WTGs 4,5,9 and 13 were selected by the avifaunal specialist as these are closest to the avifauna No-Go areas. This technology should be used on a year-round basis.
- OLSDOD will be implemented during daylight hours for at least the first 12 months of operation on WTG 4, 5, 9 and 13 including on weekends and public holidays.
- The Developers will notify BLSA and EWT should any collisions with a Black Harrier and Verreaux's Eagle occur, and if the monitoring data generated during the first 12-month period indicates that the ASDOD systems proves unsuitable for smaller avifaunal Species of Conservation Concern (Black Harriers), the possibility of implementing additional management or mitigation measures shall be assessed and investigated by the Developers together with an Avifaunal Specialist. Based on the monitoring data, the possibility of implementing an additional tier of mitigation (including the possibility of ASDOD on additional turbines or a suitable habitat and conservation mechanism) will be assessed by the Developers at the relevant time, if required, in response to the aforesaid monitoring data.
- The Developers will employ an Avifaunal Specialist for nest surveying and monitoring of the Project site in accordance with applicable guidelines.
- Should it become apparent that avifaunal Species of Conservation Concern (e.g. Black Harrier and Martial Eagle) are utilising the site for breeding at any time during the operational lifespan of the development, WTGs within at least 2 km

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

of nest positions will be required to have an additional tier of mitigation. The appointed Avifaunal Specialist is to be notified to determine the appropriate additional mitigation measures, this will include i) additional observer- led shut-down-on-demand if it is not already in place, or ii) temporary curtailment during daylight hours during the breeding period or other high-risk periods, as per local specialist studies.

- If any new breeding location for avifaunal Species of Conservation Concern are confirmed (e.g. if a nest site is found which has not yet already been determined) the Avifaunal Specialist is to be appointed for further assessment of the situation and instruction on how to proceed, and BLSA, HWI and ORCT are to be notified within 24 hours.
- The results following the outcome of the assessment provided by the Avifaunal Specialist may inform the final construction schedule in close proximity to the specific nest location / breeding area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated construction noise disturbance as far as reasonably practicable.

- Develop and implement an avifaunal carcass search and activity monitoring programme for Species of Conservation Concern to be conducted for the lifespan of the facility in-line with the latest applicable guidelines (recognising that the intensity of monitoring required could be adapted (increasing or decreasing in intensity) in future based on the recommendations of an Avifaunal Specialist (e.g.. for example by adjusting monitoring frequency and spacing of transects) having due regard to the efficacy and cost implications of the monitoring);
- Reviews of operational phase monitoring data (activity and carcass) and results to be conducted and reported on by the Avifaunal Specialist for the Project who will then make recommendations regarding the intensity and duration of the monitoring programme. Monitoring report(s) can be made available to stakeholders upon request provided that the reports shall be made available to BLSA, HWI, EWT and/or ORCT.
- The frequency of the review of operational phase monitoring data is to be determined by the Avifaunal Specialist, and will be conducted in accordance with the applicable guidelines and regulations at the time;
- The above reviews should strive to identify sensitive locations including WTGs and areas of increased collisions that may require additional mitigation;
- Funding should be made available to contribute to further ongoing research on the Potberg Cape Vulture Colony and Black Harrier by recognised institutions/ organisations through consultation with those institutions/organisations already involved in these activities.
- Bird Flight Diverters to be checked at least once a year and if necessary replaced when required.

4.3.11 Bat Management

Objectives: To aid in the conservation of bats

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Targets: To ensure compliance with the local authority by laws, and any other statutory requirements relating to management of bats.

Measures:

- Monitoring of Bat Mortalities (morning searches) as part of the bird monitoring process.
- Any retrieved carcasses should be sent frozen to bat specialists for analysis, together with the circumstances of their finding.
- Apply blade feathering to prevent unnecessary free-wheeling of blades below generation cut-in speed at operation commencement.
    - Curtailment is an operational phase mitigation measure that can be implemented to lessen bat mortalities caused by direct collisions with turbine blades. Curtailment is the practice of maintaining the turbine blades as stationary or 'locked' at low wind speeds, and once the wind exceeds a specified speed the blades are then allowed to rotate normally. The theory behind curtailment is that there exists a negative correlation between bat activity and wind speed, causing bat activity to decline as wind speed increases. Another strategy involved altering blade angles to reduce rotor speed in low wind speed conditions, such that the blades were near motionless.
- On-site lighting must be kept to a minimum, with only lighting essential for operation of the facility.
- Where necessity, only lighting with a low attractiveness for insects should be used. These include low-pressure sodium and warm white LED lights. High pressure sodium and white mercury lighting should not be used as far as possible.
- Lighting should be fitted with movement sensors to limit illumination and light spill, and the overall lit time. In addition, the spread of light should be directed downward (below the horizontal plane) to minimise light trespass and sky glow.
- Spacing between lights, and the height of light units, should be maximised where possible to reduce the intensity and volume of the light, and to minimise the area illuminated.
- Bats must be prevented from entering any possible artificial roost structures (e.g. roofs of buildings, road culverts and wind turbines) by ensuring that they are sealed in such a way as to prevent bats from entering.
- If bats colonise Wind Farm infrastructure, a suitably qualified bat specialist must be consulted before any work is undertaken on that infrastructure or attempting to remove bats.
- Ongoing maintenance and inspections of buildings and road culverts must be carried out to ensure access by bats is prevented and for the safe handling of actively roosting bats.
- Operational acoustic monitoring and carcass searches for bats must be performed, based on best practice, to monitor mortality and bat activity levels.
    - An Independent Bat Specialist must provide input into the design and implementation of the Bat monitoring programme.
    - Operational monitoring must be done for the first two years initially according to the guidelines. Depending on these findings, additional monitoring may be needed but must be determined by an appropriate bat specialist using the operational data. Thereafter, a year of impact monitoring is required in the fifth year of operation and every five years after that. Acoustic monitoring should include monitoring at height (from more than one location i.e. such as on turbines) and at ground level.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

    - Apply curtailment based on a curtailment plan formulated by an appropriate bat specialist using weather and bat activity data from the site if mortality occurs beyond threshold levels (i.e. 141 bats) as determined based on applicable guidance (MacEwan et al. 2018). The threshold calculations must be done at a minimum of once a quarter (i.e. not only after the first year of operational monitoring) so that mitigation can be applied as quickly as possible should thresholds be reached.
- A further mitigation measures involves the use of ultrasonic deterrent devices to repel bats from wind turbines.
- Implementation of real-time minimisation mitigation for bats through the initial use of four (4) Smart Systems (or similar) to automate Shut-Down on Demand and prevent collision by bat species when their level of activity is high. The Smart Systems are recommended to be installed on WTGs 04, 05, 16 and 24.
- Adaptive mitigation based on bat and avifauna fatality monitoring to manage the requirements for number of Bioseco and Smart System units, their locations and their thresholds (Smart System only) to allow for fatality minimisation to within acceptable limits

4.3.12 Visual Management:

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to mitigate visual impacts to an acceptable level.
Targets: To ensure compliance with the local authority by laws, independent specialist recommendations and any other statutory requirements relating to Visual Management.

Measures:

- On-going light spillage control during operation of the WEF.
- Use low key lighting around buildings and operational areas that is triggered only when people are present.
- Plan to utilise infra-red security systems or motion sensor triggered security lighting.
- Ensure that lighting is focused on the development with no light spillage outside the site; and
- Keep lighting low, no tall mast lighting should be used.
- Monitor homesteads for the effects of shadow flicker through regular discussion with residents over a minimum period of 12 months.
- Should shadow flicker be reported ensure that the turbine / turbines causing the shadow flicker is / are programmed to turn off during the periods when shadow flicker is reported.
- No advertising will take place on the turbine structures.

4.3.13 Agricultural Management

Objectives: To ensure that appropriate and efficient measures are put in place on site in order to manage agriculture impacts on site

Targets: To ensure compliance with the local authority by laws, independent specialist recommendations and any other statutory requirements relating to agricultural management
Measures:

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The implementation of a sloped turbine foundation rather than a flat surface is preferred, to assist soil water drainage after decommissioning.
- The establishment of a ground cover (vegetation) on disturbed land soon after construction is essential to reduce the risk of water erosion. Sowing of oats at the onset of the winter rainfall is suggested.

4.3.14 Noise Management

Objectives: To control and reduce noise impact during the WEF operation
Measures

- To address wind turbine mechanical noise, all turbines should have acoustic insulation on the inside of the turbine housing, acoustic insulation curtains and ant-vibration support footing.
- Cyclic maintenance programme of the wind turbines should take place to address normal wear and tear problems.
- Turbines must be withdrawn from services should it create excessive noise due to wear and tear or poor maintenance.
- Service vehicles to adhere to the speed limits at all times.
- Maintenance Equipment to comply with the IFCs Health and safety requirements.
- Design and implement a noise monitoring programme, as indicated below:
    - Monthly noise monitoring conducted by an Acoustic Consultant or Approved Noise Inspection must commence as soon as the Wind Energy Facility becomes operational.
    - As soon as the noise monitoring results are stable, the frequency of monitoring can be reduced to quarterly noise surveys.
    - The following noise results must be kept on record:
        - Leq – values of each measuring point in dBA;
        - Spectrum analysis of the results;
        - Any physical characteristics in and next to the measuring points which may change the noise regime of the area;
        - Any other details such as the instrument, competent person etc. will be compiled and made available.

4.3.15 Emergency Management

Objectives: To ensure that an appropriate and efficient response is triggered in the event of an emergency situation arising. This should include incidents such as medical, fire, security and environmental disaster scenarios on the site.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to emergency response.

Measures:

- The Proponent or Contractor acting on his behalf shall compile and maintain environmental emergency procedures during the operational phase of the project to ensure that there will be an appropriate response to unexpected or accidental environment-related incidents, e.g. during routine maintenance and servicing.
- An environmental emergency procedure plan should include:

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- A list of key personnel, including responsibilities, accountability and liability.
- Details of emergency services applicable to the various areas along the route that the turbine components will need to be transported as well as for the site itself.
- Internal and external communication plans, including prescribed reporting procedures where required by legislation.
- Actions to be taken in the event of different types of emergencies.
- Incident management plans for the site. Incident recording, progress reporting and remediation measures required to be implemented.
- Information on hazardous materials, including the potential impact associated with each and measures to be taken in the event of accidental release.
- Firefighting strategy.
- Training plans and testing exercises and schedules for effectiveness.

4.3.16 Fire Management

Objectives: To ensure that fire as a result of the operational activities are controlled and managed appropriately.

Targets: To ensure compliance with the local authority by laws and any other statutory requirements relating to fire management. Please refer to Appendix E for fire management plan.

Measures

- The Applicant must maintain the 30-meter fire break.
- The 30-meter fire break must be kept clear of any vegetation throughout the lifecycle of the WEF.
- Weekly checks of the 30-meter firebreak must be undertaken during the operational phase of the WEF, thus ensuring that this fire break is maintained correctly.
- During the dry season the fire break must be compacted and wetted when it is in use.
- The 30-m fire break must be brush cut.
- The 30-m fire break should have significant reduced fuel loads and the height of the vegetation must be kept as low as possible.
- Waste material from the fire break preparation must be disposed off into the veld approximately 5m above the fire break or removed completely from site – by cutting, chipping stacking or burning with the required permission.
- A line fire breaks to avoid no populations of rear or endangered species, sensitive habitats such as wetlands and highly erodible areas.
- No open fires will be allowed on site under any circumstances.
- No Smoking except in designated safe smoking areas which include cleared area with no combustible vegetation or materials and approved butt receptacles.
- The contractor shall take all reasonable & active steps to avoid increasing the risk of fire through their activities on Site.
- The contractor shall ensure that the basic firefighting equipment is to the satisfaction of the ECO/ESCO.
- The contractor shall take precautions when working with welding, “hot” work or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher and fire beaters immediately at hand and the use of welding curtains.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- The contractor is to provide the ECO/ESCO with a list of equipment and location of all firefighting equipment.
- The contractor to provide the ECO/ESCO with a list of names of designated firefighting teams.
- The contractor will ensure awareness of fire seasons, and particular controls required, by the posting of the daily FDI on notice boards.
- The contractor will provide relevant staff with firefighting training.
- The contractor will maintain vegetation to manageable levels in the project area.
- All site staff must know the fire drill procedure.

Please refer to Annexure L for the Fire Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

5 DECOMMISSIONING IMPACTS

Please note, that the Decommissioning Impacts are equivalent to those of the construction impacts because decommissioning will entail the same type of activities. Therefore, these have not been reproduced in this Section. Please kindly refer Section 4.2 for the Decommissioning Impacts.

Further decommissioning activities would need to be applied for in a separate Environmental Permitting Process as per the requirements of the Competent Authority.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

6 IMPLEMENTATION OF THE EMPR

6.1 ENTITY RESPONSIBLE FOR DEVELOPMENT OF THE PROJECT

Table 6.1: This table depicts the Project Administrative Details.

PROJECT ADMINISTRATION DETAILS	
DEVELOPMENT ENTITY	
Applicant Name (The proponent)	Western Cape Wind Farm (RF) (Pty) Ltd
Responsible Person	Matteo Giulio Luigi Maria Brambilla
Address	14th Floor, Pier Place Building Heerengracht Street Foreshore CAPE TOWN 8001
Contact Details	Tel: +27(0)72 212 1531 Email: m.logan@redrocket.energy

6.2 ROLES AND RESPONSIBILITIES

Formal responsibilities are necessary to ensure that key environmental management measures/procedures are executed. The Holder of the EA, will be responsible for the overall control of the facility during the pre-construction, construction, operation, decommissioning and rehabilitation phases of the project. The responsibilities will include the following:

1. Appointing an independent environmental control officer (ECO) for the duration of the Construction phase and to notify the DFFE of the ECOs qualifications and contact details;
2. Appointing and Environmental Site Compliance Officer (ESCO) for the duration of the construction phase of the project.
3. Understanding the EIA Report, the requirement of the conditions of the Environmental Authorisation (EA) and the EMPr;
4. Applying for an amendment of the EA from the DFFE in the event that the approved scope changes in line with the prevailing legislation;
5. Overall implementation of the EMPr;
6. Ensuring compliance, by all parties, and the imposition of penalties for non-compliance;
7. Implementing corrective and preventive actions, where required;
8. Preventing pollution and actions that will harm or may cause harm to the environment;
9. Ensuring the activity does not commence prior to issuance of the EA;
10. Notifying the DFFE within 14 days that construction activity will commence;
11. Notifying the DFFE in writing within 24 hours if any condition in the EA cannot be or is not adhered to;
12. Notifying the DFFE should minor changes to the layout be required (as confirmed by the ECO and ESCO);
13. Notifying the DFFE 14 days prior to commencement of the operational phase.

Throughout the lifespan of this project, several individuals and entities will fulfil various roles and responsibilities to ensure the effective implementation of this EMPr. The key roles and responsibilities are defined in the table below and the Organogram is presented Figure 6.1**.**

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

While the term ECO/ESCO is referenced in Specialist Reports, the ESCO is an independent function, reporting to the DFFE. The term used in this EMPr for the Permit Holder's onsite compliance management function is Environmental Site Compliance Officer (ESCO).

Table 6.2 Roles and Responsibilities regarding the implementation of the EMPr

RESPONSIBLE PERSON	RESPONSIBILITIES
Environmental Authority – Department of Forestry, Fisheries and the Environment.	Role: The Department of Forestry, Fisheries and the Environment (DFFE) is the Competent Authority responsible for compliance with the relevant environmental legislation, namely the National Environmental Management Act and other Specific Environmental Management Acts (SEMA's) Responsibilities: • Ensure overall compliance with the Environmental Authorisation (EA) & EMPr. • Review this document and any revisions thereof. • Undertake site audits at their discretion. • Review ECO Reports. • Review Audit Reports • Review Incident Reports. • Enforce legal mechanisms for contraventions of this EMPr and EA.
The Proponent - Holder of the EA - FE Overberg (RF) (Pty) Ltd	Role: The Proponent is ultimately responsible and legally liable for ensuring compliance with all statutory requirements relating to the facility. Responsibilities: • Be fully conversant with the BAR and Motivation Report the conditions of EA and the EMPr; • Be fully conversant with all relevant environmental legislation and ensure compliance thereof; • Approve method statements (co-approval with Site Manager); • Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; • Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and • Ensure that activities onsite comply with all relevant environmental legislation • Ensuring compliance with the conditions set out in the Environmental Authorisation issued in terms of the NEMA, as well as those prescribed by other relevant legislation and guidelines.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

RESPONSIBLE PERSON	RESPONSIBILITIES
	• Compliance with the requirements set out in this EMPr. • Ensuring all other permits, permissions and licences from all other statutory departments are in place.
Project Manager	Role: • The Employer's representative role is likely to be fulfilled by the project engineer and assumes overall delegated responsibility for compliance with this EMPr, the EA, the conditions of the Planning Approval, Conditions of the WULA and all applicable legislation for the duration of the construction phase. Responsibilities: • Issue site instructions to the contractor based on the advice of the ECO. • Ensure that all detailed design incorporates the requirements of the EMPr and EA. • Ensure that the EMPr is included in all tender documents issued to prospective contractors and sub-contractors. • Ensure the EMPr is included in final contract documents. • Ensure that the Tenderers/Contractors adequately provide for compliance with the EMPr in their submissions. • Ensure that the EMPr is fully implemented by the relevant persons. • Ensure the contractor provides the necessary method statements. • Be accountable, to the competent authority for any contravention or non-compliance by the Contractor. • Assist the contractor with input from the ECO in finding environmentally responsible solutions to problems. • Undertake regular site audits, site visits and inspections to ensure that the requirements of the EMPr are implemented • Give instructions on any procedures and corrective actions on advice from the ECO. • Report environmental incidents or non-compliance with the EA or EMPr to the environmental authority. • Issue spot fines, penalties or 'stop-work' orders for contravention of the EMPr and give instructions regarding corrective action.
Site Manager	• Be fully conversant with the BAR, the conditions of EA and the EMPr; • Approve method statements (co-approval with ESCO); • Provide support to the EO and ESCO; • Be fully conversant with all relevant environmental legislation and ensure compliance thereof;

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

RESPONSIBLE PERSON	RESPONSIBILITIES
	• Be responsible for the implementation of the EMPr and conditions of the EA; • Ensure that audits are conducted to monitor compliance to the EMPr and conditions of the EA; • Liaise with the Project Manager or his delegate, the ESCO and others on matters concerning the environment; • Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution and unnecessary degradation onsite; and • Confine construction activities to demarcated areas.
Environmental Officer (EO)	• The EO must be appointed by the Contractor and is responsible for managing the day-to-day onsite implementation of the EMPr, and for the compilation of weekly environmental monitoring reports. In addition, the EO must act as liaison and advisor on all environmental and related issues, seek advice from the ESCO and ESCO when necessary, and ensure that any complaints received from I&APs are duly processed and addressed and that conflicts are resolved in an acceptable manner and timely manner. The EO shall be a full-time dedicated member of the Contractor's team and must be approved by FE Overberg (RF) (Pty) Ltd . • The following qualifications, qualities and experience are recommended for the individual appointed as the EO: o A relevant environmental diploma or degree in natural sciences, as well as experience in construction site monitoring, excluding health and safety; o A level-headed and firm person with above-average communication and negotiating skills. The ability to handle and address conflict management situations will be an advantage; and o Relevant experience in environmental site management and EMPr compliance monitoring. • The EO's responsibilities include: o Monitoring, on a daily basis, environmental specifications on site and compliance with the conditions of the EA, environmental legislation and EMPr; o Keeping a register of compliance / non-compliance with the environmental specifications; o Identifying and assessing previously unforeseen, actual or potential impacts on the environment; o Ensuring that a brief weekly environmental monitoring report is submitted to the ESCO;

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

RESPONSIBLE PERSON	RESPONSIBILITIES
	○ Conducting site inspections during the defect's liability period, and bringing any environmental concerns to the attention of the ESCO and Contractor; ○ Advising the Contractor on the rectification of any pollution, contamination or damage to the construction site, rights of way and adjacent land; ○ Attending site meetings (scheduled and ad hoc); ○ Presenting the environmental awareness training course to all staff, Contractors and Sub contractors, and monitoring the environmental awareness training for all new personnel on-site, as undertaken by the Contractor; ○ Ensuring that a copy of the EA and the latest version of the EMPr are available on site at all times; ○ Ensuring that the Contractor is made aware of all applicable changes to the EMPr; ○ Assisting the Contractor in drafting environmental method statements and/or the Environmental Policy where such knowledge/expertise is lacking; ○ Undertaking daily environmental monitoring to ensure the Contractor's activities do not impact upon the receiving environment. Such monitoring shall include dust, noise and water monitoring; and ○ Maintaining the following on site: ▪ A weekly site diary. ▪ A non-conformance register (NCR). ▪ An I&AP communications register, and ▪ A register of audits. • The EO will remain Employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is handed over to the Holder of the EA.
Environmental Site Compliance Officer (ESCO)	Role: To assist the ECO with the day to day implementation and monitoring of the environmental management actions that are taking place on site. Responsibilities: • A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full time basis. • Responsibilities of the ESCO include: ○ Be fully conversant with the BAR, the conditions of EA and the EMPr; ○ Be fully conversant with all relevant environmental legislation and ensure compliance thereof; ○ Approve method statements (co-approval with Site Manager);

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

RESPONSIBLE PERSON	RESPONSIBILITIES
	○ Remain employed until the completion of the construction activities; and ○ Report to the Project Manager, including all findings identified onsite. • In addition, the ESCO will: ○ Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; ○ Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; ○ Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and • Ensure that activities onsite comply with all relevant environmental legislation. • Day to day environmental control of contractors on site during the construction phase. • Monitoring of construction management activities during the construction phase. ○ Weekly reporting to the ECO.
Environmental Control Officer (ECO)	Role: • The ECO fulfils an advisory role to monitor, guide and report compliance with the EMPr. Responsibilities: • A suitably qualified external ECO must be appointed by the Holder of the EA to audit the project compliance in terms of the EMPr and conditions of the EA on a monthly basis, during the construction phase, in line with Condition 21 of the EA. • The costs of the ECO shall be borne by the Holder of the EA (proof of appointment must be maintained onsite). • Revise, update and amend the EMPr if necessary and submit the amendments to the competent authority for consideration. • Ensure all relevant persons have a copy of the EMPr and any amendments thereof. • Advise the employer's representative on any additional environmental authorisations and permits that may be required. • Facilitate the Environmental Education / Induction Training with the contract staff.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

RESPONSIBLE PERSON	RESPONSIBILITIES
	• Review and comment on Method Statements relevant to environmental management and make recommendations to the employer's representative. • Report any non-compliance with the EMPr or EA to the employer's representative and competent authority if necessary. • Undertake regular site inspections in compliance with this EMPr. • Monitor, audit and verify that all works comply with the EA and the EMPr. • Keep record of EMPr implementation, monitoring and audits, including a full photographic record of works. • Comply and submit regular Environmental Control Reports to the competent authority, as well as employer's representative &/ holder of the authorisation. • Report any environmental incidents or environmental impacts immediately to the employer's representative and the competent authority if necessary. • Report any environmental incidents or environmental impacts immediately to the employer's representative and the competent authority if necessary. • Assist the contractor and employer's representative planning for and implementing environmentally sensitive problem solving. • Advise the employer's representative on suggested "stop work orders.
Contractors, Staff and Service Providers	• Complying with the Holder of the EA's environmental management specifications; • Be conversant with all EMPr and conditions of the EA, and ensure compliance thereto; and • Adhering to any environmental instructions issued by the Site Manager/Project Manager on the advice of the ESCO.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

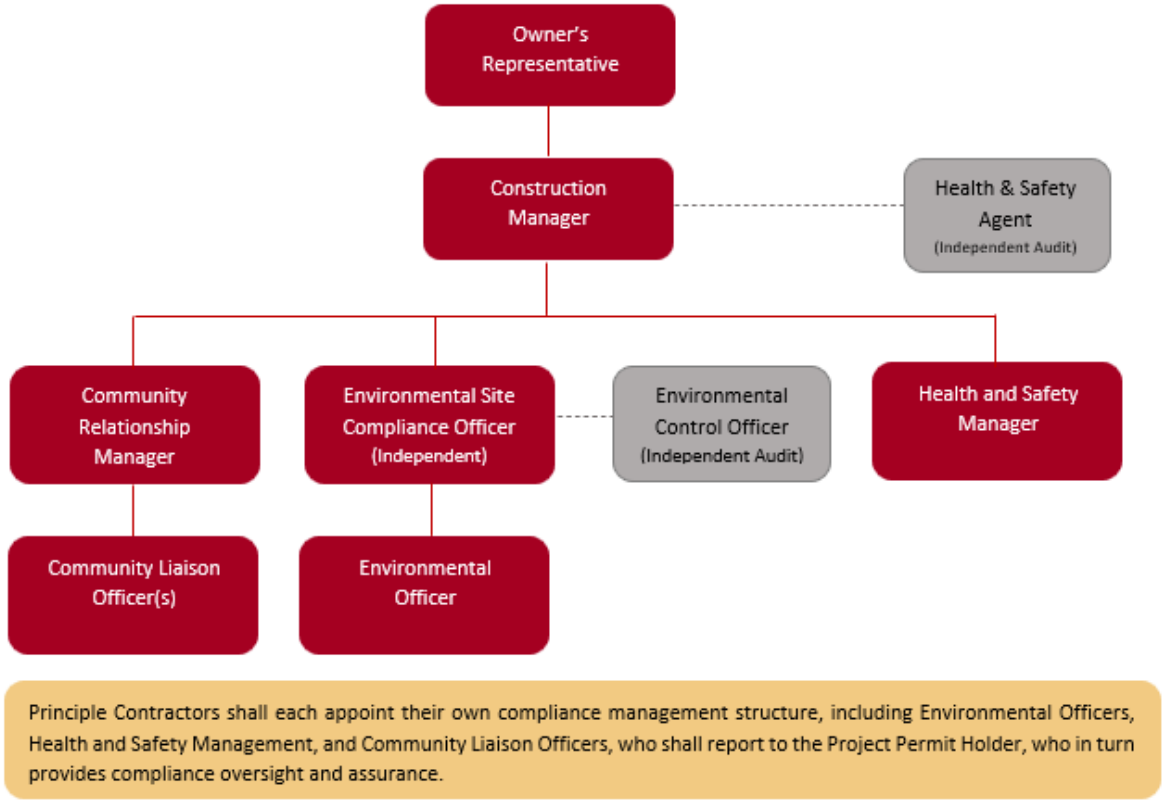


Figure 6.1. Holder of the EA Construction Phase management structure

6.3 AUDITING OF THE EA AND THE EMPR

Compliance with the Conditions of the EA and EMPr for the construction and post- construction monitoring phases must be monitored regularly by an independent environmental auditor. Compliance Reports must be submitted to the Competent Authority monthly (within 21 working days of the end of each month) for the duration of construction and quarterly (within 21 working days of the end of each quarter) for post construction operations.

The results of the audit must be recorded in an environmental audit report and any non-compliance must be formally recorded, along with the response-action required or undertaken. Each non-compliance incident report must be issued to the relevant person(s), so that the appropriate corrective and preventative action is taken within an agreed upon timeframe.

Appendix 7 of Regulation 982 of the 2014 EIA Regulations contains the required contents of an Environmental Audit Report. The table below shows the legislated requirements of an audit reports, and all relevant environmental audits undertaken as part of this development (during construction and operation) should comply with these requirements.

Table 6.3 Content of an Audit Report

1) An Environmental audit report prepared in terms of these Regulations must contain:
(a) Details of – (i) The independent person who prepared the environmental audit report; and (ii) The expertise of independent person that compiled the environmental audit report.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

(b) Details of – (i) The independent person who prepared the environmental audit report; and (ii) The expertise of independent person that compiled the environmental audit report.
(c) A declaration that the independent auditor is independent in a form as may be specified by the competent authority.
(d) An indication of the scope of, and the purpose for which, the environmental audit report was prepared.
(e) A description of the methodology adopted in preparing the environmental audit report.
(f) An indication of the ability of the EMPr, and where applicable the closure plan to – (i) Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis; (ii) Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and (iii) Ensure compliance with the provisions of environmental authorisation, EMPr, and where applicable, the closure plan.
(g) A description of any assumptions made, and any uncertainties or gaps in knowledge.
(h) A description of a consultation process that was undertaken during the course of carrying out the environmental audit report.
(i) A summary and copies of any comments that were received during any consultation process.
(j) Any other information requested by the competent authority.

6.4 FREQUENCY OF VISITS BY THE ECO/ESCO

1. The ESCO is required to be on site daily for the duration of the Project, unless the determined otherwise by the ECO, taking into consideration the performance and compliance of the Contractor on site and with the EMPR respectively.
2. An independent ECO will work along-side the ESCO to conduct the required inspections of the construction activities and EMPr implementation throughout the construction phase. After each monthly inspection, the ECO will produce a monitoring report that will be submitted to the Developer / Applicant, the DFFE, and any other person(s) if required. Relevant sections of the minutes of customary (monthly) site meetings will be attached to the monitoring report.
3. The ECO/ESCO should conduct on going Basic Environmental Awareness Training sessions with the Contractor, his staff and sub-contractors prior to any work taking place. The Contractors are required to provide a facility and interpreter (if required).
4. The ECO is responsible in ensuring that daily / weekly (depending on the extent of construction activities, at any given time) monitoring of site activities take place by the ESCO to ensure adherence to the specifications contained in the EMPr
5. An initial meeting with the ECO/ESCO, local authority representative, Principal Agent and Contractor must be held to familiarise each of the parties with each other, the site, the EMPr and to confirm communication methods.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

6. The frequency of subsequent meetings and ECO/ESCO visits must be agreed, depending on the performance of the Contractor. If required, the Principal Agent may introduce some form of penalty system if compliance with the EMPr proves problematic.
7. A brief summary of the findings and any recommendations made by the ECO/ESCO per visit must be emailed to all parties including the Principal Agent and Contractor. This report should also include photographs for additional information.

6.5 DOCUMENTED PROCEDURES

Method Statements (a template for these purposes is appended to this EMPr) will be required for activities that may result in significant impacts according to the ECO/ESCO.

These must address the following aspects:

- What – a brief description of the work to be undertaken
- How – a detailed description of the process of work, methods and materials
- Where – a description of the location of the work (if applicable)
- When – the sequencing of actions with commencement and completion date estimates

All Method Statements (MS) must be in place at least 5 working days prior to the relevant construction activities taking place and must be approved by the ECO/ESCO and Principal Agent prior to being implemented.

The following MS must as a minimum be made available to address the following construction related impacts:

- Erosion Management;
- Waste Management;
- Traffic Management; and
- Freshwater Management
- Road Management and construction

6.6 HANDLING OF COMPLAINTS RELATED TO THE PROJECT

A complaints or communication register must be developed and maintained by the EO and ECO/ESCO All forms of complaint must be forwarded to the EO and ECO/ESCO in writing. These must be entered into the environmental register and all responses and actions taken to address these must also be recorded. All issues raised must be addressed. It is important that the complainant feels that their concerns have been listened to and that appropriate action (within reason) has been taken to address these.

6.7 CONDUCT OF EMPLOYEES ON SITE

The following restrictions will be placed on all staff operating on the site in general:

- Adherence to relevant health and safety standards and municipal by laws
- Use of appropriate Personal Protective Equipment (PPE) at all times
- No alcohol or illegal substance use may occur on site

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

- No illegal disposal of rubble;
- No littering of the site or surrounding areas;
- No collection of firewood;
- No interference with any fauna or flora;
- No use of toilet facilities other than the chemical toilets provided on site;
- No lighting of open fires; and
- No burning of any waste on site.

6.8 MATTERS PERTAINING TO NON-CONFORMANCE ON SITE

"Non-conformances" would occur when there are deviations from any of the construction requirements of this EMPr. This may also include non-compliance with the relevant environmental regulations.

The Contractor is responsible for the implementation of the conditions stipulated in the EMPr on the site. The ECO/ESCO in collaboration with the Contractor's EO must undertake the following activities:

- The ECO/ESCO to investigate and identify the cause of non-conformances on the project site.
- The ECO/ESCO to report matters of non-conformance to the national Department of Environmental Affairs within a suitable timeframe, dependant on the severity of the incident.
- The EO to implement suitable corrective action as well as prevent recurrence of the problem.
- The EO to assign responsibility for corrective and preventative action.
- Any corrective action taken to eliminate the cause/s of non-conformance shall be appropriate to the magnitude of the problems and commensurate with the environmental impact encountered.

Records

The Contractor must maintain and update the environmental register at all times regarding non-conformance issues. The record shall specifically contain and list the instances of non-conformances found in the EMPr, the date of their occurrence, date of corrective action, and date of completion of preventive action. In addition, matters of non-conformance and corrective action must be included within the audit reports. Records must be are legible, identifiable, protected and easily retrieved for review.

Fine and Penalties relating to non-conformance/contraventions

The Contractor must comply with the environmental requirements of the construction phase requirements of this EMPr on an on-going basis and any failure on his part to do so will entitle the ECO/ESCO and Principal Agent to impose a fine subject to the details set out below. Money from fines/penalties will be managed and allocated at the discretion of the Principal Agent.

1) Spot fines

Spot fines will be issued per incident in addition to any remedial costs incurred as a result of non-conformance with the EMPr, at the discretion of the Principal Agent and ECO/ESCO. The ECO/ESCO may *recommend* the imposition of fines and penalties but the Principal Agent will be responsible for imposing such fines or penalties against the account of the Contractor. Fines may be imposed on the Contractor for contraventions of the EMPr by individuals or operators employed by the Contractor

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

and/or any sub-Contractors. The Principal Agent will inform the Contractor of the EMPr contravention and the amount of the fine. These monies will be recovered by the Principal Agent from the Contractor.

Failure by the Contractor to pay fines imposed by the Principal Agent within 14 days of the fine being imposed may result in a "Stop Works" order being issued by the Principal Agent until the matter is resolved. Any costs incurred as a result of the "Stop Works" order will be for the account of the Contractor.

The following spot fines are recommended for contraventions (plus any rehabilitation costs if applicable):

a) Any individual/s littering on site: R50 on first offence and R250 on further offences.
b) Any individual/s burning waste on site: R250 on first offence and R1 000 on further offences.
c) Any individual/s dumping waste on site: R250 on first offence and R1 000 on further offences.
d) Any violation of a Method Statement: R250 for first offence and R1 500 on further offences.
e) Any individual causing avoidable disturbance to fauna and flora on site: R250 on first offence and R1 000 on further offences.
    - This notably includes any presence, activity or disturbance of the Renosterveld remnants which must be treated as strict no-go areas.

2) Penalty fines

Penalty fines will be implemented where the Contractor repeatedly fails to comply with the specifications of this EMPr the Contractor will be liable to pay a penalty fine over and above any other contractual consequence.

The following penalty fines (per repeat offence) are recommended for transgressions:

a) Ongoing littering on site: R2 500 plus any rehabilitation costs, if applicable.
b) Ongoing dumping of any waste on site: R10 000 plus any rehabilitation costs, if applicable.
c) Ongoing burning of any waste on site: R10 000 plus any rehabilitation costs, if applicable.
d) Ongoing transgression of a Method Statement: R10 000 plus any rehabilitation costs, if applicable.
e) Ongoing disturbance to Fauna and Flora on site: R5 000 plus any rehabilitation costs, if applicable.
    - This notably includes any presence, activity or disturbance of the Renosterveld remnants which must be treated as strict no-go areas.

3) Other fines

a) Any individual/s causing damage to identified sensitive natural areas: R5 000 plus any rehabilitation costs.
    - This notably includes any disturbance or damage to the Renosterveld remnants which must be treated as strict no-go areas.
b) Any individual/s causing damage to identified sensitive heritage areas: R5 000 plus any rehabilitation costs.
c) Any individual/s causing irreparable damage to the environment: R10 000.
d) Injuring or killing of any wildlife: R5 000 plus any rehabilitation costs, if applicable.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

The above recommended fines are applicable and relevant to the construction phase of this EMPr and as such do not exempt the client from other legal obligations such as *Section 24(h)* National Environmental Management Second Amendment Act, Act No. 107 of 1998, which states that it is "*an offence for any person to contravene conditions applicable to any environmental authorization granted for a listed activity. A person convicted of an offence is liable to a fine not exceeding R5 million or to imprisonment for a period not exceeding ten years, or to both such fine and such imprisonment".*

An Environmental Management Programme constitutes a *Condition* applicable to an *Environmental Authorisation* and any transgression would thus trigger *Section 24(h)* of the above-mentioned Act. The exact penalty and fines will be decided on, subsequent to consultation with Competent Authority and the local municipality.

All staff working on-site must be made aware of the penalties and fines associated with non-conformance. The Principal Agent will be responsible for ensuring that the penalty system is maintained and enforced. Should disputes arise between the Client, Engineer, Contractor or ECO/ESCO with respect to the above then the matter will be referred to arbitration.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE A

GLOSSARY

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

TERMS USED IN THIS *EMP*

"Acceptable exposure" *means the exposure of the maximum permissible concentration of a substance to the environment that will have a minimal negative effect on health or the environment.*

"Agenda 21" *means the document by that name adopted at the United Nations Conference of Environment and Development held in Rio de Janeiro, Brazil in June 1992.*

"Agreement"*, for the purpose of NEMA EIA Regulations GNR 982 regulation 1(3) and (4) (of 2014) means the Agreement as contemplated in section 50A (2) of the Act;*

"Agri-industrial" *means an undertaking involving the beneficiation of agricultural produce.*

*"**Alternatives**", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to –*

(a) the property on which, or location where, the activity is proposed to be undertaken;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity; or
(e) the operational aspects of the activity;

And includes the option of not implementing the activity.

*"**Applicant**", means a person who has submitted or who intends to submit an application.*

"Application" *in terms of the NEMA EIA Regulations GNR 982 (2014) means an application for an –*

(a) Environmental authorisation in terms of Chapter 4 of these Regulations;
(b) Amendment to an environmental authorisation in terms of Chapter 5 of these Regulations;
(c) Amendment to an EMPr in terms of Chapter 5 of these Regulations; or
(d) Amendment of a closure plan in terms of Chapter 5 of these Regulations;

"Aquifer" *means a geological formation which has structures or textures that hold water or permit appreciable water movement through them*

"Aquatic critical biodiversity areas"*, means linkages between catchment, important rivers and sensitive estuaries whose safeguarding is critically required in order to meet biodiversity pattern and process thresholds and are spatially defined as part of a bioregional plan or systematic biodiversity plan, available on the South African National Biodiversity Institute's BGIS website (http://bgis.sanbi.org/WCBF14project.asp);*

"Associated structures, infrastructure and earthworks" *means any structures, infrastructure or earthworks, including borrow pits, that is necessary for the functioning of a facility activity;*

"Basic assessment report" *means a report contemplated in NEMA EIA Regulations GNR 982 regulation 19 (of 2014);*

"Best practicable environmental option" *means the Option that provides the most benefit or causes the least damage to the environment as a whole at a cost acceptable to society in the long term as well as in the short term*

"Biodiversity"*, this means the variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.*

"Bioregional plan" *means the bioregional plan contemplated in Chapter 3 of the National Environment Management Biodiversity Act, 2004 (Act No. 10 of 2004);*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"Borehole" *includes a well, excavation or my artificially constructed or improved underground cavity which can be used for the purpose of—*

(a) intercepting, collecting or storing water in or removing water from an aquifer;
(b) observing and collecting data and information on water in an aquifer; or
(c) recharging an aquifer;

"Buffer area" *means, unless specifically defined, an area extending 10 kilometres from the proclaimed boundary of a world heritage site or national park and 5 kilometres from the proclaimed boundary of a nature reserve, respectively, or that defined as such for a biosphere;*

"Building and demolition waste" *means waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition.*

"Business waste" *means waste that emanates from premises that are used wholly or mainly for commercial, retail, wholesale, entertainment or government administration purposes.*

"By-product" *means a substance that is produced as part of a process that is primarily intended to produce another substance or product and that has the characteristics of an equivalent virgin product or material.*

"Canal" *means an open structure that is lined or reinforced, for the conveying of a liquid or that serves as an artificial watercourse.*

"Catchment" *in relation to a watercourse or watercourses or part of a watercourse, means the area from which any rainfall will drain into the watercourse or watercourses or part of a watercourse, through surface flow to a common point or common points.*

"Channel" *means an excavated hollow bed for running water or an artificial underwater depression to make a water body navigable in a natural watercourse, river or the sea.*

"Clean production" *means the continuous application of integrated preventative environmental strategies to processes, products and services to increase overall efficiency and to reduce the impact of such processes, procedures and services on health and the environment.*

*The term '**client**' means the owner of the asset to be procured or project product, and representative of the end users of the asset.*

"Closure plan" *means a plan contemplated in NEMA EIA Regulations GNR 982 regulation 19 (of 2014);*

"Commence" *means the start of any physical activity, including site preparation or any other activity on the site in furtherance of" a waste management activity, but does not include any activity required for investigation or feasibility study purposes as long as such investigation or feasibility study does not constitute a waste management activity.*

"Commercially confidential information" *means commercial information the disclosure of which would prejudice to an unreasonable degree the commercial interests of the holder provided that details of emission levels and waste products must not be considered to be commercially confidential notwithstanding any provision of this Act or any other law.*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"Community" *means any group of persons or a part of such a group who share common interests and who regard themselves as a community.*

"Competent authority"*, means the authority who in terms of the provisions of the NEMA and the EIA Regulations GNR 982 (of 2014) is identified as the authority who must consider and decide on an application in respect of a Specific listed activity.*

> *Note: the "competent authority" in terms of an application for environmental authorisation for an Activity listed in listing notice 1, 2 or 3, is not necessarily the same authority as the "licensing Authority" in terms of the NEMA:WA or NEM: AQA.*

"Concentration of animals" *means the keeping of animals in a confined space or structure, including a feedlot, where they are fed in order to prepare them for slaughter or to produce products such as milk or eggs.*

"Conservation" *in relation to a water resource means the efficient use and saving of water, achieved through measures such as water saving devices, water-efficient processes, water demand management and water rationing.*

"Constitution" *means the Constitution of the Republic of South Africa 1996 (Act No. 108 of 1996).*

"Construction" *means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.*

*The term '**Contractor**' means an organisation that contracts with a Principal to carry out the work under the contract, including construction and related services, to deliver an asset or construction product.*

*The term '**consultant**' means a professional person or organisation that contracts with a customer to provide design, management or other services.*

"Container" *means a disposable or re-usable vessel in which waste is placed for the purposes of storing, accumulating, handling, transporting, treating or disposing of that waste, and includes bins, bin-liners and skips.*

"Contaminated" *means the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro-organism directly or indirectly affects or may affect the quality of soil or the environment adversely.*

"Cultural significance"*, this means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.*

"Cumulative impact"*, in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities;*

"Dam" *when used in the Listing Notice 1 GNR 983 and Listing Notice 2 GNR 984 Regulations means any barrier dam and any other form of impoundment used for the storage of water.*

"Dangerous goods" *means goods containing any of the substances as contemplated in South African National Standard No. 10234, supplement 2008 1.00: designated "List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)" published by Standards South Africa, and where the*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

presence of such goods, regardless of quantity, in a blend or mixture, causes such blend or mixture to have one or more of the characteristics listed in the Hazard Statements in section 4.2.3, namely physical hazards, health hazards or environmental hazards;

*"**Days**" means calendar days. Note: when a period of days must in terms of these regulations be reckoned from or after a particular Day, that period must be reckoned as from the start of the day following that particular day to the end of the last day of the period, but if the last day of the period falls on a Saturday, Sunday or public holiday, that period must be extended to the end of the next day which is not a Saturday, Sunday or public holiday. The period of 15 December to 2 January must be excluded.*
In the reckoning of days, where a timeframe is affected by the 15 December to 2 January period, the timeframe must be extended by the number of days falling within the 15 December to 2 January period. Where a timeframe is affected by one or more public holidays, the timeframe must be extended by the number of public holiday days falling within that timeframe.

***"Decommissioning"** means to take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned.*

*"**Department**", means the Western Cape department of environmental affairs and development planning;*

***"Derelict land"** means abandoned land or property where the lawful/legal land use right has not been exercised during the preceding ten-year period.*

*The term **'design'** means the process (and product) of converting a brief into design details ready for documentation, including concept design and design development, and then documentation or detailing of the technical and other requirements for the project in a written form that details the project product sufficiently for it to be constructed or otherwise provided.*

***"Development"** means the building, erection, construction or establishment of a facility, structure of infrastructure, including associated earthworks or borrow pits, that is necessary for the undertaking of a listed or specified activity, including any associated post development monitoring, but excludes any modification, alteration or expansion of such a facility, structure of infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint;*

***"Development footprint",** means any evidence of its physical alteration as a result of the undertaking of any activity;*

***"Development setback"** means a setback line defined or adopted by the competent authority;*

***"Disposal"** means the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land.*

***"Domestic waste"** means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes.*

***"DWA"**, the Department of Water Affairs. This Department is the custodian of South Africa's water resources. It is primarily responsible for the formulation and implementation of policy governing this sector. It also has override responsibility for water services provided by local government.*

***"Ecosystem"** means a dynamic system of plant animal and micro-organism communities and their non-living environment interacting as a functional unit.*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"Effluent" *means-*

a) *Any liquid discharge into the coastal environment as waste and includes any substance dissolved or suspended in the liquid; or*
b) *Liquid which is a different temperature from the body of water into which it is being discharged.*

"Environment", *the surroundings (biophysical, social and economic) within which humans exist and that are made up of:*

i. the land, water and atmosphere of the earth;
ii. micro-organisms, plant and animal life;
iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and
iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing;

*"**Environmental assessment practitioner**" (EAP), means the individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the NEMA EIA Regulations GNR 982 – as defined in section 1 of the Act.*

Note: if exemption from the appointment of an EAP has been applied for, the applicant must perform the tasks required of an EAP, as indicated in this guideline.

"Environmental audit report" *means a report contemplated in NEMA EIA Regulations GNR 982 regulation 34 (of 2014);*

*"**Environmental authorisation**", means the authorisation by a competent authority of a listed activity or specified activity in terms of this act, and includes a similar authorisation contemplated in a specific environmental management act.*

"Environmental Impact", *the direct effect of human activities and natural events on the components of the environment.*

"Environmental Impact Assessment" *(EIA), means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR;*

"Environmental Impact Assessment Report" *(EIR) means a report contemplated in NEMA EIA Regulations GNR 982 regulation 23 (of 2014);*

"Environmental Management Programme" *(EMPr), a document that contains recommendations for the control or management of the potential significant impacts of operations on the environment and recommendations to contain or mitigate actual impacts – as contemplated in NEMA EIA Regulations GNR 982 regulation 19 and regulation 23 (of 2014).*

*The term '**environmental opportunity**' means a potential for beneficial environmental impacts (such as an improvement in air or water quality through environmentally friendly technology alternatives).*

*The term '**environmental risk**' means a potential for adverse environmental impacts (such as pollution of a water source during construction activities).*

"Environmentally sound management" *means the taking of all practicable steps to ensure that waste is managed in a manner that will protect health and the environment.*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"Expansion" *means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.*

"Export" *means to take or send waste from the Republic to another country or territory.*

"Extended producer responsibility measures" *means measures that extend a person's financial or physical responsibility for a product to the post-consumer stage of the product, and includes—*

(a) waste minimisation programmes;
(b) financial arrangements for any fund that has been established to promote the reduction, re-use, recycling and recovery of waste;
(c) awareness programmes to inform the public of the impacts of waste emanating from the product on health and the environment; and
(d) any other measures to reduce the potential impact of the product on health and the environment

"Fatal Flaw"*: generally, this is regarded as an impact associated with an activity on a site that is of such a negative or detrimental nature that even with mitigation measures, cannot be mitigated to acceptable levels and it is therefore not considered as implementable by the relevant independent specialist or EAP.*

"Feasible", *Acceptable, capable of being used or implemented successfully, without unacceptably damaging the environment. Hydrogeological study: The study of ground water.*

"Financial year" *means a period commencing on 1 April of any year and ending on 31 March of the following year.*

"Forum" *refers to the National Environmental Advisory Forum.*

"Gazette"*, when used in relation to—*

(a) the Minister, means the Government Gazette; and
(b) the MEC, means the Provincial Gazette of the province concerned.

"General waste" *means waste that does not pose an immediate hazard or threat to health or to the environment, and includes—*

(a) domestic waste;
(b) building and demolition waste;
(c) business waste: and
(d) inert waste;

"Government waterwork" *means a waterwork owned or controlled by the Minister and includes the land on which it is situated.*

"Hazard" *means a source of or exposure to danger.*

"Hazardous waste" *means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.*

"Holder of waste" *means any person who imports, generates, stores, accumulates, transports, processes, treats, or exports waste or disposes of waste.*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"High-risk activity" *means an undertaking, including processes involving substances that present a likelihood of harm to health or the environment.*

"Import" *means any entry into the Republic other than entry for transit.*

"Important Bird and Biodiversity Areas (IBA)" *means areas/sites that hold significant numbers of globally and/or regionally threatened species (Categories A1 and C1); sites that are known or thought to hold a significant component of a group of species whose breeding distributions define and Endemic Bird Area (EBA) (Category A2); sites that are known or thought to hold a significant component of a group of species whose distributions are largely or wholly confined to one biome (Category A3);*

"Incineration" *means any method, technique or process to convert waste to flue gases and residues by means of oxidation.*

"Independent"*, in relation to an EAP, a specialist or the person responsible for the preparation of an environmental audit report, means –*

- *(a) That such EAP, specialist or person has no business, financial, personal or other interest in the activity or application in respect of which that EAP, specialist or person is appointed in terms of the NEMA EIA Regulations GNR 982 (2014); or*
- *(b) That there are no circumstances that may compromise the objectivity of that EAP, specialist or person in performing such work; excluding –*
  - *i. Normal remuneration for a specialist permanently employed by the EAP; or*
  - *ii. Fair remuneration for work performed in connection with that activity, application or environmental audit;*

"Indigenous vegetation" *refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.*

"Industrial complex" *means an area used or zoned for bulk storage, manufacturing, processing or packaging purposes.*

"Industry" *includes commercial activities, commercial agricultural activities, mining activities and the operation of power stations.*

"Inert waste" *means waste that—*

(a) does not undergo any significant physical, chemical or biological transformation after disposal;
(b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and
(c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant;

"In stream habitat" *includes the physical structure of a watercourse and the associated vegetation in relation to the bed of the watercourse.*

*"**Interested and affected party**" (I&AP), for the purposes of chapter 5 of the NEMA and in relation to the assessment of the environmental impact of a listed activity or related activity, means an interested and affected party contemplated in section 24(4)(a)(v), and which includes-*

(a) any person, group of persons or organisation interested in or affected by such operation or activity; and
(b) any organ of stale that may have jurisdiction over any aspect of the operation or activity.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"International environmental instrument" *means any international agreement declaration, resolution, convention or protocol which relates to the management of the environment.*

"Large stock unit" *means domesticated units including but not limited to cattle and horses, as well as game, including but not limited to antelope and buck with an average adult male live weight of 100 kilograms or more.*

"Life cycle assessment" *means a process where the potential environmental effects or impacts of a product or service throughout the life of that product or service are being evaluated.*

"Linear activity" *means an activity that is arranged in or extending along one or more properties and which affects the environment or any aspect of the environment along the course of the activity, and includes railways, roads, canals, channels, funiculars, pipelines, conveyor belts, cableways, powerlines, fences, runways, aircraft landing strips, and telecommunication lines;*

"Littoral active zone" *means any land forming part of or adjacent to the seashore that is-*

a) *unstable and dynamic as a result of natural processes, and*
b) *characterised by dunes, beaches, sand bars and other landforms composed of unconsolidated sand, pebble or other such material which is either un-vegetated or only partially vegetated*

"Low water mark" *means the lowest line in which coastal waters recede during spring tides.*

"Maintenance" *means actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint;*

"Maintenance management plan" *means a management plan for maintenance purposes defined or adopted by the competent authority;*

*The term '**management**' means the planning and interactive controlling of human and material resources to achieve time, cost, quality, performance, functional and scope requirements. It involves the anticipation of changes due to changing circumstances and the making of other changes to minimise adverse effects.*

"MEC" *means the Member of the Executive Council to whom the Premier has assigned the performance in the province of the functions entrusted to a MEC by or under such a provision.*

"Minimisation", *when used in relation to waste, means the avoidance of the amount and toxicity of waste that is generated and. in the event where waste is generated, the reduction of the amount and toxicity of waste that is disposed of.*

"Minimum information requirements" *means the minimum information requirements contemplated in section 24(5)(bA)(viiiA), if any are applicable at the time of the application;*

"Mitigation" *means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible;*

"Mixed use", *with regard to an activity, means the presence of two or more types of land use in an area.*

"National Appeal Regulations" *means the national appeal regulations published in terms of section 43(4) and 44 of the Act;*

"National department" *means a department of State within the national sphere of government.*

"National Environmental Management Act" *(NEMA), means the National Environmental Management Act, 1998 (Act No. 107 of 1998); To provide for co-operative environmental governance by establishing principles for*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith.

"National Protected Area Expansion Strategy (NPAES)" *means South Africa's national strategy for expansion of the protected area network, led by the Department of Environmental Affairs and developed in collaboration with national and provincial conservation authorities. The NPAES sets targets for protected area expansion, provides maps of the most important areas for protected area expansion, and makes recommendations on mechanisms for protected area expansion. Focus areas for protected area expansion are identified in the NPAES. They are large, intact, unfragmented areas of high importance for land-based protected area expansion, suitable for the creation or expansion of large protected areas.*

"NEM: AQA", *National Environmental Management: Air Quality Act (39 of 2004). The NEM: AQA's serves to protect the environment by providing reasonable measures for the protection and improvement of the quality of air; the prevention of air pollution and ecological degradation; and securing ecologically sustainable development while promoting economic and social development.*

"NEM: BA", *National Environmental Management: Biodiversity Act (10 of 2004). This Act serves to provide for the management and conservation of biological diversity within an area and of the components of such biological diversity. This Acts objective is to preserve species and ecosystems irrespective of whether or not they are situated in protected areas.*

"NEM: PAA", *National Environmental Management: Protected Areas Act (57 of 2003). This Act is intended to protect and conserve ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. This includes the identification and classification of various types of protected areas to give effect to this intention and underpinning this intention is the stated objective of creating a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity. These protected areas are to fall on state owned land, privately owned land and communally owned land.*

"NEM: WA", *National Environmental Management: Waste Act (59 of 2008). The NEM:WA serves to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.*

"NEMA EIA regulations*", mean the environmental impact assessment regulations promulgated in terms of the national environmental management act, 1998 (act no. 107 of 1998) ("NEMA") 12.*

*"**No-go option**" means the option of not implementing the activity.*

"Non-substantive"*, in relation to the amendment or substitution of a regulation, notice, strategy, licence, approval, or provision thereof, includes—*

(a) any clerical mistake, unintentional error or omission;
(b) the correction of any miscalculated figure; and 45
(c) the correction of any incorrect description of any person, thing, property or waste management activity;

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"Ocean-based activity" *means an activity in the territorial waters of the Republic of South Africa;*

*"**Organ of state**", means -*

(a) any department of state or administration in the national, provincial or local sphere of government; or
(b) any other functionary or institution –
I. Exercising a power or performing a function in terms of the constitution or a provincial constitution; or
Ii. Exercising a public power or performing a public function in terms of any legislation but does not include a court or a judicial officer.

Note: examples of organs of state include: municipalities (both the district and local municipality), Heritage western cape, CapeNature, the department of water affairs, etc.

"Person" *includes a natural person, a juristic person, an unincorporated body, an association, an organ of state and the Minister.*

"Phased activities" *means an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent or his or her successors.*

"Plan of study for environmental impact assessment" *means a study contemplated in NEMA EIA Regulations GNR 982 regulation 22 (of 2014) which forms part of a scoping report and sets out how an environmental impact assessment will be conducted;*

"Pollution", *manes any change in the environment caused by-*

i. *Substances*
ii. *Radioactive or other wastes; or*
iii. *Noise, odours, dust or heat.*

Emitted from any activity, including the storage to treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where the change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems or on material useful to people, or will have an effect in the future.

"Previous NEMA notices" *as contemplated in these transitional arrangements means the previous notices published in terms of section 24(2) and NEMA (Government Notices R. 386 and R. 387 in the Government Gazette of 21 April 2006, as amended, or Government Notice No. R 544, 545 and 546 in the Government Gazette of 18 June 2010, as amended);*

*"**Previous NEMA regulations**" means the environmental impact assessment regulations published in terms of: · sections 26 and 28 of the ECA, by government notice no. R. 1183 of 5 September 1997; or · NEMA, by government notice no. R. 385 in the government gazette of 21 April 2006.*

*The term '**procurement**' means the collection of activities performed by and for an agency to acquire services and products, including assets, beginning with the identification/detailing of service requirements and concluding with the acceptance (and where applicable, disposal) of the services and products.*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

*The term '**project**' means an undertaking with a defined beginning and objective by which completion is identified. Project delivery may be completed using one contract or a number of contracts*

***"Proponent"** means a person intending to submit an application for environmental authorisation and is referred to as an applicant once such application for environmental authorisation has been submitted;*

***"Protection"** in relation to a water resource, means -*

(a) maintenance of the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way;
(b) prevention of the degradation of the water resource; and
(c) the rehabilitation of the water resource

***"Protected area"** means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers;*

*"**Public participation process**", means a process by which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, an application.*

***"Receipt"** means receipt on the date indicated –*

(a) On a receipt form if the application of document was hand delivered or sent via registered mail;
(b) In an automated or computer generated acknowledgment of receipt;
(c) On an acknowledgment in writing from the competent authority as the date of receipt if the application or document was sent via ordinary mail; or
(d) On an automated or computer generated proof of transmission in the case of a facsimile message;

***"Recovery"** means the controlled extraction of a material or the retrieval of energy from waste to produce a product.*

***"Recycle"** means a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.*

***"Red Flags"**: generally, this is terminology used to bring to attention, at the early stages of assessment, a potentially serious issue that needs to be assessed in greater detail and that may have undesirable impacts, even with mitigation. This can however, only be determined on detailed assessment, but serves as a good guide to the professional team and EAP and applicant early on in the process to inform further design on site.*

***"Registered environmental assessment practitioner or registered EAP"** means an environmental assessment practitioner registered with an appointed registration authority contemplated in section 24H of the Act;*

*"**Registered interested and affected parties**" in relation to an application, means an interested and affected party whose name is recorded in the register opened for that application in terms of NEMA EIA Regulations GNR 982 regulation 42 (of 2014);*
a) all persons who, as a consequence of the public participation process conducted in respect of an application have submitted written comments or attended meetings with the applicant or EAP;
b) all persons who, after completion of the public participation process, have requested the applicant or the EAP managing the application, in writing, for their names to be placed on the register; and
c) all organs of state which have jurisdiction in respect of the activity to which the application relates.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Note: to be registered as an interested and affected party the persons referred to in (a) and (b) above must provide their names, contact details and addresses to the EAP managing the application process.
Registered IA&Ps must ensure that they notify the EAP if their contact details and/or address changes during the application process.

A registered I&AP is entitled to comment, in writing, on all written submissions made to the department by the applicant or the EAP, provided that comments are submitted within the specified timeframes and the I&AP discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

***"Reserve"** means the quantity and quality of water required -*

(a) to satisfy basic human needs by securing basic water supply, as prescribed under the Water Services Act. I) 97 (Act No, 108 of 1997) for people who are now or who will, in the reasonably near future be—
(i) relying upon;
(ii) taking water from; or
(iii) being supplied from, the relevant water resource; and
(b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant watt resource.

***"Resource quality"** means the quality of all the aspects of a water resource including-*

(a) the quality, pattern, timing, water level and assurance of instream flow;
(b) the water quality, including the physical, chemical and biological characteristics of the water;
(c) the character and condition of the instream and riparian habitat; and
(d) the characteristics, condition and distribution of the aquatic biota.

***"Responsible authority"** in relation to a specific power or duty in respect of water uses means-*

(a) it that power or duty has been assigned by the Minister to a catchment management agency that catchment management agency; or
(b) it that power or duty has not so been assigned the Minister.

***"Re-use"** means to utilise articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles.*

***"Riparian habitat"** includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of Species with a composition and physical structure distinct from those of adjacent land areas.*

***"Route determination"** means the process of planning and designing a new route;*

***"SANS 1089:1999"** The Petroleum Industry: Storage and distribution of petroleum products in above-ground bulk installations.*

***"Scoping report"** means a report contemplated in NEMA EIA Regulations GNR 982 regulation 21 (of 2014);*

***"S&EIR"** means the scoping and environmental impact reporting process contemplated in NEMA EIA Regulations GNR 982 regulation 21 to regulation 24 (of 2014);*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

*The term '**service provider**' means a Contractor, sub-Contractor, supplier, consultant (including an agency) and sub-consultant (contracting with a consultant), and their service providers, that contract with a customer to carry out assets construction, provide other products (including goods) and/or provide services.*

***"Significant impact"** means an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence;*

***"Site or areas listed in terms of an International Convention"** means any area and its buffer, unless specifically defined, of 5 kilometres extending from is listed boundary, listed in terms of an international convention but does not include world heritage sites, and shall include but not be limited to the Ramsar Convention on Wetlands (Ramsar, Iran, 1971);*

***"Small stock unit"** means domesticated units, including sheep, goats and pigs, as well as game, including but not limited to antelope and buck with an average adult male live weight of less than 100 kilograms.*

***"Specialist"** means an independent SACNASP registered specialist with experience with the relevant taxa and who is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports or undertaking specialist assessments;*

*"**State department**", means any department or administration in the national or provincial sphere of Government exercising functions that involve the management of the environment or that administer a law relating to a matter affecting the environment.*

Note: examples of state departments include: the department of water affairs, department of agriculture, etc. Whilst all state departments are organs of state, not all organs of state are state departments (e.g. Municipalities are organs of state, but not state departments).

***"State land"** means land which vests in the national or a provincial government, and includes land below the high water mark and the Admiralty Reserve but excludes land belonging to a local authority.*

***"Storage"** means the accumulation of waste in a manner that does not constitute treatment or disposal of that waste.*

*The term '**sub-Contractor**' means an organisation that contracts with a Contractor as the customer to carry out construction and related services, and/or provide other products.*

*The term '**supplier**' means an organisation that contracts with a Contractor/Principal to supply a product and/or service**.***

***"Sustainable development"** means the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.*

***"Systematic biodiversity plan"** is a plan that identifies important areas for biodiversity conservation, taking into account biodiversity patterns (i.e. the principle of representation) and the ecological and evolutionary processes that sustain them (i.e. the principle of persistence). A systematic biodiversity plan must set quantitative targets/thresholds for aquatic and terrestrial biodiversity features in order to conserve a representative sample of biodiversity pattern and ecological processes;*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

"the Act" *means the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended;*

- *Any reference in the associated regulations to an environmental assessment practitioner will, from a date to be determined by the Minister by notice in the Gazette, be deemed to be a reference to a registered environmental assessment practitioner, as defined.*

"Throughput capacity" *means the design capacity or maximum capable capacity of a facility, structures or infrastructure, whichever is greater;*

"Transit" *means the continuous passage from one border of the Republic to another such border without storage other than temporary storage incidental to transport.*

"Treatment" *means any method, technique or process that is designed to—*

(a) change the physical, biological or chemical character or composition of a waste; or
(b) remove, separate, concentrate or recover a hazardous or toxic component of a waste; or
(c) destroy or reduce the toxicity of a waste, in order to minimise the impact of the waste on the environment prior to further use or disposal:

"Undeveloped" *means that no facilities, structures or infrastructure have been effected upon the land or property during the preceding 10 years.*

"Unit" *in relation to a quantity standard for determining throughput of facilities or infrastructure for the slaughter of animals, has the meaning assigned to it in Regulations promulgated in terms of the Meat Safety Act, 2000 (Act No. of 40 of 2000).*

"Urban areas" *means areas situated within the urban edge (as defined or adopted by the competent authority), or in instances where no urban edge or boundary has been defined or adopted, it refers to areas situated within the edge of built-up areas.*

"Vacant" *means not occupied for the purpose of its lawful land use during the preceding ten-year period.*

"Virgin soil" *means land not cultivated for the preceding 10 years.*

"Waste" *means any substance, whether or not that substance can be reduced, re-used, recycled and recovered—*

(a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
(b) which the generator has no further use of for the purposes of production;
(c) that must be treated or disposed of; or
(d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but—
(i) a by-product is not considered waste; and
(ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste;

"Waste disposal facility" *means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.*

"Waste management activity" *means any activity listed in Schedule 1 or 40 published by notice in the Gazette under section 19, and includes—*

(a) the importation and exportation of waste;
(b) the generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste:

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

(c) the accumulation and storage of waste;
(d) the collection and handling of waste;
(e) the reduction, re-use, recycling and recovery of waste;
(f) the trading in waste;
(g) the transportation of waste;
(h) the transfer of waste; 50
(i) the treatment of waste; and
(j) the disposal of waste;

"Waste management services" *means waste collection, treatment, recycling and disposal services.*

"Waste minimisation programme" *means a programme that is intended to promote the reduced generation and disposal of waste.*

"Waste transfer facility" *means a facility that is used to accumulate and temporarily store waste before it is transported to a recycling, treatment or waste disposal facility.*

"Waste treatment facility" *means any site that is used to accumulate waste for the purpose of storage, recovery, treatment, reprocessing, recycling or sorting of that waste.*

"Watercourse" *means-*

(a) a river or spring;
(b) a natural channel in which water flows regularly or intermittently;
(c) a wetland lake or dam into which, or from which, water flows; and
(d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and

A reference to a watercourse includes, where relevant, its bed and banks;

"Water management area" *is an area established as a management unit in the national water resource strategy within which a catchment management agency will conduct the protection use development, conservation, management and control of water resources.*

"Water management institution" *means a catchment management agency, a water user association, a body responsible for international water management or any person who fulfils the functions of a water management institution in terms of this Act.*

"Water resource" *includes a watercourse, surface water, estuary, or aquifer.*

"Waterwork" *includes any borehole, structure, earthwork or equipment installed or used for or in connection with Water use.*

"Wetland" *means land which is transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface, or the land is periodically covered with shallow water and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.*

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE B

METHOD STATEMENT

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

TYPICAL BASELINE INFORMATION TABLE RELATING TO CONSTRUCTION WORKS

Describe in detail *what* work is to be undertaken?
Describe in detail *where* on the site the works are to be undertaken and the *extent*?
***When* the works will start and the anticipated finishing date of these works?**
***How* are the works to be undertaken?**
Typical Plant and Machinery to be used
Materials to be stored on Site

METHOD STATEMENT TABLE

PROJECT NAME	
IMPACT SOURCE(S)	
RECEPTOR(S)	
OBJECTIVE	
RISKS	
Impacts of Camp Site on Surrounding Site	
NOTES:	

ROLE	**NAME**	**COMPANY**	**DATE**	**SIGNATURE**
CLIENT				
PRINCIPAL AGENT				
CONTRACTOR				
ENGINEER				
ECO/ESCO				

Signature of this Method Statement represents a **binding agreement** to the Method Statement and associated Construction EMP by all site Contractors and sub-Contractors involved in the work for which the Method Statement is submitted.

DECLARATIONS OF RESPONSIBILITY ROLES ON PROJECT

ROLE	**NAME**	**COMPANY**	**DATE**	**SIGNATURE**
CLIENT				
PRINCIPAL AGENT				
CONTRACTOR				

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ENGINEER
ECO/ESCO

DECLARATIONS OF UNDERSTANDING BY PARTIES

CLIENT

I understand the contents of the method statement document and associated construction EMP as well as the legal obligations in terms of ensuring that the Project Team comply with this Method Statement and associated Construction EMP.

_____ **(Print name)**

_____ **(Signed)** **Dated:** _____

CONTRACTOR

I understand the contents of the method statement document and the scope of the works required of me. I further understand that the method statement may be amended on application to the signatories of this declaration, and that the Environmental Control Officer will audit my compliance with the contents of this method statement.

_____ **(Print name)**

_____ **(signed)** **Dated:** _____

ENVIRONMENTAL CONTROL OFFICER (ECO/ESCO)

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

The work described in this Method Statement document, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm.

_____ **(Print Name)**

_____ **(Signed)** **Dated:** _____

PRINCIPAL AGENT

The work described in this Method Statement document, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm.

_____ **(Print name)**

_____ **(Signed)** **Dated:** _____

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE C

RELEVANT PERMITS

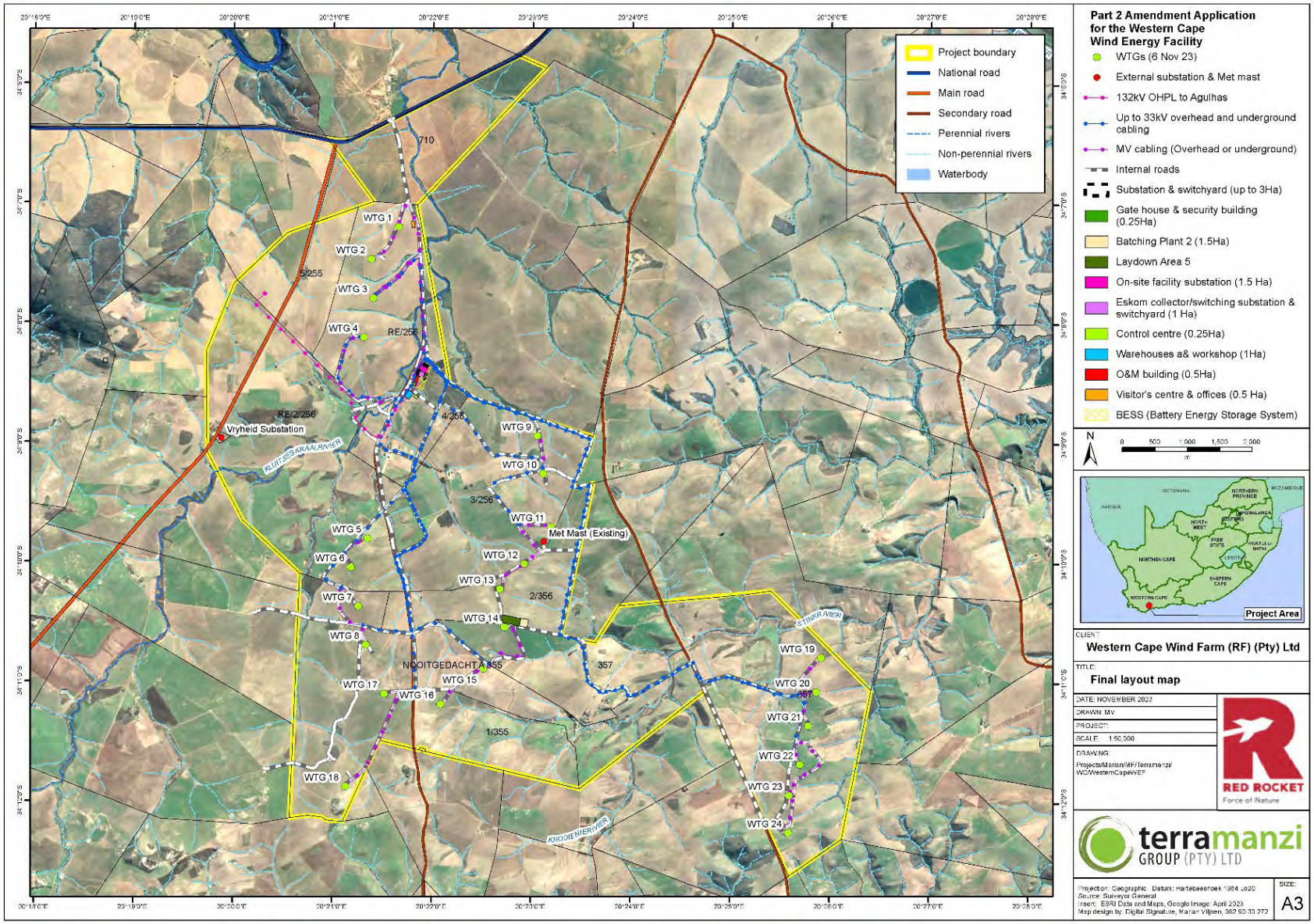
Relevant permits to be inserted in this Annexure once received.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE D

DESIGN AND PLANNING

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za



Annexure D: The Final Project Layout for the Western Cape WEF.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE E

ROLE OF THE ECO/ESCO

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

DUTIES OF THE ECO/ESCO

1. The identification of potential environmental impacts, prior to the onset of the project.
2. Ensuring that the EMPr conditions are adhered to at all times and taking action (via the engineer) where the specifications are not being followed.
3. Ensuring that environmental impacts are kept to a minimum.
4. Reviewing and approving method statements in consultation with the Principal Agent.
5. Advising the engineer and Contractor on environmental issues and assisting in developing environmentally responsible solutions to problems.
6. Reporting to the client and Principal Agent on a regular basis and advising of any environmental impacts.
7. Attending site meetings (when necessary) and giving a report back on the environmental issues at these meetings and other meetings that may be called regarding environmental matters.
8. Inspecting the site and surrounding areas regularly.
9. Establishing and monitoring an ongoing environmental awareness program in conjunction with the Contractor.
10. Requesting the removal of person(s) and/or equipment not complying with the specifications.
11. Keeping both a written and photographic record of progress on site from an environmental perspective, and an ad hoc record of all incidents or events on site with environmental ramifications. These records must be dated and accurately catalogued.
12. Undertaking continual internal review of the EMPr and submitting a report at the end of the project.
13. Submitting all written instructions and verbal requests to the Contractor via the engineer.

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE F

Specialist studies

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE G

EAP's Curriculum Vitae

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE H

Environmental Authorisation

(once available)

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE I

Aquatic Rehabilitation Plan

(To be drafted prior to Construction)

(To be drafted prior to Construction)

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE J

Transportation Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE K

Stormwater Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE L

Fire Management Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE M

Revegetation Habitat Plan

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE N

Chance Fossil Finds Procedure

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE O

Generic EMPR OHPL

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

ANNEXURE P

Generic EMPR Substation

© Terramanzi Group (Pty) Ltd – www.terramanzi.co.za

Environmental Management Programme OHPL: Phase 2

FE Overberg (Pty) Ltd
2nd Floor, Cape Town Cruise Terminal Building
V&A Waterfront, Cape Town, 8001
+27 (0)21 418 3940 • info@redrocket.energy
www.redrocket.energy

Reg No: 2020/787250/07



TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

DEVELOPMENT OF THE OVERHEAD POWERLINE AT THE WESTERN CAPE WIND ENERGY FACILITY WITHIN THE SWELLENDAM MUNICIPALITY IN THE WESTERN CAPE PROVINCE

Applicant: Western Cape Wind Farm (RF) (Pty) Ltd
Contact Person: Magdalena Logan

terramanzi GROUP (PTY) LTD

people. planet. prosperity.

tel: +27 21 701 5228
fax: +27 86 558 1213
mobile: +27 82 575 3800

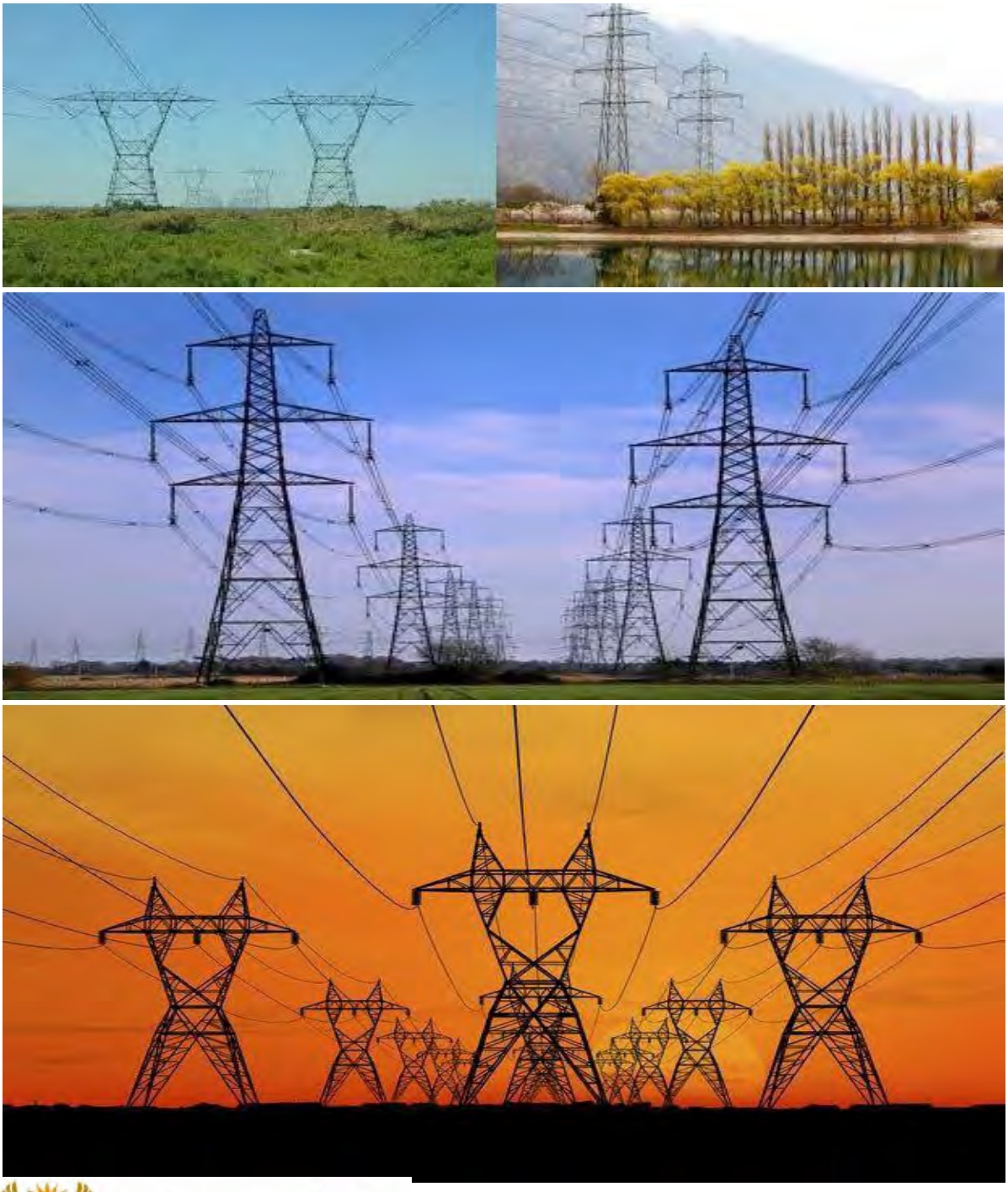
email: info@terramanzi.co.za
website: www.terramanzi.co.za

postal: postnet suite 211, private bag X26, tokai, 7966

OCTOBER 2024

APPENDIX 1

TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSIONFOR OVERHEAD ELECTRICITY TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

TABLE OF CONTENTS

PAGE

INTRODUCTION 1

1. Background 1
2. Purpose 1
3. Objective 1
4. Scope 1
5. Structure of this document 2
6. Completion of part B: section 1: the pre-approved generic EMPr template 4
7. Amendments of the impact management outcomes and impact management actions 4
8. Documents to be submitted as part of part B: section 2 site specific informationand declaration 5

(a) Amendments to Part B: Section 2 – site specific information and declaration5

PART A – GENERAL INFORMATION 6

1. DEFINITIONS 6
2. ACRONYMS and ABBREVIATIONS 7

National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004) 7

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION 8
4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE 14

4.1 Document control/Filing system 14
4.2 Documentation to be available 14
4.3 Weekly Environmental Checklist 14
4.4 Environmental site meetings 15
4.5 Required Method Statements 15
4.6 Environmental Incident Log (Diary) 16
4.7 Non-compliance 16
4.8 Corrective action records 17
4.9 Photographic record 17
4.10 Complaints register 18
4.11 Claims for damages 18
4.12 Interactions with affected parties 18
4.13 Environmental audits 19

4.14 Final environmental audits 19
PART B: SECTION 1: Pre-approved generic EMPr template 20
5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS 20
5.1 Environmental awareness training 21
5.2 Site Establishment development 24
5.3 Access restricted areas 26
5.4 Access roads 27
5.5 Fencing and Gate installation 31
5.6 Water Supply Management 35
5.7 Storm and waste water management 37
5.8 Solid and hazardous waste management 38
5.9 Protection of watercourses 42
5.10 Vegetation clearing 44
5.11 Protection of fauna 50
5.12 Protection of heritage resources 54
5.13 Safety of the public 55
5.14 Sanitation 58
5.15 Prevention of disease 60
5.16 Emergency procedures 62
5.17 Hazardous substances 64
5.18 Workshop, equipment maintenance and storage 71
5.19 Batching plants 73
5.20 Dust emissions 76
5.21 Blasting 79
5.22 Noise 79
5.23 Fire prevention 81
5.24 Stockpiling and stockpile areas 83
5.25 Finalising tower positions 84
5.26 Excavation and Installation of foundations 86
5.27 Assembly and erecting towers 88
5.28 Stringing 93
5.29 Socio-economic 97
5.30 Temporary closure of site 99

5.31 Landscaping and rehabilitation 102
6 ACCESS TO THE GENERIC EMPr 106
PART B: SECTION 2 107
7 SITE SPECIFIC INFORMATION AND DECLARATION 107
7.1 Sub-section 1: contact details and description of theproject 107
7.2 Sub-section 2: Development footprint site map 110
7.3 Sub-section 3: Declaration 120
7.4 Sub-section 4: amendments to site specific information (Part B; section 2) 120
PART C 121
8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES 121
APPENDIX 1: METHOD STATEMENTS 125
APPENDIX 2: CV OF THE EAP 126

INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation(EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended, (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the competent authority (CA).

Please kindly see below an Organogram of the Applicant Company Structure (Figure 1) and Requirements for an Environmental Site Compliance Officer (ESCO):

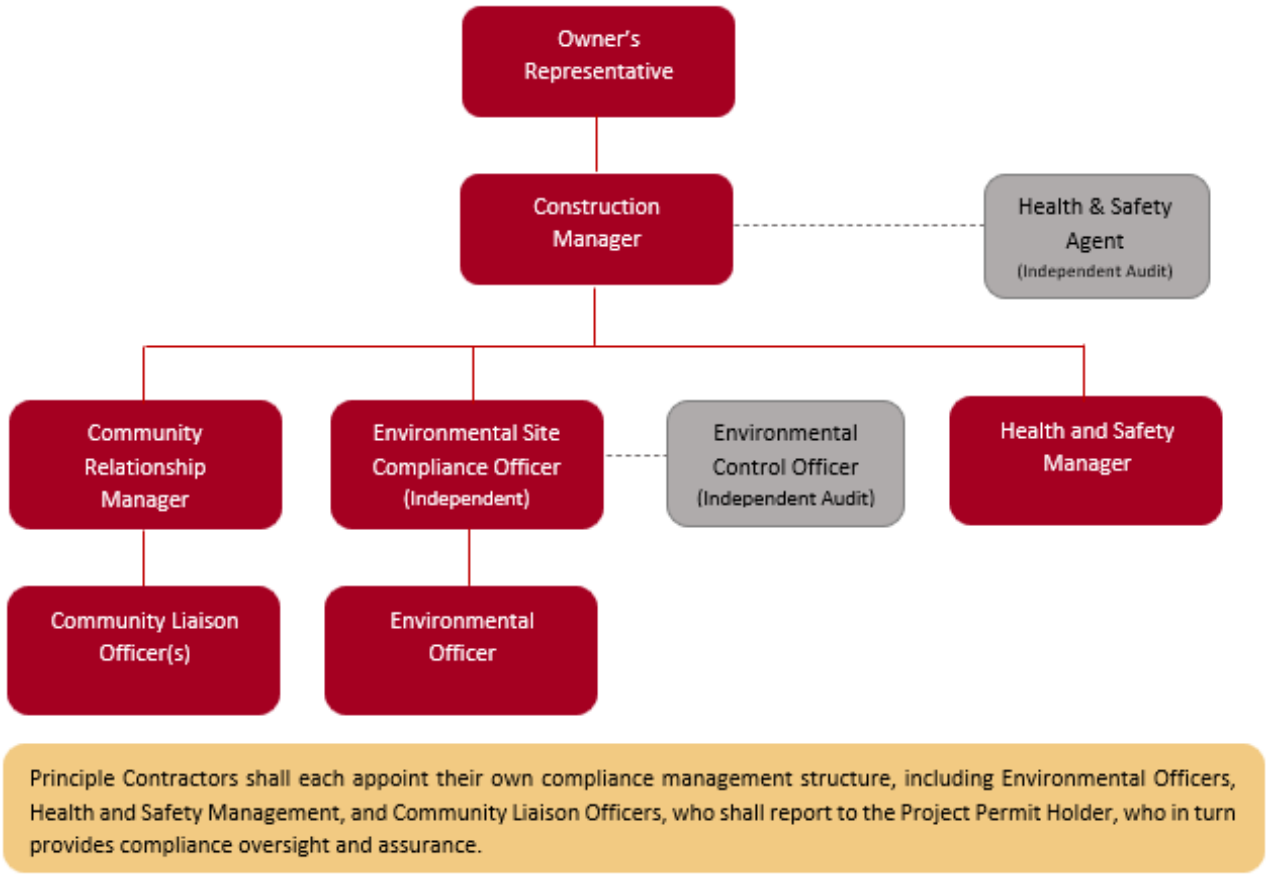


Figure 1. Organogram of the Applicant Company Structure.

A suitably qualified ESCO must be appointed by the Applicant to monitor the project compliance onsite on a full-time basis. Responsibilities of the ESCO include:

- Be fully conversant with the BAR, the conditions of EA and the EMPr;
- Be fully conversant with all relevant environmental legislation and ensure compliance thereof;
- Approve method statements (co-approval with Site Manager);
- Remain employed until the completion of the construction activities; and

- Report to the Project Manager, including all findings identified onsite.

In addition, the ESCO will:

- Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation;
- Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and
- Ensure that activities onsite comply with all relevant environmental legislation.

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of overhead electricity transmission and distribution infrastructure, and all listed and specified activities necessary for the realisation of such infrastructure.

This EMPr has been developed for the construction and operation of The **Western Cape WEF 132kV Powerline** which will connect the Western Cape WEF IPP Substation which add to the Eskom grid, located on various farm properties within the Swellendam Local Municipality in the Western Cape Province.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realisation of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.

Part	Section	Heading	Content
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1 and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of PartC. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre- approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP, and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding.

Part	Section	Heading	Content
			This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the corridor in which the proposed overhead electricity transmission and distribution

infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps must identify features both within the planned working area and any known sensitive features in the surrounding landscape within 50m from the development footprint. The overhead transmission and distribution profile must be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions must be used.

Sub-section 3 is the declaration that the applicant/proponent or holder of the EA in the case of a change of ownership must complete, which confirms that the applicant/EA holder will comply with the pre-approved generic EMPr template in Section 1 and understands that the impact management outcomes and actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

"clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

"construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

"contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"hazardous substance" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

"method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover applicable details with regard to:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

"solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil; and

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environment Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
ESCO	Environmental Site Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management:Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&APs	Registered interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person (s)	Role and Responsibilities
Developer's Project Manager (DPM)	Role The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. Responsibilities - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.

Responsible Person (s)	Role and Responsibilities
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions ofthe EA. Oversees siteworks, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO and dEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non- compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties (RI&APs), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.

Responsible Person (s)	Role and Responsibilities
	Responsibilities The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc) as well as corrective and preventive actions taken; - A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full time basis. - Responsibilities of the ESCO include: • Be fully conversant with the BAR, the conditions of EA and the EMPr;

	• Be fully conversant with all relevant environmental legislation and ensure compliance thereof; • Approve method statements (co-approval with Site Manager); • Remain employed until the completion of the construction activities; and • Report to the Project Manager, including all findings identified onsite. - In addition, the ESCO will: • Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; • Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; • Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and - Ensure that activities onsite comply with all relevant environmental legislation.

Responsible Person (s)	**Role and Responsibilities**
	- Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.

developer Environmental Officer(dEO)	Role The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. Responsibilities - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;

Responsible Person (s)	**Role and Responsibilities**
	- Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECOand contractor;

Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. Thecontractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities. Responsibilities - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.

Responsible Person (s)	**Role and Responsibilities**
Environmental Onsite Compliance Officer (ESCO)	- A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full-time basis. - Responsibilities of the ESCO include: o Be fully conversant with the BAR, the conditions of EA and the EMPr; o Be fully conversant with all relevant environmental legislation and ensure compliance thereof; o Approve method statements (co-approval with Site Manager); o Remain employed until the completion of the construction activities; and

	○ Report to the Project Manager, including all findings identified onsite. - In addition, the ESCO will: ○ Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; ○ Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; ○ Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and ○ Ensure that activities onsite comply with all relevant environmental legislation

contractor Environmental Officer(cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead electricity transmission and distribution infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substances;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in theEMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended/ required corrective action; and
- Date by which the corrective action to be completed.

- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions , as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;

12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in (**section 4.10**) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;

2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes must be included in the EMPr file and be submitted to the CA at intervals as indicated in the EA.

An Environmental Audit Report must be prepared monthly. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of overhead electricity transmission and distribution infrastructure. There is a list of aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All staff must receive environmental awareness training prior to commencement of the activities;	ECO, ESCO , cEO, dEO	Hold environmental awareness training workshops	Pre-construction Construction and Operations	ECO,dEO,ESCO	Monthly and as And when required	Attendance Register and training minutes / notes for the record
The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;	Contractor	Scheduling of sufficient sessions through consultation with the ECO / cEO / dEO	Pre-construction Construction	ECO, ESCO, dEO	Monthly and as And when required	Attendance Register and training minutes / notes for the record
Refresher environmental awareness training is available as and when required;	Ceo,dEO in consultation with the ECO, ESCO	Hold refresher environmental awareness training workshops	During the construction phase	ECO, ESCO, dEO	Monthly and as And when required	Attendance Register and training minutes / notes for the record
All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;	cEO, dEO	Hold training workshops and ensure that the EA and EMPr is readily available	During the construction phase	ECO, ESCO, dEO	Monthly and as and when required	Attendance register and training minutes / notes for the record

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering.	Contractor	Develop and place appropriate posters at key locations	Pre-construction Construction	ECO, ESCO, dEO cEO	Monthly	Photographic record
– Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention.	Ceo,dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO, ESCO, dEO	Prior to the commencement t of the environmental awareness training	Environmental awareness training material requirements checklist
A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO, ESCO, cEO, dEO	Filing system including all proof of training (i.e. attendance register and training minutes	During the construction phase	ECO, ESCO, dEO	Monthly	Completed andup to date filing system with proof of training

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		/ notes for the record)				
Educate workers on the dangers of open and/or unattended fires;	cEO, dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the dangers of open and/or unattended fire	Pre-construction Construction	ECO, ESCO, dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
A staff attendance register of all staff to have received environmental awareness training must be available.	ECO, ESCO,cEO,dEO	Filing system including all proof of training (i.e. attendance register)	During the construction phase	ECO, ESCO, dEO	Monthly	Completed and up to date filing system inclusive of all attendance registers
Course material must be available and presented in appropriate languages that all staff can understand.	ECO, ESCO, cEO, dEO	Develop environmental awareness training materialin the required languages. Training material must by readily available to all staff	During the construction phase	ECO, ESCO, dEO	Monthly	Environmental awareness training material requirements checklist and the training register which must indicate the language of the training

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;	Contractor	Development of an appropriate method statement	Pre-construction	ECO, ESCO, dEO	Once, prior to construction	Availability of the method statement which complies with the minimum requirements listed
Location of construction camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;	DPM, ESCO	Place construction camps outside of sensitive areas identified in the Basic Assessment Report	Pre-construction Construction	ECO, ESCO, dEO	Once, prior to construction	Availability of a Layout and sensitivity map indicating avoidance of sensitive areas
Sites must be located where possible on previously disturbed areas;	DPM, ESCO	Place site outside of	Pre-construction	ECO, ESCO, dEO	Once, prior to construction	Availability of a layout and

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		sensitive areas and within previously disturbed areas identified in the BA Report				sensitivity map indicating avoidance of sensitive areas and placement within disturbed areas
The camp must be fenced in accordance with ***Section5.5: Fencing and gate installation***; and	DPM	Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr	Pre-construction& Construction	ECO, ESCO, dEO	Once, prior to construction and once during the Construction of the fencing	The camp is fenced in accordance with Section 5.5of this EMPr
The use of existing accommodation for contractor staff, where possible, is encouraged.	Not applicable – the development of new accommodation is not proposed. Staff will be accommodated in neighboring Towns.					

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development;	dEO, cEO in consultation with the ECO, ESCO	Spatially demarcate access restricted areas informed by the BA Report	Pre-construction	ECO, ESCO	Once, prior to construction	Access restricted areas are identified and provided in a spatial format
Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and	dEO, cEO in consultation with the ECO, ESCO	Erect appropriate temporary barriers around access restricted areas	At the commencement and for the duration of the construction phase	ECO, ESCO	Monthly	Access restricted areas are closed-off through temporary barriers and barriers are maintained to a sufficient standard
Unauthorised access and development related activity inside access restricted areas is prohibited.	Contractor , dEO ,cEO, ESCO	Erect appropriate temporary barriers around access restricted areas and provide clear	During the construction phase	ECO, ESCO	Monthly, and as and when required	Photographic evidence and notes of compliance that no unauthorised access or activities has

		signage of restricted status				taken place within the

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						access restricted areas

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area;	DPM	Undertake negotiations for access to the servitude and tower positions with landowners affected by the grid connection corridor	Pre-construction Construction Operation	dEO, ESCO	Ongoing throughout construction and operation	Proof of negotiations with affected landowners and requirements for access to the servitude and tower positions in the form of written and signed agreements
An access agreement must be formalised and signed	DPM	Develop access	Pre-construction	dEO	Once, prior to	Availability of

by the DPM, Contractor and landowner before commencing with the activities;	Contractor	agreements with the affected landowners. Ensure that		ECO, ESCO	construction	approved and signed agreement/s.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		agreements are approved and signed				
The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;	Contractor	Develop and install signs to indicate access for the project	Pre-construction	cEO,ECO, ESCO	Once, prior to construction	Photographic record of signposted access roads and GPS co-coordinates of where these are placed
All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition	Contractor	Undertake maintenance activities on Private roads Used for construction as degradation takes place	During the construction phase	cEO,ECO, ESCO	Weekly	Photographic record of the pre-construction condition and degradation of roads, and records of the implementation and effectiveness Of maintenance activities
All contractors must be made aware of all the access routes.	dEO,cEO	Develop a map	Pre-construction	ECO, ESCO	Once, prior to	Access routes

As well as a mandatory 40km/h speed limit for construction roads.		illustrating all access routes associated with the project and present and	Construction		construction	map readily available

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		provide the map to all contractors				
Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;	Contractor	All access routes developed that are not in-line with the access route agreements must be closed and re-habilitated to the pre-disturbance state	Construction and Rehabilitation	cEO,ECO, ESCO	Bi-weekly (every two weeks)	Photographic record of the closure of access roads and re- vegetation
Maximum use of both existing servitudes and existing roads must be made to minimise further disturbance through the development of new roads;	Contractor (and Eskom maintenance staff where relevant to operation)	Existing access routes to be used must be specified and the development of new roads must be avoided as far as possible	Construction and operation	cEO Operation and maintenance team	Weekly	Implementation of the approved layout
In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;	dEO,cEO	Record the conditions of private roads to be used (prior to use) as per the requirements of section 4.9 and	During the construction phase	ECO, ESCO	Prior to the use of private roads	Photographic record and proof of the road conditions agreed upon with the relevant parties

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		agree on the required condition of the roads with the landowner, DPM and contractor				
Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands;	DPM and Contractor	Design access roads to follow fence lines and avoid vegetated areas	Pre-construction	ECO, ESCO	Once during the design and once prior to construction	Implementation of the approved layout
Access roads must only be developed on pre-planned and approved roads.	Contractor	Construction of access roads only on pre- planned and approved access roads	During the construction phase	ECO, ESCO, once during the design dEO	Once during the design and weekly during the construction of access roads	Implementation of the approved layout

5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible;	Contractor	Identify and inform all relevant staff of the existing gates to be used	Pre-construction& Construction	dEO	Monthly	Existing gates are utilised on a frequent basis and only limited new access gates are developed
– Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record;	ECO, ESCO	Existing and new gates will be recorded and documented as per the requirements of section 4.9	During the construction phase	ECO, ESCO	Once, when the construction of all new gates have been completed	Photographic record of the existing and new gates as per the requirements of section4.9
– All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	Contractor	Ensure all relevant gates are fitted with locks and are always locked	Construction and Operation	ECO, ESCO, monthly, Operation and maintenance team and cEO	Bi-weekly (every second week)	All gates are locked and no complaints from landowners are received in this regard
– At points where the line crosses an existing fence in which there is no suitable gate within the extent of the	dEO	Install new gates where required with the	During the construction phase	ECO, ESCO,	Once, prior to construction and during the	New gates are installed where

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;		approval of the affected landowner			construction phase, as and when required	the power line crosses fences
Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	Contractor	Install gates in a manner so that there is a gap of no more than 100mm between the bottom of the gate and the ground	During the construction phase	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;	Contractor	Implement a reinforced concrete sill beneath gates installed for jackal proofing	During the construction phase	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
Original tension must be maintained in the fence wires;	Contractor	Maintain original tension of fences through required activities	During the construction phase	ECO, ESCO	Monthly	No tension reduction on fence wires
All gates installed in electrified fencing must be re-electrified;	Contractor	Electrify gates installed in electrified fencing	During the construction phase	ECO, ESCO	Once, during the erection of the gates during the construction phase	Gates installed in electrified fencing Is electrified

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities;	Contractor	Undertake maintenance activities on Fences and barriers	During the construction phase	ECO, ESCO	Monthly	Photographic record of maintained fences and barriers
Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora;	Contractor	Fence construction camps, batching plants, hazardous storage areas and access restricted areas. Avoid sensitive flora	During the construction phase	ECO, ESCO	Once during the erection of fencing	Photographic record of fences erected
Any temporary fencing to restrict the movement of livestock must only be erected with the permission of the landowner.	dEO,cEO Contractor	Obtain written approval from the relevant landowner where temporary fencing is Required to restrict livestock movement	During the construction phase	ECO, ESCO	To be monitored as temporary fencing is required	Written approval to be provided by the dEO
All fencing must be developed of high quality material bearing the SABS mark;	Contractor	Make use of high quality materials approved by SABS	During the construction phase	cEO	To be monitored as fencing is erected during the construction phase	Use of high quality materials for fencing approved by SABS

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The use of razor wire as fencing must be avoided as far as possible;	Contractor	Razor wire must not be sourced or used for the erection of fencing	During the construction phase	ECO, ESCO	To be monitored as fencing is erected during the construction phase	Fences erected do not make use of razor wire
Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;	DSS and Contractor	Ensure fenced areas are locked as required through the implementation of a formalised process. Appoint a security company	During the construction phase	cEO	Weekly and as and when required	Fences are locked and no complaints from landowners are received. A security company is appointed
On completion of the development phase all temporary fences are to be removed;	Contractor	Removal of all temporary fences	At the end of the Construction Phase	ECO, ESCO, dEO	Once, following the completion of the construction phase	No temporary fences associated with the project is present following the completion of the construction phase
The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Contractor	Appropriate removal of all fence uprights	At the end of the Construction Phase	ECO, ESCO, dEO	Once, following the completion of the construction phase	No temporary fence uprights associated with the project is present

						following the Completion of the construction phase

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage**.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;	DMP	Ensure required authorisation has been obtained, and that metering system has been installed	After Construction	ECO, ESCO	Monthly	Proof of authorisation. Monthly abstraction monitoring records
– The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and	Contractor /dEO / cEO in consultation withthe ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	Contractor /dEO / cEO in consultation with the ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation
– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	Contractor / dEO / cEO in consultation with the ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation

5.7 Storm and waste water management

Impact management outcome: Impacts to the environment caused by stormwater and wastewater discharges during construction are avoided.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager;	Contractor	Implement measures for the control and management of runoff	During the construction phase	cEO, ESCO	Weekly	No mismanagement of runoff or contaminated water due to the temporary concrete batching plant
All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	Contractor and cEO	Obtain approved absorbent material and make use of licensed waste disposal facilities for disposal of oil	During the Construction Phase	ECO, ESCO	Monthly	Availability of approved absorbent material at the construction site and proof of disposal of oil at licensed disposal facilities
Natural stormwater runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;	DPM in consultation with the ECO, ESCO	Consultation between the DPM and the ECO to determine if water can be	During the construction phase	ECO, ESCO	As and when the need arises to discharge natural stormwater runoff and	Proof of consultation between the DPM and ECO and the outcomes thereof to be provided.

		discharged			clean water	Proof of water

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge				quality testing and the results thereof.

5.8 Solid and hazardous waste management

Impact management outcome: Waste is appropriately stored, handled and safely disposed of at a recognised waste facility**.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
▯ All measures regarding waste management must be undertaken using an integrated waste management approach;	Contractor	Develop and implement a waste management plan	During the construction phase	ECO, ESCO	Monthly	Implementation of the waste management plan and proof of waste management through proof of

						responsible disposal

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	Contractor	Provision of appropriate waste collection bins strategically placed throughout the site	During the construction phase	cEO, ESCO	Weekly	Appropriate waste collection Bins are available throughout the site
A suitably positioned and clearly demarcated waste collection site must be identified and provided;	DPM and Contractor	Identify an appropriate location for the waste collection site which must be clearly demarcated through signage and temporary fencing	Design and Construction Phase	ECO, ESCO	Once, prior to the commencement t of construction	A waste collection site is appropriately placed and demarcated
The waste collection site must be maintained in a clean and orderly manner;	Contractor	Regular collection of waste and maintenance of the area must be undertaken as per the waste requirements for the project during construction	During the Construction Phase	cEO, ESCO	Weekly	The waste collection site is maintained and clean

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;	Contractor	Provide separate and marked bins for the different waste types associated with the construction phase	During the Construction Phase	cEO, ESCO	Weekly	Separate waste bins are available on site and waste generated is separated into the relevant bins
Staff must be trained in waste segregation;	cEO / dEO in consultation with the ECO, ESCO	Include waste segregation as part of the environmental awareness training material.	Pre-construction Construction	ECO, ESCO	Monthly, and as and when required	Environmental awareness training material requirements checklist
Bins must be emptied regularly;	Contractor	Bins must be emptied before reaching total capacity and on a regular basis as required for the project	During the construction phase	ECO, ESCO	Monthly	No mismanagement of bins.
General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;	Contractor	Disposal of general waste at licensed waste disposal facilities must be undertaken as per the waste Management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Hazardous waste must be disposed of at a registered waste disposal site;	Contractor	Disposal of hazardous waste at licensed waste disposal facilities must be undertaken asper the waste management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	Contractor	Obtain certificates for safe disposal of waste	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided and filed as part of thefiling system

5.9 Protection of watercourses

Impact management outcome: Pollution and contamination of the watercourse environment and erosion are prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;	Contractor	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	During the construction phase	cEO, ESCO	Weekly	No incidents reported of Spillage of Pollutants into watercourses
In the event of a spill, prompt action must be taken to clear the polluted or affected areas;	Contractor and cEO	Develop a management plan or process for implementation should a spill take place	During the construction phase	cEO, ESCO	Weekly	Feedback must be provided by the contractor in terms of how the spill was handled and photographic evidence of the feedback must be provided and kept on record
Where possible, no development equipment must traverse any seasonal or permanent wetland	cEO and Contractor	Ensure layout has been informed by the environmental sensitivities as	Construction Phase	ECO, ESCO	Once off review that the layout used is the approved one	Confirm no development equipment traverses any seasonal or

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		determined by the basic assessment and specialist studies				permanent wetland as per the authorised layout by reviewing the detailed designs (once-off confirmation).
Development of permanent watercourse crossing must only be undertaken where no alternative access to tower position is available;	cEO, Contractor	Ensure that permeant crossings (access roads) are provided for access to the grid connection corridor if no alternative crossing is available.	During the construction phase	cEO, ESCO	Weekly	Ensure that permeant crossings are Developed if there is no alternative.
There must not be any impact on the long-term morphological dynamics of watercourses;	cEO, and Contractor	Ensure that no long-term impacts of morphological dynamics of watercourses occur	During construction and operational phases	ECO, ESCO	Monthly or as and when required.	No degradation of the watercourses photographic evidence.
Upgrading of Existing crossing points must be favored over the creation of new crossings (including temporary access)"	N/A					

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– When working in or near any watercourse, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; b) Unless authorised, there should be no altering of the bed, banks, course or characteristics of a watercourse c) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; d) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and e) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.	Contractor	Activities undertaken near watercourses must be in-line with and consider the specified environmental controls	During the construction phase	ECO, ESCO	Monthly, and as and when required	No degradation of the watercourses and no incidents ofdestruction reported

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
General:						
Indigenous vegetation which does not interfere with the development must be left undisturbed;	cEO and contractor	Demarcate areas of indigenous vegetation to be avoided before clearance is undertaken	Construction and operation (i.e. for maintenance purposes)	ECO, ESCO, monthly, Operation and maintenance team weekly	Weekly, and as and when required	No unnecessary Clearance of indigenous Vegetation is undertaken
Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;	Contractor	Demarcate areas containing protected or endangered species to be avoided by construction activities	During the Construction Phase	ECO, ESCO,monthly and Operation and maintenance team weekly	Weekly, and as and when required	No clearance of protected or endangered species other than those permitted to be removed
Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;	Relevant specialist in consultation with the Contractor	Develop and implement a Plant Search and Rescue Plan	Pre-construction & Construction	cEO, ESCO	Weekly, and as and when required	Implementation of the Plant Search and Rescue Plan and photographic evidence and notes of the implementation of the plan
Environmental Officer (EO) to provide supervision and oversight of vegetation clearing activities within sensitive areas such as near the drainage lines.	Contractor, EO, ESCO	Develop and implement a vegetation	Pre-construction & Construction	cEO, ESCO, EO	Weekly, and as and when required	No excessive clearing of vegetation

						recorded.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		clearing method statement				
Permits for removal must be obtained from the Department of Environment, Forestry and Fisheries (DEFF) prior to the cutting or clearing of the affected species, and they must be filed; and from the Department of Agriculture, Environmental Affairs, Rural Development and Land Reform for protected plants	DPM	Undertake the permitting process in order to obtain the relevant permits for the removal of protected species. Permits must be kept on file	Pre-construction	ECO, ESCO	Once, prior to the commencement of the construction phase and removal of the protected species	DEFF permits on file
The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;	ECO, ESCO	Ensure that the audit report indicates all species rescued and replanted and provides feedback in terms of compliance with the conditions of permits for replanting	During the Construction Phase and following the completion of the Construction Phase	ECO, ESCO	Once off or as and when required	ECO confirmed rescued and replanting programme implemented correctly.

Trees felled due to construction must be documented and form part of the Environmental Audit Report;	ECO, ESCO	Ensure that the audit report documents the	During the Construction Phase and following the	ECO, ESCO	Once off or as and when required	Documentation in audit report

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		details of trees felled	Completion of the Construction Phase			
Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	Contractor	Felled trees, vegetation cuttings and debris must be disposed of at a licensed waste disposal facility	During the Construction Phase	ECO, ESCO	Monthly	No felled trees, vegetation cuttings and Debris are Dumped in inappropriate locations and disposal certificates are available as proof of responsible disposal
Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator that is appropriately trained;	DPM and Contractor	A suitably qualified pest control operator must be appointed	Construction and Operation	ECO, ESCO	As and when the use of herbicides is required	Only registered pest control operators must be appointed and proof of their registration must be provided

A daily register must be kept of all relevant details of herbicide usage;	Contractor	Develop a daily register for the documentation of the details of herbicide usage	During the construction phase	ECO, ESCO	Monthly	Daily register provided by the pest control operator

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to **Section 5.3: Access restricted areas**.	Contractor in consultation with the cEO	Spatially demarcate protected species and sensitive vegetation and implement appropriate fencing where required as per section 5.3	During the construction phase	ECO, ESCO	Once, during the undertaking of the demarcation of the areas and the erection of the fencing	Demarcation and fencing is undertaken in-line with the requirements of section 5.3
Servitude:						
▯ Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager;	Contractor in consultation with the DPM	Identify areas of vegetation not to be trimmed.	Construction and Operation	ECO, ESCO, Operation and maintenance team	Monthly	An indication of the areas where vegetation has Not been Trimmed or where vegetation has been removed from access roads must be provided.
▯ Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the landowner and the EA holder;	Contractor	Clearing for access must be undertaken as per the requirements provided by the	During the construction phase	ECO, ESCO	Monthly, and as and when required	Proof must be provided that only agreed Upon areas Have been cleared

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		landowner and the EA holder				
Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognized waste disposal facility;	Contractor	Undertake removal of alien invasive vegetation in accordance with the relevant guideline relevant to the project area and ensure the vegetation is disposed of at a licensed waste disposal facility	Construction and Operation	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Proof must be provided that alien invasive vegetation has been cleared in accordance to the relevant guideline and that the vegetation was disposed of at a licensed waste disposal facility
Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280;	Contractor	Develop a procedure for the trimming of vegetation in terms of the listed requirements	Construction and operation	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Proof must be provided that vegetation is trimmed in accordance with the listed requirements
Debris resulting from clearing and pruning must be disposed of at a recognized waste disposal facility, unless the landowners wish to retain the cut vegetation;	Contractor	Dispose of the debris in accordance with the waste	Construction and operation	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Proof must be provided that the debris has been disposed of at a licensed

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		management plan				waste disposal facility
In the case of the development of new overhead transmission and distribution infrastructures, a one meter "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing that limit impact to the environment must always be considered.	Contractor	Develop a procedure for the cutting of vegetation for stringing purposes	Pre-construction& Construction	ECO, ESCO,	Once, prior to the commencement of construction	Proof of implementation of the procedure for the cutting of vegetation for stringing purposes

Impact management outcome: Minimise disturbance to fauna and avifauna.

5.11 ***Protection of fauna***

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;	dEO,cEO Contractor	Develop a procedure for dealing with livestock within the affected properties	Pre-construction and during the construction phase	ECO, ESCO	Once, prior to the commencement of construction and as and when required during the construction	Written consent provided by the landowner and proof of representation of the landowner during

					phase	interference

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The breeding sites of raptors and other wild bird species must be taken into consideration during the planning of the development programme;	dEO , cEO in consultation with the Contractor	Ensure that the planning and development programme considers breeding sites for wild bird species	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	The planning and development programme includes the consideration of breeding sites for wild bird species
Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present;	dEO , cEO in consultation with the Contractor	Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledglings	During the Construction Phase Operation Phase	ECO, ESCO, monthly, cEO and Operation and maintenance team weekly	Weekly, and as when required during the construction. Monthly, and as and when required during operation	Photographic record of intact breeding sites
Nesting sites on existing parallel lines must be documented;	dEO , cEO in consultation with the ECO, ESCO	Walk-downs of the existing lines located parallel to the project must be undertaken and nests and the details thereof documented	During the Construction Phase Operation Phase	ECO, ESCO, Operation and maintenance team	Quarterly, and as and when required	Details of walk-downs undertaken must be noted and kept on file and photographic records of nesting sites must be kept
Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;	dEO , cEO in consultation with the Contractor	All mitigation measures recommended by the avifauna	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Monthly during construction and monthly during operation	Photographic record of compliance and successful

						implementation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		specialist must be implemented				of the recommended measures
Bird guards and diverters must be installed on the newline as per the recommendations of the specialist;	dEO, cEO in consultation with the Contractor	Recommendations made by the specialist for the installation of bird guards and diverters must be adhered to and implemented as appropriate. Bird guards and diverters must be maintained	During the Construction Phase Operation Phase	ECO, ESCO, Operation and maintenance team	Monthly, and as and when required	Photographic record of implementation and maintenance of bird guards and diverters
No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;	dEO, cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of poaching is reported

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No deliberate or intentional killing of fauna is allowed;	dEO,cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of deliberate or intentional killings reported
In areas where snakes are abundant, snake deterrents are to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages	dEO,cEO in consultation with the Contractor	Implement and maintain snake deterrents on pylons in areas where snakes are abundant	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Once, during the construction of the pylons and as and when required. Monthly during operation	Photographic record of the implementation and maintenance ofsnake deterrents
No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.	DPM in consultation with the dEO	Undertake a permitting process to obtain the required permits	Pre-construction	ECO, ESCO	Once, prior to the commencement t of construction and as and when required	Permits for removal and/relocation must be kept on file and be readily available

5.12 ***Protection of heritage resources***

Impact management outcome: Minimise impact to heritage resources.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in Section 5.3: Access restricted areas;	DPM and a suitably qualified specialist dEO, cEO in consultation with the Contractor and ECO	Undertake a Heritage Walk-through Survey Spatially identify and demarcate areas of heritage significance as per the Heritage Impact Assessment and the Heritage Walk-through Report and as per the requirements of section 5.3	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Proof of Avoidance of sensitive heritage features through details of avoidance and photographic records
Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;	dEO (in consultation with specialists if/as required).	Ensure construction staff are adequately informed (via	During the Construction Phase	ECO, ESCO	Monthly, or as required	Environmental awareness training includes measures

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		environmental awareness training) to carry out monitoring of excavations for fossils, artefacts and important heritage material				relating to monitoring for chance finds
All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.	dEO, cEO in consultation with the Contractor and ECO, ESCO	Develop and implement procedures for situations where human remains, archaeological, palaeontolgoical or historical material are uncovered	During the Construction Phase	ECO, ESCO	As and when required	Proof of work ceased and the required procedures followed in cases where material is discovered.

5.13 ***Safety of the public***

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO in consultation with the Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction Construction	cEO, ESCO	Once, prior to the commencement of construction and weekly during the construction phase	Compliance with the Emergency Preparedness, Response and Fire Management Plan
All unattended open excavations must be adequately fenced or demarcated;	Contractor	Ensure that all excavations undertaken is fenced and demarcated within a reasonable timeframe and in instances where excavations will be open for long-periods of time	During the Construction Phase	cEO, ESCO	Weekly	Excavations are fenced where required and photographic proof can be provided
Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;	Contractor	All staff must be easily identifiable and the climbing of towers and scaffolding must only be undertaken by	During the construction phase	ECO, ESCO	Monthly, and as and when required	No incidents of unauthorised climbing is reported

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		authorised personnel as managed by the Contractor				
Ensure structures vulnerable to high winds are secured;	Contractor	Ensure that sufficient stabilisation measures are implemented to secure structures vulnerable to high winds	During the construction phase	cEO	Weekly, and as and when required	No incidents of unstable structures due to high winds is reported
Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	cEO	Compile and regularly update as incidents and complaints are submitted from the public and indicate the actions taken to resolve the complaint	During the construction phase	ECO, ESCO	Monthly, and as and when required	The incidents and complaints register is complete and provides all the required details

5.14 ***Sanitation***

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Mobile chemical toilets are installed onsite if no other ablution facilities are available;	Contractor	Mobile chemical toilets must be placed appropriately and in areas that avoid environmental sensitivities	During the Construction Phase	cEO	Weekly	Mobile toilets are installed and avoid environmental sensitivities
The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;	Contractor in consultation with the cEO	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement.	Pe-construction& Construction	ECO, ESCO	Monthly, and as and when required	No evidence of non-compliance identified

– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body;	Contractor in consultation with the cEO	The installation of the toilets by the Contractor must be as per	During the Construction Phase	cEO, ESCO, ECO	Weekly	No evidence of non-compliance identified

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;		the listed requirements				
A copy of the waste disposal certificates must be maintained.	Contractor	Certificates obtained from the licensed waste disposal facility with the emptying of the toilets must be kept on file	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Certificates for waste disposal from the licensed waste disposal facility available on site

5.15 ***Prevention of disease***

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Undertake environmentally friendly pest control in the camp area;	Contractor	Only environmentally-friendly pest control must be used, when required	During the Construction Phase	ECO, ESCO	As and when pest control is required for the project	Contractor to provide proof of pest control used being environmentally-friendly
Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/ AIDS;	cEO, Contractor in consultation with the ECO, ESCO	The effects of sexually transmitted diseases and HIV/ AIDS must be covered in the Environmental Awareness Training	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement t of construction and monthly during construction	Environmental awareness training material requirements checklist
The Contractor must ensure that information posters on HIV/ AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/ AIDS	During the Construction Phase	cEO	Weekly	Photographic evidence of poster placement
Information and education relating to sexually transmitted diseases to be made available to both	cEO, Contractor in	Information and education of sexually	Pre-construction& Construction	ECO, ESCO	Monthly	Environmental awareness training material

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
construction workers and local community, where applicable;	consultation with the ECO, ESCO	transmitted diseases must be covered in the Environmental Awareness Training.				requirements checklist
Free condoms must be made available to all staff onsite at central points;	Contractor	Placement of free condoms in mobile toilets and at the construction camps	During the Construction Phase	ECO, ESCO	Monthly	Proof of placement of free condoms by the contractor to be provided
Medical support must be made available;	dEO,cEO in consultation with the Contractor	Ensure that designated personnel with first aid training are available on site and that first aid kits to provide medical support is readily available	Construction and Operations	ECO, ESCO	Monthly	Check the availability of first aid trained personnel and medical kits (including if these are complete in terms of supplies)
Provide access to Voluntary HIV Testing and Counselling Services.	Contractor	Compile a HIV testing schedule and provide counselling services where required	During the Construction Phase	ECO, ESCO	Quarterly, and as and when required	Voluntary testing schedules and proof of counselling(where undertaken)

5.16 ***Emergency procedures***

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Compile an Emergency Response Action Plan (ERAP)prior to the commencement of the proposed project;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan compiled
The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project which covers accidents, potential spillages and fires	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan includes required specifications

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All staff must be made aware of emergency procedures as part of environmental awareness training;	cEO,dEO in consultation with the ECO	Develop environmental awareness training material which covers the relevant emergency procedures	Pre-construction	ECO, ESCO	Prior to the commencement t of the environmental awareness training	Environmental awareness training material requirements checklist
The relevant local authority must be made aware of a fire as soon as it starts;	Contractor in consultation with the ECO, ESCO	Develop and include a procedure in the Emergency Preparedness, Response and Fire Management Plan for the event of a fire and the procedure to be followed for informing the local authority	Construction	ECO, ESCO	As and when a fire occurs	The local authority was informed as per the relevant procedure setout in the Emergency Preparedness, Response and Fire Management Plan
In the event of emergency, necessary mitigation measures to contain the spill or leak must be implemented (see **Hazardous Substances section 5.17**).	Contractor	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction and Operations	ECO, ESCO	As and when a spill or leak occurs	The mitigation measures included under Section 5.17 have been adhered to

5.17 ***Hazardous substances***

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	cEO in consultation with the Contractor	Develop a strategy of how hazardous substances can be and should be minimised	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly During the construction phase	Contractor to provide evidence of substances used for proof of compliance
All hazardous substances must be stored in suitable containers as defined in the Method Statement;	Contractor	Develop a Method Statement for the storage of hazardous substances in	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement t of construction and monthly during the	Photographic proof that hazardous substances are stored in suitable containers as

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		suitable containers			construction phase	per the requirements of the relevant Method Statements
Containers must be clearly marked to indicate contents, quantities and safety requirements;	Contractor	Where hazardous waste is stored these must be clearly marked indicating the required details of the contents	During the Construction Phase	ECO, ESCO	Monthly	Photographic proof that containers are marked as per the requirements
All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;	Contractor	Ensure that storage areas are sufficiently bunded which are of sufficient capacity to contain a spill / leak from the stored containers	During the Construction Phase	ECO, ESCO	Monthly during the Construction Phase	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity tocontain a spill / leak from the stored containers
Bunded areas to be suitably lined with a SABS approved liner;	Contractor	Ensure that bunded storage areas are suitably lined	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase	Photographic proof that bunded storage areas are suitably lined

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;	cEO, Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS) control sheet specific to the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complete and up to date control sheet provided by the Contractor
All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	cEO, Contractor	Keep a record of all hazardous chemicals and the respective MSDS	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Record of hazardous chemicals and the respective MSDS
All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;	cEO,Contractor	Provide training for personnel working with HCS	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	Record of training provided to personnel working with HCS
Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;	cEO,Contractor	Develop environmental awareness training material which covers the relevant impacts and safety measures.	Pre-construction& Construction	ECO, ESCO	Prior to the commencement of the environmental awareness training and monthly during the construction phase for personal	Environmental awareness training material requirements checklist and all relevant personnel have undergone appropriate training

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous substances and materials			protective equipment	have access to personal protective equipment
The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	Contractor	Appropriate storage facilities must be constructed or obtained for the storing of diesel, other liquid fuel, oil and hydraulic fluid	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage tanks for the project are appropriate and no incidents are reported in this regard
The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crestof the bund and the volume inside the bund must be130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);	Contractor	Appropriate storage facilities must be constructed or obtained for tanks as per the requirements listed	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage areas for the tanks/ bowsers for the project are appropriate and no incidents are reported in this regard

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The floor of the bund must be sloped, draining to an oil separator;	Contractor	Appropriate storage facilities must be constructed as per the requirements listed	During the Construction Phase	ECO, ESCO	Once, during construction	Bunded storage areas are constructed according to the requirements
Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;	Contractor	Appropriately constructed refueling facility must be developed as per the requirements. Drip trays must be provided for use	During the Construction Phase	ECO, ESCO, cEO	Monthly Weekly	Soils at the refueling facility are protected as required and drip trays are provided and used
All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that empty dirty drums are stored appropriately as per the requirements	During the Construction Phase	ECO, ESCO,cEO	Monthly Weekly	Drip trays or bunded areas are used for the storage of dirty drums

▯ No unauthorised access into the hazardous substances storage areas must be permitted;	Contractor	Ensure through the implementation of procedures that no unauthorised access is	During the Construction Phase	ECO, ESCO	Monthly	Proof of the implementation of the relevant procedure must be provided by the contractor

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		undertaken into the storage areas				
▯ No smoking must be allowed within the vicinity of the hazardous storage areas;	Contractor	Inform all employees of the requirement and develop and place relevant signage in the relevant areas	During the Construction Phase	ECO, ESCO,cEO	Monthly Weekly	Photographic record of the signage placed must be provided
▯ Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting equipment	During the Construction Phase	ECO, ESCO	Monthly	Adequate fire-fighting equipment is available and has been serviced

Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used;	Contractor	Provide a mobile refueling unit as well as suitable ground protection, where required	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	A mobile refueling unit and suitable ground protection is available for use
An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;	Contractor	Provide an appropriate spill kit for the project for the use of hazardous substances	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The responsible operator must have the required training to make use of the spill kit in emergency situations;	cEO and Contractor	Provide training on the use of spill kits to the relevant employees	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Proof of training to be provided by the contractor
An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;	cEO and Contractor	Provide an appropriate number of spill kits in relevant areas	During the Construction Phase	ECO, ESCO	Monthly	Proof of appropriate number of spill kits in appropriate areas to be provided by the contractor

In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and waste water management and 5.8 for solid and hazardous waste management.	cEO and Contractor	Storage and disposal of contaminated soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and 5.8 of this EMPr	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Proof of storage and disposal in terms of the National Environmental Management: Waste Act must be provided. Certificates of Disposal at licensed waste disposal facilities must be provided

5.18 ***Workshop, equipment maintenance and storage***

Impact management outcome: Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;	Contractor	Demarcate specific areas for the maintenance of vehicles and equipment	During the Construction Phase	ECO, ESCO	Monthly	A dedicated area for the maintenance of vehicles and machinery is used.

During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil.	Contractor	Ensure that a drip tray is available for an emergency repairs required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide evidence of drip tray use for emergency repairs
Leaking equipment must be repaired immediately orbe removed from site to facilitate repair;	Contractor	Ensure that where leaking equipment is identified it is repaired immediately or removed from site for repairs	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide details of equipment repaired or removed from site
Workshop areas must be monitored for oil and fuel spills;	cEO	Undertake regular inspections of the workshop areas for oil and fuel spills and keep an updated register of inspection on site	During the Construction Phase	ECO, ESCO	Monthly	Register of inspection
Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	Contractor	Provide an appropriate spill kit for the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use
The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;	Contractor	Ensure that the workshop area is sufficiently bunded in accordance with the required specification	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase and as and when required	Workshop area is bunded in accordance with the required specification

Water drainage from the workshop must be contained and managed in accordance with Section 5.7: storm and waste water management.	Contractor	Ensure that water drainage from workshop area is managed as per the requirements of section 5.7	During the Construction Phase	ECO, ESCO	Monthly	Workshop drainage is Managed in accordance with the requirements

5.19 ***Batching plants***

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Concrete mixing must be carried out on an impermeable surface;	Contractor	Provide impermeable surface for the mixing of concrete	During the Construction Phase	cEO, ESCO	Weekly	No concrete mixing is Undertaken on open ground
Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	Contractor	Implement measures for the control and management of cement laden water	During the construction phase	cEO, ESCO	Weekly	No mismanagement of laden water due to the temporary concrete batching plant

▯ Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	Contractor	Implement measures for the control and management of dirty water to prevent soil and groundwater contamination	During the construction phase	cEO, ESCO	Weekly	No mismanagement of dirty water due to the temporary concrete batching plant and no/minimal soil and groundwater contamination

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;	Contractor	Demarcate and provide a storage area for bagged cement in-line with the listed requirements	During the Construction Phase	cEO, ESCO	Weekly	Photographic proof of bagged cement stored within the demarcated area
▯ A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provide a washout facility for the washing of associated equipment. Enforce limitations on water use for washing of equipment	During the Construction Phase	cEO, ESCO	Weekly	No cement laden water is released into the environment. Only minimal water is used for washing

▯ Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licensed disposal facility;	Contractor	Make use of hardened concrete where possible or Dispose of concrete in a suitable manner	During the Construction Phase	ECO, ESCO	Monthly	Certificates of disposal of concrete at licensed waste disposal facility
▯ Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;	Contractor	Bind empty cement bags and temporarily store it in an appropriate area on site	During the Construction Phase	ECO, ESCO	Monthly	Proof of binding of empty cement bags and storage in an appropriate are on site to be provided by the Contractor
▯ Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions)	Contractor	Ensure that sand and aggregates are kept damp or otherwise protected from dust generation	During the Construction Phase	ECO, ESCO	Monthly	Proof of Damping (or alternative dust suppression) of sand and aggregates must be provided by the Contractor
▯ Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility;	Contractor	Ensure that all excess sand, stone and cement is removed or reused	At the completion of the Construction Phase	ECO, ESCO	Once, with the completion of construction	Certificates for the disposal of sand, stone and cement at licensed waste disposal facilities or proof of reuse must be provided
▯ Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.	Contractor	Erect Temporary fencing	During the construction phase	cEO	Weekly	Temporary fencing around batching plants

5.20 ***Dust emissions***

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;	Contractor	Apply appropriate dust suppressant. No potable water may be used.	During the Construction Phase	cEO, ESCO, ECO	Weekly	Contractor to provide proof of use of appropriate dust suppressants
Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible;	Contractor	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	During the Construction Phase and Rehabilitation	cEO, ESCO	Weekly	Plan for implementation must be provided by the Contractor
Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	Contractor	Ensure that specific limitations are placed on the transport and Handling of erodible materials during high wind conditions or when a visible	During the Construction Phase	cEO, ESCO	Bi-weekly (every second week)	No complaints submitted in this regard

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		dust plume is present				
During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;	ECO	ECO to provide adequate recommendations	During the Construction Phase	Not Applicable		
Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor	Place soil stockpiles in areas less affected by wind	During the Construction Phase	cEO, andESCO	Bi-weekly (every second week) Monthly	Soil stockpiles are adequately protected from wind erosion
Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;	Contractor in consultation with the ECO, ESCO	Contractor to implement erosion control measures as recommended and agreed with the ECO	During the Construction Phase	cEO, ESCO	Weekly, until erosion is no longer a problem	Recommendations made by the ECO have been implemented by the Contractor
Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;	cEO,dEO,contractor	Inform all drivers of speed limits and place appropriate signage along the relevant roads	During the Construction Phase Operation Phase	ECO, ESCO Operation and Maintenance team	Monthly	No complaints from community members are submitted

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;	Contractor	Ensure that straw stabilisation is undertaken asper the listed requirements	During the Construction Phase	ECO, ESCO	Monthly	Photographic record of all straw stabilisation undertaken
▯ For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	Contractor	Appropriate dust suppressant measures are implemented	During the Construction Phase	cEO, ESCO	Weekly	Photographic record of measures being implemented and the results thereof

5.21 ***Blasting***

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Any blasting activity must be conducted by a suitably licensed blasting contractor; and	N/A					
▯ Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	N/A					

5.22 ***Noise***

Impact Management outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Contractor must keep noise level within acceptable limits. Restrict the use of sound amplification equipment for communication and emergency only;	Contractor	Ensure that noise limits do not exceed acceptable limits and avoid the use of amplification communication	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. No amplification equipment is used.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor	Provide and implement silencing technology	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. Silencing technology is utilised.
Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;	cEO	Update complaints register. Provide daily transport to and from site for employees	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complaints register provided by the cEO and proof of transportation services provided

Develop a Code of Conduct for the construction phase in terms of behavior of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	cEO and Contractor in consultation with the ECO, ESCO	Compile a Code of Conduct for staff. Appropriate operating hours must be identified for the project.	Pre-construction and Construction	ECO, ESCO	Once, prior to the commencement of construction	No complaints registered in this regard.

5.23 ***Fire prevention***

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Designate smoking areas where the fire hazard could be regarded as insignificant;	cEO, Contractor	Identify and demarcate through signage designated smoking areas	Pre-construction& Construction	ECO, ESCO	Monthly	Photographic record of designated smoking area
Firefighting equipment must be available on all vehicles located on site;	cEO,dEO in consultation with the Contractor	Provide all vehicles with firefighting equipment	Construction	ECO, ESCO	Monthly	All vehicles are fitted with firefighting equipment and the details thereof are provided by the cEO

The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO in consultation with the ECO, ESCO	Undertake formal consultation to inform the local FPA of the associated construction activities	Pre-construction	ECO, ESCO	Once, during the commencement of the Construction Phase	Proof of consultation with the FPA
Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;	dEO, cEO, Contractor in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the contact numbers for the FPA and emergency services. Place the contact numbers for the FPA and emergency services at a visible and central location	Pre-construction& Construction	ECO, ESCO	Prior to the commencement of the environmental awareness training and once during the construction phase	Environmental awareness training material requirements checklist and photographic record of contact numbers on display
Two-way swop of contact details between ECO and FPA.	ECO, ESCO	Consultation between the ECO and FPA in order to exchange contact details	Pre-construction	Not Applicable		

5.24 ***Stockpiling and stockpile areas***

Impact management outcome: Erosion and sedimentation as a result of stockpiling are reduced.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, wetlands and water bodies;	Contractor	Identify and demarcate an appropriate location for the storage of excavated materials	Pre-construction& Construction	ECO, ESCO	Monthly	Excavated material is not stored within sensitive environmental areas
▯ All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;	Contractor	Implement appropriate and sufficient maintenance on stockpiled material regularly	During the Construction Phase	cEO ECO, ESCO	Bi-weekly (every second month) Monthly	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
▯ Topsoil stockpiles must not exceed 2 m in height;	Contractor	Enforce limitations for the height of topsoil stockpiles	During the Construction Phase	cEO ECO, ESCO	Bi-weekly (every second month) Monthly	Topsoil stockpiles do not exceed 2m in height
▯ During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	Contractor	Appropriate material must be provided in order to cover stockpiles when required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of appropriate material to

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**

						cover stockpiles when required
Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor	Sandbags must be provided in order to prevent erosion of stockpiled materials	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of sandbags to prevent erosion of stockpiled materials

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.

5.25 Finalising tower positions

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No vegetation clearing must occur during survey and pegging operations;	Contractor	Implement restrictions in terms of vegetation clearing during the survey and pegging operations	Pre- construction	cEO, ESCO	Weekly	Contractor to provide photographic proof that no vegetation has been cleared

▯ No new access roads must be developed to facilitate access for survey and pegging purposes;	Contractor	Restrict the development of new access roads for survey and pegging purposes	Pre- construction	cEO	Weekly	Contractor to provide photographic proof that no new roads have been developed
▯ Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas;	DPM, Suitably Qualified Specialist and Contractor	Undertake consultation between the relevant responsible people and finalise the tower positions for the power line	Pre- construction	ECO, ESCO	Once the final tower positions have been finalised and agreed upon	Provision of final tower positions to the ECO
▯ The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.	Surveyor in consultation with the ECO, ESCO	Undertake consultation between the surveyor and the ECO	Pre- construction	cEO, ESCO, ECO	Weekly	Consultation with the ECO regarding the distribution of pegs.

5.26 Excavation and Installation of foundations

Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal site, if not used for backfilling purposes;	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	ECO, ESCO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility
Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction and Rehabilitation	ECO, ESCO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor
Management of equipment for excavation purposes must be undertaken in accordance with Section 5.18: Workshop equipment maintenance and storage; and	Contractor	Undertake the management of equipment for excavation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18

▯ Hazardous substances spills from equipment must be managed in accordance with Section 5.17: Hazardous substances.	Contractor	Undertake the management of hazardous substances spills from equipment as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances spills from equipment is undertaken in line with the requirements of section 5.17
▯ Batching of cement to be undertaken in accordance with Section 5.19: Batching plants;	Contractor	Ensure correct batching of cement	During the construction phase	cEO, ESCO	Weekly	Measures in place to ensure the batching of cement is done in accordance with Section 5.19: Batching plants
▯ Residual cement must be disposed of in accordance with Section 5.8: Solid and hazardous waste management.	Contractor	Undertake the disposal of residual cement as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The disposal of residual cement is undertaken in line with section5.8.

5.27 Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Prior to erection, assembled towers and tower sections must be stored on elevated surfaces (suggest wooden blocks) to minimise damage to the underlying vegetation;	Contractor	Provide the necessary materials for the elevated surface, where towers are to be placed on indigenous vegetation	During the Construction Phase	cEO,	Weekly	Implementation of elevated surface and photographic record thereof
In sensitive areas, tower assembly must take place off-site or away from sensitive positions;	Contractor in consultation with the cEO and the ECO, ESCO	Identify sensitive areas to be avoided by tower assembly and ensure that the areas are not infringed upon	Pre-construction& Construction	cEO, ESCO	Weekly	Tower assembly is undertaken outside of sensitive areas
The crane used for tower assembly must be operated in a manner which minimises impact to the environment;	Contractor in consultation with the cEO and the ECO, ESCO	Ensure that no impact to the environment is imposed during the operation of the crane	Pre-construction& Construction	cEO, ESCO	Weekly	No environmental damages incurred as a result of the crane.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The number of crane trips to each site must be minimised;	Contractor in consultation with the cEO and the ECO, ESCO	Ensure that the utilisation of the crane is maximised when on site.	Pre-construction& Construction	cEO	Weekly	Few crane trips to each site observed.
Wheeled cranes must be utilised in preference to tracked cranes. However, Rocky terrain may require tracked cranes in the project site.	Contractor	Ensure wheeled cranes are utilised, where practical.	Pre-construction& Construction	cEO	Weekly	Wheeled cranes observed on site.
Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact;	Contractor	Contractor to undertaken erecting of towers in an environmentally acceptable manner	During the Construction Phase	ECO, ESCO	Monthly	No unacceptable environmental impacts occur with the erecting of the towers
Access to tower positions to be undertaken in accordance with access requirements specified in **Section 5.4: Access Roads**;	Contractor	Undertake access to tower positions as per the requirements of section 5.4	During the Construction Phase	ECO, ESCO	Monthly	Access to tower positions are undertaken asper the requirements of section 5.4
Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in **Section 5.10: Vegetation clearing**;	Contractor	Undertake vegetation clearance as per the requirements of section 5.10	During the Construction Phase	cEO, ESCO	Weekly	Vegetation clearance is undertaken as per the requirements of section 5.10

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor;	Contractor in consultation with the DPM and DSS	Written permission for levelling at tower sites, if required, must be obtained from the DPM and DSS prior to the undertaking of any levelling activities	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Written permission from the DPM and DSS provided to the Contractor
Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites;	Contractor	Implement appropriate measures to ensure that topsoil is removed from subsoil material	Construction and Rehabilitation	cEO	Weekly, and as and when required	Proof of appropriate measures implemented must be provided by the Contractor
Topsoil must be stored in heaps not higher than 2m to prevent destruction of the seed bank within the topsoil;	Contractor	Implement the listed requirements for the storage of topsoil	During the Construction Phase	cEO, ESCO	Weekly	Topsoil is stored as per the listed requirements
Excavated slopes must be no greater that 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes;	Contractor	Implement the listed requirements for the excavation of slopes	During the Construction Phase	cEO, ESCO	Weekly	Excavation of Slopes is undertaken as per the listed requirements

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
▯ Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed;	cEO, dEO, contractor	Ensure all pieces greater than 150 mm falling beyond the Working Area, are collected and removed and implement measures to try and minimise fly rock from blasting activity.	Pre-Construction Phase	ECO,EO, ESCO	During blasting activities	ECO/EO to confirm necessary measures have been undertaken to minimise fly rock from blasting activity and that no pieces greater than 150 mm are beyond the working area.
▯ Only existing disturbed areas are utilised as spoil areas;	Contractor in consultation with the ECO, ESCO	Identify, demarcate and use existing disturbed areas for spoil areas	Pre-construction& Construction	cEO, ESCO, ECO	Weekly	Only identified disturbed areas are used as spoil areas
▯ Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum;	Not Applicable					
▯ Surface water runoff is appropriately channelled through or around spoil areas;	DPM and Contractor	Design and implement appropriate surface runoff measures for spoil areas	Pre-construction& Construction	ECO, ESCO	Once, during the construction of the surface runoff measures	Implementation of surface runoff measures through and/or around spoil areas

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that;	Contractor	Develop and implement backfilling procedures which ensures that topsoil is not placed at the bottom of foundations.	Pre-construction& Construction	cEO	Weekly	Backfilling operations are undertaken as per the procedures developed
The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation;	Contractor	Rehabilitation of the surface spoil must be undertaken in accordance with the requirements of section 5.29	Rehabilitation	cEO, ESCO, ECO	Weekly	Rehabilitation of the surface spoilis undertaken as per the requirements of section 5.29
The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken, when possible, at the beginning of the dry season.	Contractor	Ensure that topsoil is spread evenly and compacted appropriately. This must be undertaken outside of the start of the dry season, where possible	Rehabilitation	cEO, ESCO	Weekly	Proof that topsoil has been spread evenly and compacted correctly must be provided by the Contractor/ cEO. Proof that the activities were undertaken outside of the start of the dry

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						season (or motivation as to why this was not possible) must be provided by the Contractor

5.28 Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid Access restricted areas and other sensitive areas;	Contractor in consultation with the ECO	Identify and demarcate areas appropriate for the siting of winch and tensioner stations which does not infringe on access restricted areas	Pre-construction& Construction	cEO, ESCO, ECO	Weekly	Winch and tensioner stations are located outside of identified sensitive areas

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		or environmentally sensitive areas				
The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks;	Contractor	Provide sufficient drip trays	During the Construction Phase	cEO	Weekly	Sufficient drip trays are available for the winch and tensioner stations and no spills occur
Refueling of the winch and tensioner stations must be undertaken in accordance with **Section 5.17: Hazardous substances;**	Contractor	The refueling of winch and tensioner stations must be undertaken as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	The refueling of winch and tensioner stations is undertaken as Per the requirements of section 5.17
In the case of the development of overhead transmission and distribution infrastructure, a one meter "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and handheld implements, with vegetation being cut off at ground level. No tracked or wheeled mechanized equipment must be used;	Contractor	Develop and implement procedures for implementation for vegetation clearing during stringing in line with the specification.	Pre-construction& Construction	ECO, ESCO and cEO weekly during stringing	Once, prior to the commencement of construction and weekly during stringing	Implementation of the procedures put in place and proof thereof from the Contractor

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter;	Contractor	Identify and implement the stringing method with the least environmental impact	During the Construction Phase	cEO	Weekly	Implementation of identified method of stringing with the least environmental impact
Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing;	Contractor	Identify prior to construction areas where protection measures will be required during stringing. Where access is to be restricted timeous written notice must be provided to the affected parties	Pre-construction& Construction	ECO, ESCO	Monthly, and as and when required	Proof of implementation of protection measures and proof of written notice to affected parties must be provided by the Contractor

▯ No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing;	Contractor in consultation with the cEO, DPM and dEO	Avoid the damaging or disturbance of existing services. Where services will be disrupted timeous notice must be provided to the affected parties	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written notice to affected parties must be provided by the Contractor
▯ Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner;	Contractor in consultation with the cEO, DPM and dEO	Agree crop protection requirements with landowner.	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written notice to affected parties must be provided by the Contractor
▯ Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.	Contractor in consultation with the cEO, DPM and dEO	Agree required actions with landowner.	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written notice to affected parties must be provided by the Contractor

5.29 Socio-economic

Impact management outcome: Socio-economic development is enhanced.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Develop and implement communication strategies to facilitate public participation;	dEO / cEO	Identify and implement appropriate strategies for communication with the communities through consideration of the community needs	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction	Communication is undertaken as per the identified strategies and no complaints are submitted regarding communication
Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;	Contractor	Development and implement Grievance Mechanism which considers the community needs and provides procedures for conflict resolution	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Conflict resolution is undertaken in line with the requirements of the Grievance Mechanism. No complaints on conflict resolution is submitted by the community

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Sustain continuous communication and liaison with neighboring owners and residents	Contractor	Development and implement and Grievance Mechanism provides procedures for communication / liaison with neighboring landowners and residents	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Communication / liaison with neighboring landowners and residents are undertaken in line with the requirements of the Grievance Mechanism. No complaints on communication with neighboring landowners and residents is submitted
Create work and training opportunities for local stakeholders; and	Contractor	Develop and implement a "locals first" policy for the provision of employment opportunities	Pre-construction& Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	The "locals first" policy is considered in terms of the employment and training opportunities

Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	Contractor	Ensure no workers are permitted to stay over night on the site	Construction	ECO, ESCO	Throughout construction	No workers remaining on site over night

5.30 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in **sections 5.17: management of hazardous substances** and **5.18 workshop, equipment maintenance and storage**;	Contractor	Regular emptying of the bunds must be undertaken. This must be undertaken as per the requirements listed in sections 5.17 and 5.18	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirements listed under sections 5.17 and 5.18
Hazardous storage areas must be well ventilated;	Contractor	Install appropriate ventilation in all hazardous storage areas	During the construction phase	ECO, ESCO	Prior to site closure for more than 05 days	Effective ventilation is installed in hazardous storage areas

Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor,cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure service records and kept up to date and filed	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records
Emergency and contact details must be displayed;	Contractor, cEO	Place emergency and contact details which are readily available and easily accessible	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Photographic proof of contact details on display
Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;	Contractor in consultation with the ECO, ESCO	Hold a workshop with all security personnel to provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel	Pre-construction& construction	ECO, ESCO	Prior to site closure for more than 05 days	Proof of the workshop held must be kept on file by the contractor.

Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;	Contractor	Regular checks of night hazards must be undertaken	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of checks of night hazards must be provided by the contractor

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO / Contractor in consultation with the ECO, ESCO	Identify any potential fire hazards and notify the relevant local authority	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of notification of the fire hazards to the local authority must be provided by the Contractor
Structures vulnerable to high winds must be secured;	Contractor	Ensure structures vulnerable to wind are secure prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Structures vulnerable to wind are secured prior to site closure
Wind and dust mitigation must be implemented;	Contractor	Implement wind and dust mitigation prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Wind and dust mitigation is implemented prior to site closure
Cement and materials stores must have been secured;	Contractor	Ensure cement and material stores are secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Cement and material stores are secured prior to site closure

Toilets must have been emptied and secured;	Contractor	Ensure toilets are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Toilets are emptied and secured prior to site closure
Refuse bins must have been emptied and secured;	Contractor	Ensure refuse bins are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	refuse bins are emptied and secured prior to site closure
Drip trays must have been emptied and secured.	Contractor	Ensure drip trays are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Drip trays are emptied and secured prior to site closure

5.31 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**

▯ All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided;	Contractor	Develop and implement a rehabilitation plan for the rehabilitation of all disturbed areas. Dispose of all spoil and waste at a licensed waste disposal facility	Pre-construction& Rehabilitation	cEO, ESCO	Weekly	Rehabilitation of the disturbed areas is undertaken as per the rehabilitation plan. All certificates of waste disposal at licensed facilities are available.
▯ All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether contouring is required	Rehabilitation	cEO	Weekly	All slopes are assessed and contoured as required
▯ All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether terracing is required	Rehabilitation	cEO	Weekly	All slopes are assessed and terraced as required
▯ Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;	Contractor	Ensure all berms have a slope of 1:4 and is replanted with indigenous species and grasses	Rehabilitation	cEO, ESCO	Weekly	All berms have a slope of 1:4 and is replanted with indigenous species and grasses

Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;	Not applicable					
Rehabilitation of tower sites and access roads outside of farmland;	Not applicable					
Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Make use of indigenous species for rehabilitation	Rehabilitation	cEO, ESCO	Weekly	Indigenous species are used for rehabilitation

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Stockpiled topsoil must be used for rehabilitation (refer to **Section 5.24: Stockpiling and stockpiled areas**);	Contractor	Ensure stockpiled topsoil is used as per the requirements listed under section 5.24	Rehabilitation	cEO	Weekly	Stockpiled topsoil is used asper the requirements listed under section 5.24
Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;	Contractor	Ensure that topsoil is spread evenly	Rehabilitation	cEO, ESCO	Weekly	Topsoil is spread evenly
Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	Contractor	Remove all visible weeds from placement area and topsoil before spreading the topsoil	Rehabilitation	cEO, ESCO	Weekly	No weeds are visible in the placement area or the topsoil

Subsoil must be ripped before topsoil is placed;	Contractor	Undertake the ripping of subsoil prior to the spreading of topsoil	Rehabilitation	cEO	Weekly	Subsoil is ripped before topsoil is placed
The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;	Contractor	Plan the timeframe for rehabilitation in order to undertake vegetation planting during the optimal time for vegetation establishment	Rehabilitation	ECO, ESCO	At the start of rehabilitation to confirm correct timeframe	Rehabilitation is undertaken during the optimal time
Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	cEO	Weekly	Disturbed slopes are stabilised sufficiently
Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;	Contractor	Stabilise slopes as per the design specifications	Pre-construction& Rehabilitation	cEO, ESCO	Weekly	Slopes are stabilised as per the design specifications
Spoil can be used for backfilling or landscaping as longas it is covered by a minimum of 150 mm of topsoil.	Contractor	Spoil used for landscaping must be appliedas per the listed requirements	Rehabilitation	cEO, ESCO	Weekly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor

– Where required, re-vegetation including hydro- seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included;	Contractor in consultation with a suitably qualified specialist	Make use of a suitable vegetation seed mixture should enhancement be required	Rehabilitation	ECO, ESCO	As and when required	Use of a suitable vegetation seed mixture if required
c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

6. SITE SPECIFIC INFORMATION AND DECLARATION

6.1 Sub-section 1: contact details and description of the project

6.1.1 Details of the applicant

PROJECT APPLICANT DETAILS	
DEVELOPMENT ENTITY	
Applicant Name	Western Cape Wind Farm (RF) (Pty) Ltd
Responsible Person	Mr Matteo Giulio Luigi Brambilla
Address	14th Floor Pier Place Heerengracht Street Foreshore Cape Town 8001
Contact Details	+27 (0)21 418 3940 (T) +27 (0)72 212 1531 (C) Email: m.logan@redrocket.energy

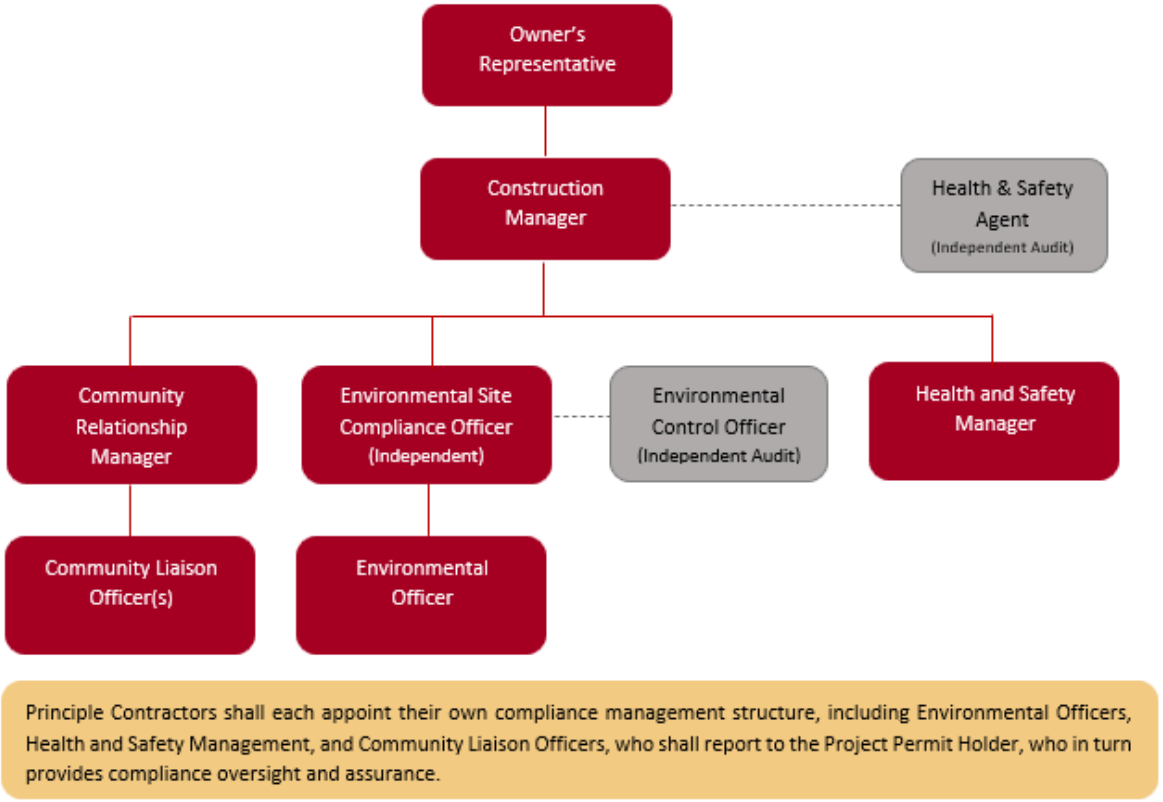


Figure 1: Organogram of the Applicant Company Structure

A suitably qualified ESCO must be appointed by the Applicant to monitor the project compliance onsite on a fulltime basis.

Responsibilities of the ESCO include:

- Be fully conversant with the BAR, the conditions of EA and the EMPr;
- Be fully conversant with all relevant environmental legislation and ensure compliance thereof;
- Approve method statements (co-approval with Site Manager);
- Remain employed until the completion of the construction activities; and
- Report to the Project Manager, including all findings identified onsite.

In addition, the ESCO will:

- Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation;
- Take appropriate action if the specifications contained in the EMPr and conditions of the environmental au thorisation are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and
- Ensure that activities onsite comply with all relevant environmental legislation.

6.1.2 Details and expertise of the EAP:

Details and expertise of the EAP:	
EAP Name	Ludwig van der Merwe - Terramanzi Group (Pty) Ltd
EAP Qualifications	BSc (with Hons) in Conservation Ecology from the University of Stellenbosch and a Master of Environmental Management and Development from the Australian National University
Professional Affiliation/Registration	EAPASA (2020/2817) SACNASP (Pr.Sci.Nat) (133969)
Physical Address	Unit 9, 16 Bell Crescent, Westlake Business Park, Westlake, Cape Town, 7945
Telephone	021 701 5228
Cellphone	082 575 3800
Email Address	environmental@terramanzi.co.za

The EMPr was compiled by: Ludwig van der Merwe (Terramanzi Group - EAPASA 2020/2817)
The EMPr was peer-reviewed by: Fabio Venturi (Terramanzi Group - EAPASA 2021/4088)
The EMPr was reviewed by: Tarryn Frankland (Terramanzi Group - EAPASA Candidate 2022/6205),
Bryan Cloete (Terramanzi Gorup), Ana Mosse (Terramanzi Group), and Chane Olckers (Terramanzi Group)

6.1.3 Project name

Proposed WCWEF 132kV Powerline to connect the authorised WCWEF to the National Grid via the Eskom Agulhas Main Transmission Substation.

6.1.4 Description of the project

Western Cape Wind Farm (Pty) Ltd received Environmental Authorisation, dated 12 December 2021 (DFFE Ref:14/12/16/3/3/1/2437) for the development of the 140MW Western Cape WEF within the Swellendam Local Municipality in the Western Cape Province. The project is located within the Overberg REDz 1.

Western Cape Find Farm (Pty) Ltd has undergone internal changes since the first authorisation was received on 12 December 2021.

The Applicant has also reiterated that should the Competent Authority decide to authorize this Application that it is imperative that the EMPr and corridor layout be approved as assessed and presented for approval to allow Project to comply with the requirements of the REIPPPP and reach financial close. Based on the findings of the professional team and the EAP, it is reasonable to suggest that the Competent Authority can approve both the EMPr and layout as applied for.

6.1.5 Project location

The Powerline will traverse 2 land parcels (farm portions) to connect from Western Cape Wind Energy Facility to the National Grid via the Eskom Agulhas Main Transmission Substation as presented in the following table:

Details of the land parcel(s) over which the proposed WCWEF 132kV Powerline will traverse

Cadastral Land Parcel	SG Code	Approximate Co-ordinates of the OHPL on land portion
Remaining extent of Farm Kluitjieskraal, 256	C07300000000025600000	34° 8'31.44"S, 20°21'50.13"E
Remaining extent of Portion 2 of Farm Kluitjieskraal, 256	C07300000000025600002	34° 8'27.00"S 20°20'56.61"E

The WCWEF 132kV Powerline will be located within the Western Cape Wind Energy Facility development area. The Wind Energy Facility will traverse the following farm portions: Remainder of portion 2of the farm Kluiitjieskraal No 256, Remainder of the farm Nooitgedacht A No 355, Portion 1 of the farm Nooitgedacht A No 355, Portion 2 of the farm Klein Croedinie No 356, Remainder of the farm Kluitjieskraal No 256, Portion 4 of the farm Kluitjieskraal No 256, Portion 3 of the farm Kluitjieskraal No 256, Portion 5 of the farm Kluitjieskraal No 256, Farm Burgerts Dal No 357, Farm Kluitjieskraal No 710 within the Swellendam Local Municipality in the Western Cape Province (Figure 2).

The approximate co-ordinates of Western Cape Wind Energy Facility in which the proposed 132kV OHPL will be located:

- Northern boundary: 34° 5'44.66"S; 20°22'53.16"E
- Eastern boundary: 34°11'5.33"S; 20°26'26.06"E
- Middle point: 34° 9'47.49"S; 20°22'9.03"E
- Southern boundary: 34°12'35.70"S; 20°25'35.77"E
- Western boundary: 34° 8'39.34"S; 20°19'45.39"E

Table 2: The Bend points GPS coordinates of the Overhead 132kV Powerline alignment is provided in the table below

OHPL	*Coordinates*	
Start Point	34° 8'48.32"S	20°21'12.58"E
Bend Point 1	34° 8'46.47"S	20°21'14.59"E
Bend Point 2	34° 8'43.94"S	20°21'11.41"E
Bend Point 3	34° 8'38.16"S	20°21'10.72"E
Middle Point	34° 8'16.45"S	20°20'44.10"E
Bend Point 4	34° 7'50.52"S	20°20'12.35"E
End Point	34° 7'45.51"S	20°20'18.92"E

Technical specification of the overhead transmission and distribution:

Tower Type	Steel or concrete towers can be utilised at the site. Alternatively, the towers can be of a hybrid nature, comprising concrete towers with top steel sections.
Pylon height	Up to 30 m
Grid connection	The Western Cape Wind Energy Facility will be connected to the up to 33/132 kV WC WEF IPP Substation via up to 33kV underground cabling and/or overhead cabling. A new 132 kV single or double circuit overhead powerline (OHPL) from the WC WEF IPP Substation directly into the planned Eskom Agulhas MTS. The OHPL will, as far as possible, follow the existing road reserves

	and/or property boundaries. The exact route of the OHPL is still to be determined.
Grid Connection length	Up to 5 km
Capacity	132 kV
Corridor	Up to 300 m
Servitude	Up to 35 m

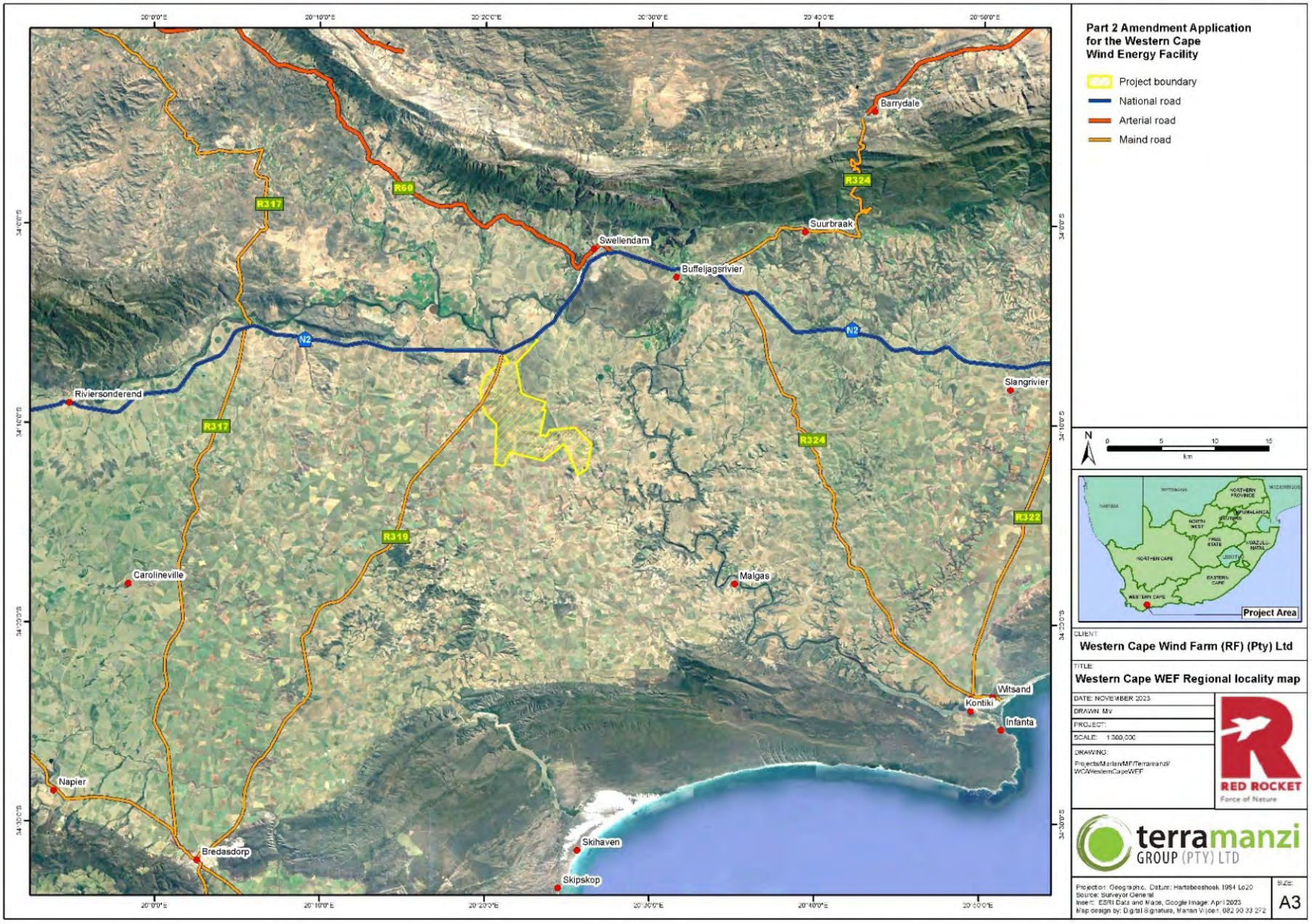


Figure 2: Regional Locality Map of the WCWEF and Substation.

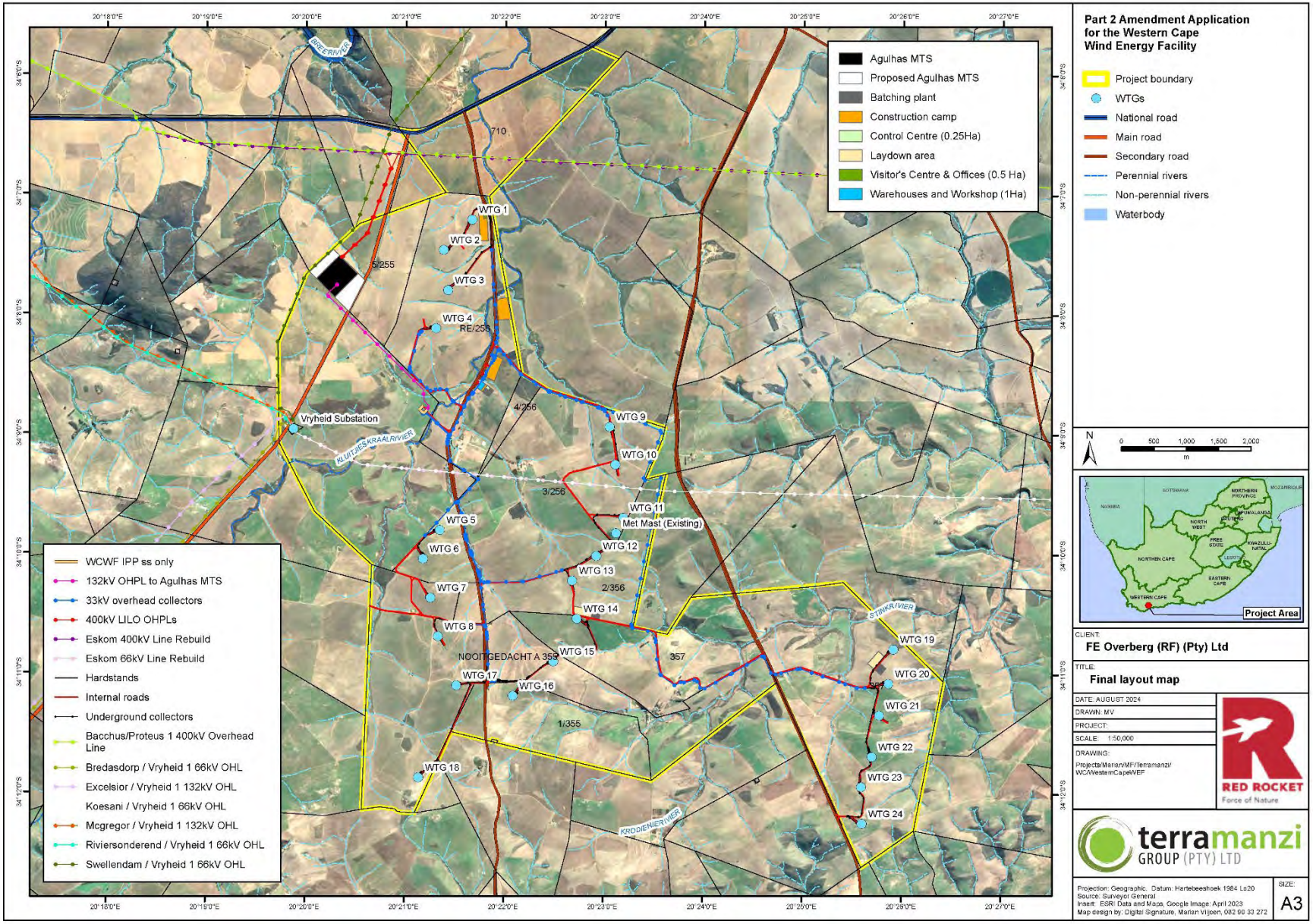


Figure 3: Map illustrating the Final layout (dated 02 August 2024) for the Western Cape Wind Energy Facility.

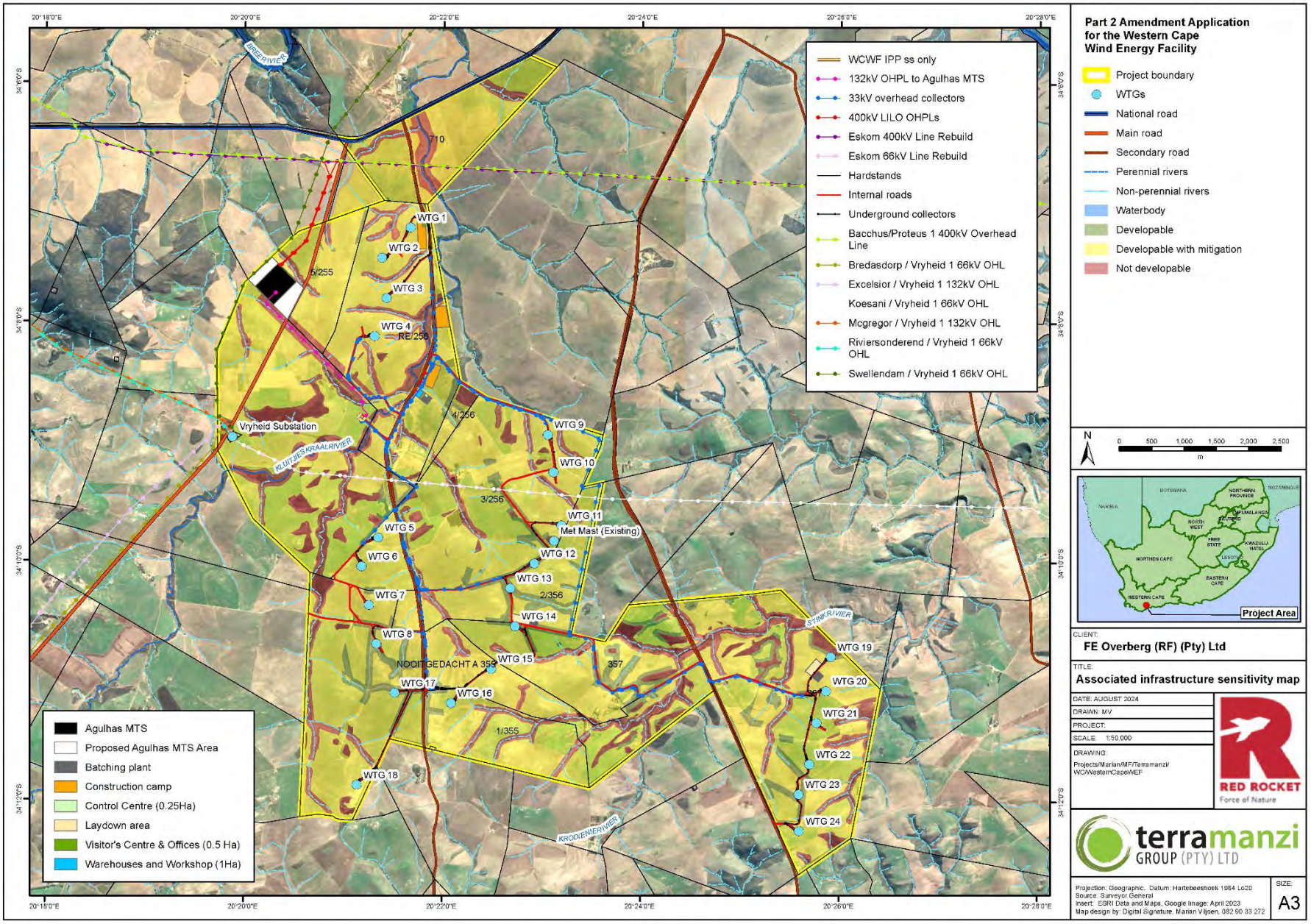
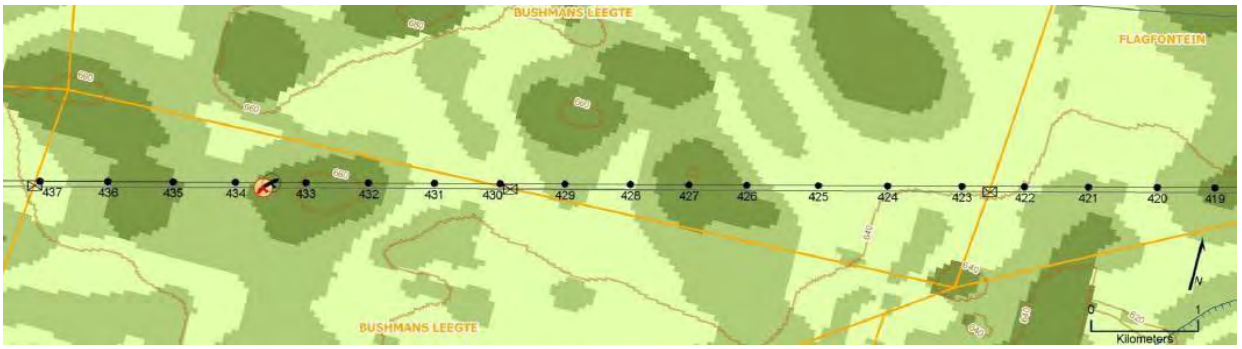


Figure 4: Associated Infrastructure Site sensitivity map for the WCWEF.

6.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.



Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile

The DFFE Environmental Screening Tool was utilised for this project to initially identify potential environmental sensitivities. The environmental sensitivities were then assessed by specialists. The environmental sensitives confirmed by the specialists are presented as follows:

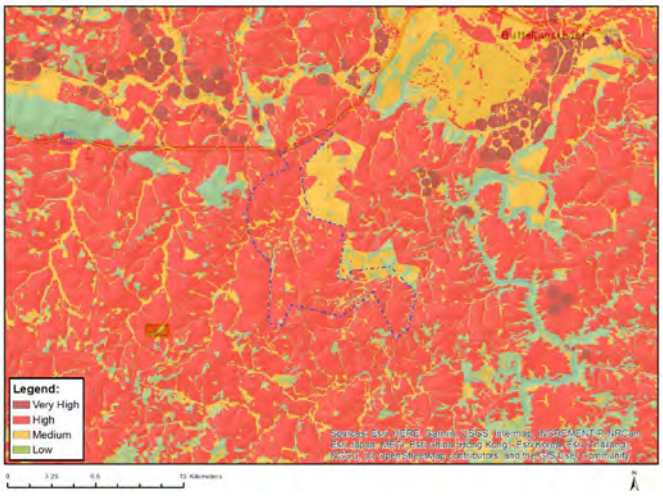


Figure 5: Agricultural DFFE Screening Tool Sensitivity Map.

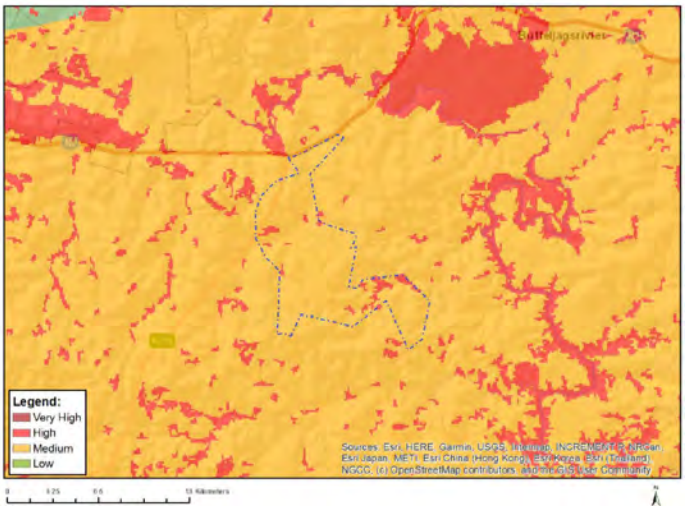


Figure 6: Animal Species DFFE Screening Tool Sensitivity Map.

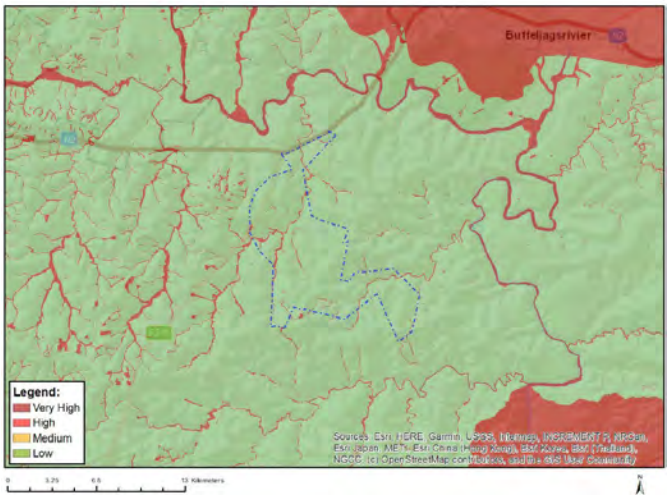


Figure 7: Aquatic Biodiversity DFFE Screening Tool Sensitivity Map.

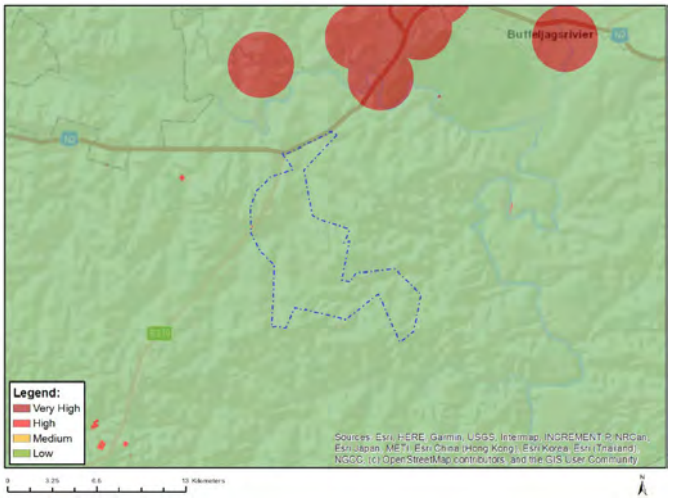


Figure 8: Archaeological DFFE Screening Tool Sensitivity Map.

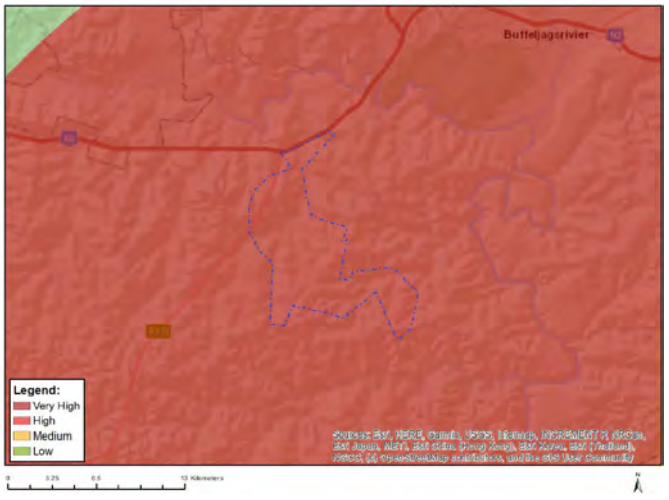


Figure 9: Avian DFFE Screening Tool Sensitivity Map.

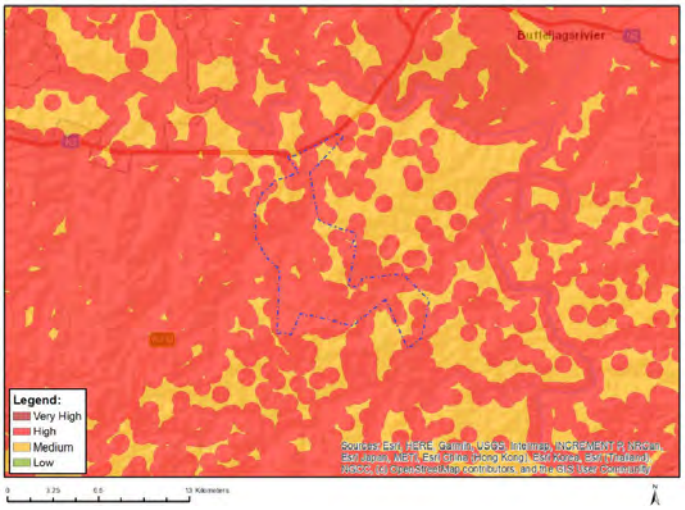


Figure 10: Bat theme DFFE Screening Tool Sensitivity Map.

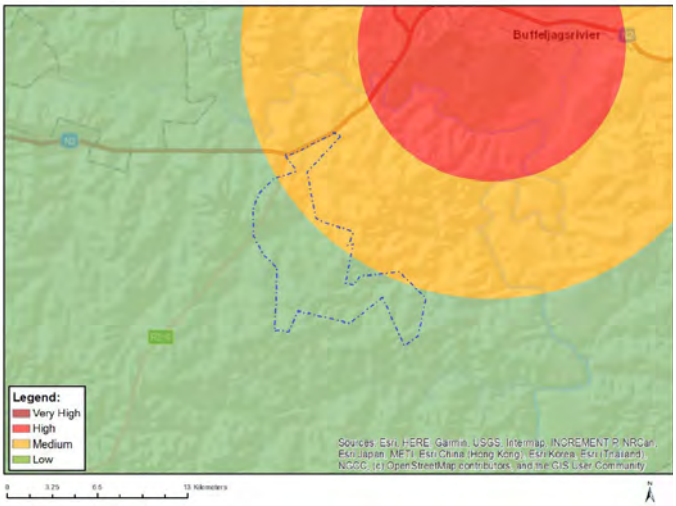


Figure 11: Civil Aviation (Wind) DFFE Screening Tool Sensitivity Map.

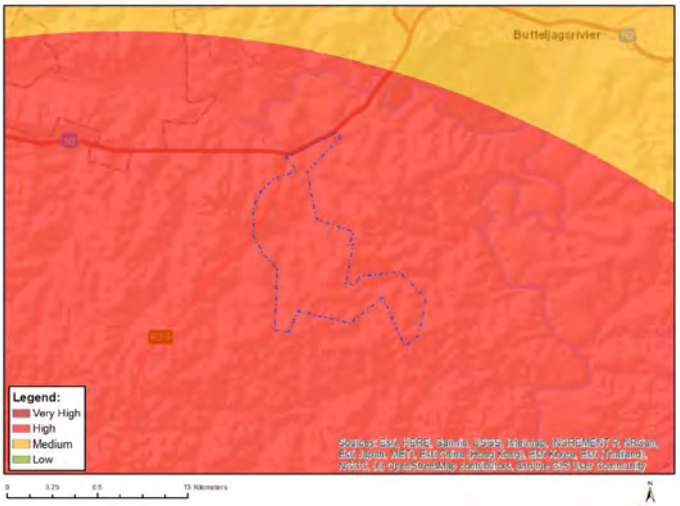


Figure 12: Defence Theme DFFE Screening Tool Sensitivity Map.

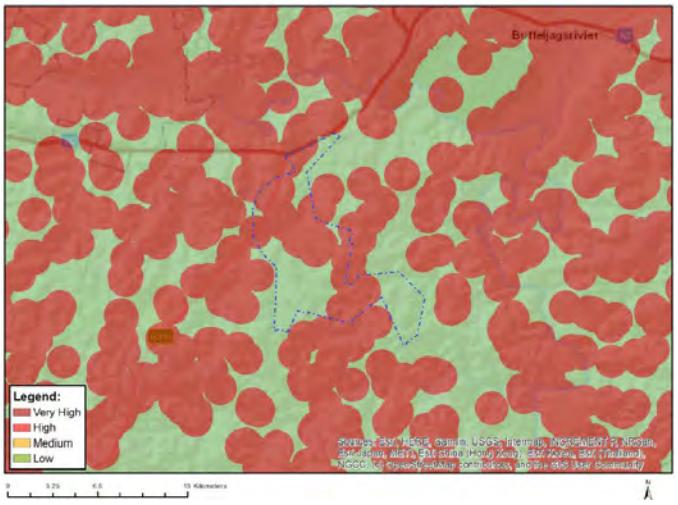


Figure 13: Flicker Theme DFFE Screening Tool Sensitivity Map.

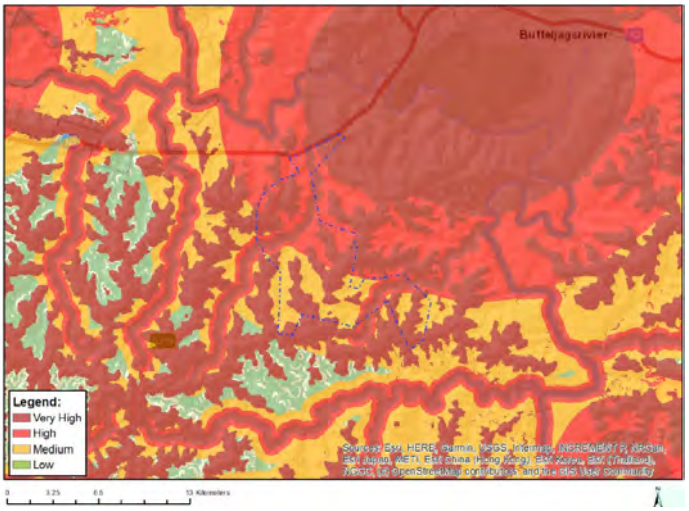


Figure 14: Landscape (Wind) Theme DFFE Screening Tool Sensitivity Map.

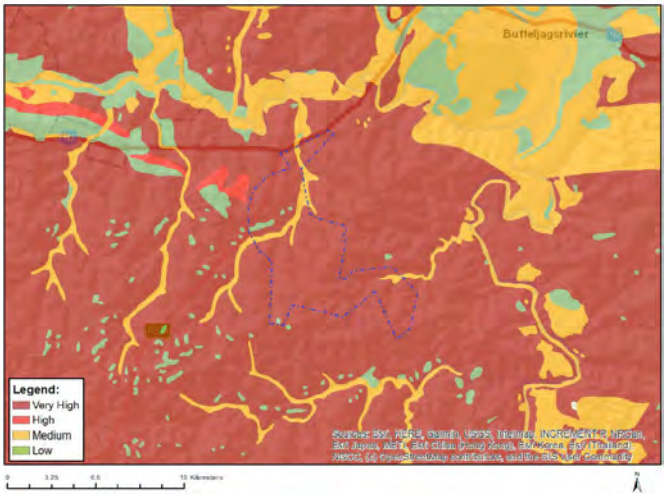


Figure 15: Palaeontological Theme DFFE Screening Tool Sensitivity Map.

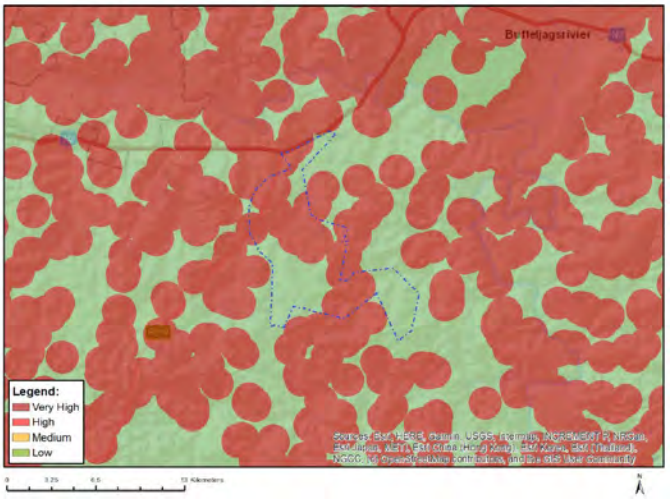


Figure 16: Noise Species DFFE Screening Tool Sensitivity Map.

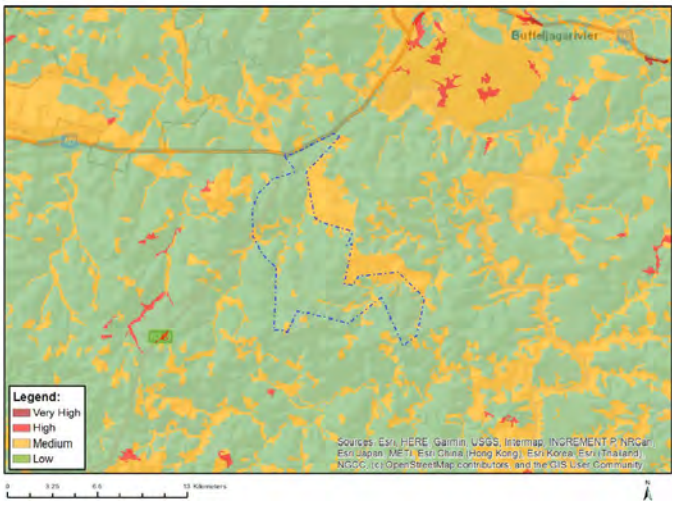


Figure 17: Plant Species DFFE Screening Tool Sensitivity Map.

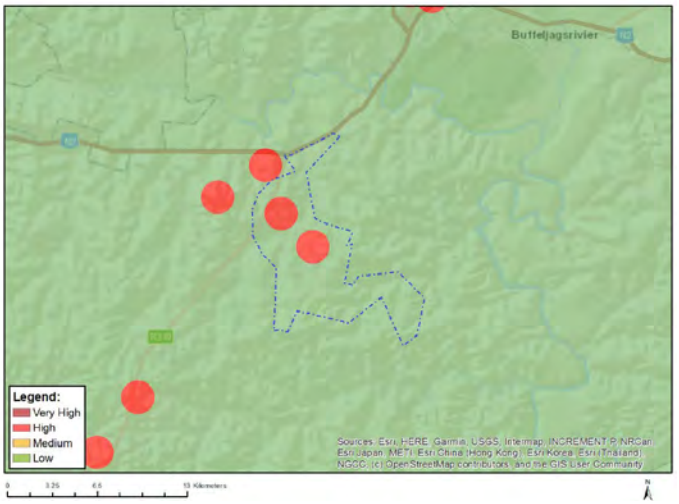


Figure 18: RFI (Wind) DFFE Screening Tool Sensitivity Map.

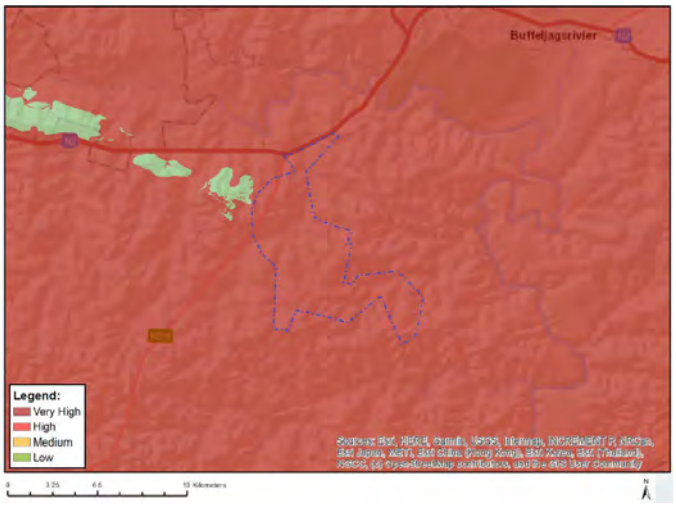


Figure 19: Terrestrial Biodiversity DFFE Screening Tool Sensitivity Map.

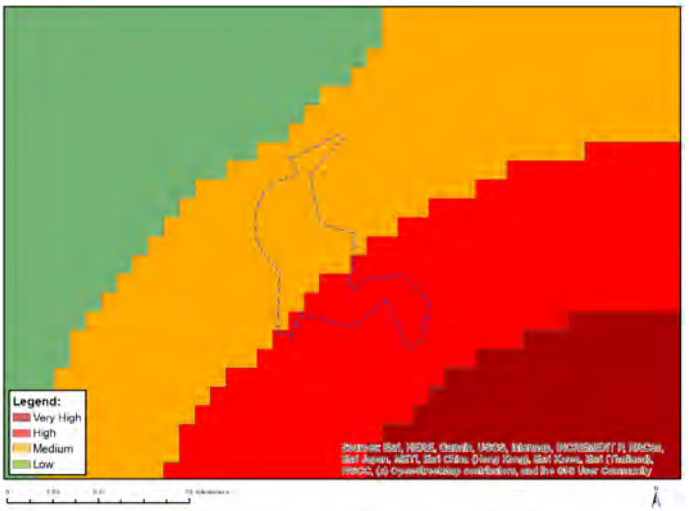
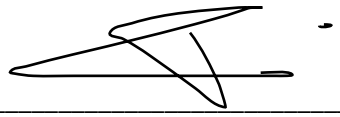


Figure 20: Vulture Species DFFE Screening Tool Sensitivity Map.

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA



_____

Date:

26th August 2024

_____

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new holder.

PART C

7 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

Please note: This Generic 132kV OHPL EMPr must be read in Conjunction with the WCWEF EMPr (dated August 2024). The 132kV has minor specific environmental sensitivities and attributes provided by the Specialists, which specifically pertain to the OHPL and which require additional management over and above what is presented in the Generic EMP mitigation measures above. The following document which is submitted in support of the application for Environmental Authorisation for the development and operation of the proposed Western Cape Wind Energy Facility, with all management activities of which the OHPL is a part of:

- Environmental Management Programme for the Proposed Development of the Western Cape WEF, in Swellendam Municipality, Western Cape Province.

This Generic EMP will be an appendix in the above Environmental Management Programme and has been updated to ensure compliance with Condition 16 of the EA (DFFE Ref: 14/12/16/3/3/1/2437 dated 12 December 2021) and include requested management plans as Appendix D. It is hereby submitted to the Competent Authority for decision.

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
• Ensure that as much as possible of the planned infrastructure is confined to transformed land, or non-arable areas. • Ensure that use is made of existing roads, servitudes, etc where at all possible • Every care must be taken before, during and after the construction and future maintenance of the renewable energy structure, supporting infrastructure or access routes to protect the vegetation and veld condition against deterioration and destruction. • It is the responsibility of the owner of the renewable energy project to ensure that suitable soil conservation works is established on the site to limit or restrict the loss of soil. • No renewable energy structure, supporting infrastructure or access routes shall in any manner divert any run-off water from a water course to any other water course or obstruct the natural flow pattern of runoff water, except with the permission from DAFF. • All access routes, existing or newly constructed and utilised during the construction and/or maintenance of	ECO, ESCO, Contractor, Engineer, Agricultural specialist	Pre, during and post construction	Planning and design phase	ECO, ESCO; Engineer; Agriculture Specialist	Throughout the project	EMPr on site

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
the renewable energy structures must be restore to its original state after completion of the establishment of the structures. • The installation of the underground power cables must not negatively impact on the resource base of the site. During the installation no soil conservation structure is to be disturbed, the soil texture must be restored, the work area should not be wider than 5 m, should not be directed through existing or future cultivated land nor impact negatively on existing farming infrastructure or any farming activity.						

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Impact associated with presence of construction workers - To avoid and or minimise the potential impact of construction workers on the local community. This can be achieved by maximising the number of locals employed during the construction phase	ECO, ESCO, Client	Maximising the number of locals employed during the construction phase and minimising the number of workers housed on the site.	Pre-construction/ Construction / Operation	ECO, ESCO; Client	Duration of project	

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
and minimising the number of workers housed on the site. .						
Safety, poaching, stock theft and damage to farm infrastructure- The housing of construction workers on the site must be limited to security personnel, as far as possible.	ECO, ESCO, Health and Safety Officer		Pre-construction/ Construction / Operation	ECO, ESCO		
Increase risk of fires - Ensure that open fires on the site for cooking or heating are not allowed except in designated areas. Provide adequate firefighting equipment onsite. Provide fire-fighting training to selected construction staff. Approval from site management e.g. construction manager, ECO, safety officer must be gained before cooking in designated areas and the fire must be controlled and monitored by the party responsible for the activity (namely the Contractor Safety Officer/EO).	ECO, ESCO, Contractor, Health and Safety Officer, Fire department	Security Checkpoints & Inspections	Construction / Operation	ECO, ESCO; Health and Safety Officer	Daily	Toolbox talk records
Impact on farming activities - Minimise the footprint of the wind energy facility and the associated infrastructure. Rehabilitate disturbed areas on sections already constructed or on completion of the construction phase. Details of the rehabilitation programme are to be contained in the EMP.						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Alter the layout plan to minimise encroachment into wetlands and river corridors as far as possible (following the recommended changes outlined in this freshwater ecology impact assessment report) and, where encroachment into wetlands of moderate conservation importance is unavoidable, rehabilitate degraded portions of these wetlands and/or degraded portions of nearby wetlands of high and moderate conservation importance that are of a similar type. This includes micrositing of the substation alternatives and which encroach into the 50 m buffer.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist.	Stormwater management plan to be implemented	Construction, Operation	ECO, ESCO, Engineer and Project Manager (where required)	During construction and operation	Stormwater management plan
No water must be taken from a water resource for any purpose without authorisation in terms of the National Water Act, 1998 (Act 36 of 1998) (NWA).	ECO, ESCO, Freshwater Specialist (where required), Engineer, Contractor		Construction	ECO, ESCO	Daily	Site Inspection and ECO Compliance report
Where the crossing of rivers by infrastructure such as roads and underground services is necessary, this must be located at existing road crossings as far as possible.	ECO, ESCO, Engineer, Freshwater specialist (if required)	Preconstruction walk through, continuous monitoring throughout construction	Construction; Operation	ECO, ESCO	Operation	Proof of implementation in detailed design and report from specialist.
Construction areas within 50 m of any freshwater ecosystem must have clearly defined, approved work areas /	Project Manager, ECO, ESCO, Ecologist	The Final approved Layout must be implemented on site	Construction	ECO, ESCO,	Daily	Site Inspections and ECO Compliance Reports

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
footprints, which must be clearly demarcated on site, to limit the risk of potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5 m on either side of the crossing may be implemented and the reaches of the freshwater ecosystem up- and downstream of the construction ROW must be designated 'no-go' areas.						
As far as possible, underground cabling must be installed across freshwater ecosystems by means of directional drilling. If trenching cannot be avoided, the following measures must be taken: Trenching must, as far as practically possible, be undertaken during the dry, summer low-flow period, to contain the impacts from the construction phase.	Project Manager, ECO, ESCO, Freshwater specialist, engineer	Preconstruction walk through, continuous monitoring throughout construction	Preconstruction	ESCO, ECO	Weekly and monthly monitoring during construction	Site Inspections, ECO Compliance Report
Underground cabling must preferably be directionally drilled under freshwater ecosystems and not trenched. Overhead cabling must, as much as practically feasible, span the width of the applicable freshwater ecosystem to avoid placement of monopoles directly within the freshwater ecosystem. A minimum of a 10m buffer from the wetland boundary	ECO, ESCO, Freshwater specialist, engineer	Preconstruction walk through, continuous monitoring throughout construction	Preconstruction/Construction	ESCO, ECO	Daily	Site Inspections, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
should also be maintained from the monopoles						
Once the cabling has been installed, the stockpiled soil must be used as backfill for the trench, while keeping the disturbance footprint to a minimum – no indiscriminate movement of construction machinery by personnel (Figure 4 above). The trench must be filled with soil in the same sequence as it was removed. It is imperative that topsoil be reinstated to ensure suitable rehabilitation of vegetation	ECO, ESCO	Rehabilitation plan in place	During construction/operational	ESCO, ECO	Weekly	Site Inspections, ECO Compliance Report

Impact management outcome: Avifaunal Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Appropriate (approved) Bird flight diverters (BFDs) to be affixed to the entire length of novel above-ground overhead power lines	Engineer, Avifaunal Specialist, ESCO, Project Manager, Contractor	Install appropriate bird flight diverters along the powerline route as guided by the Avifaunal Specialist	Construction and Operation	ESCO, ECO, Avifaunal Specialist (When required)	Weekly monitoring to ensure the flappers are in working order	Site Inspection Checklist, ECO Compliance report

Impact management outcome: Avifaunal Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The substation should be inspected weekly by the operator, and if any electrocution mortality is recorded, it should be reported to the avifaunal specialist. If the mortality levels exceed thresholds determined by the avifaunal specialist in consultation with BirdLife South Africa, reactive mitigation in the form of insulation or perch deterrents must be implemented.	ECO, ESCO, Project Manager	Weekly walk throughs	Construction	ECO, ESCO	Weekly	Site Inspections and ECO Compliance reports
If bats colonise Wind Farm infrastructure, a suitably qualified bat specialist must be consulted before any work is undertaken on that infrastructure or attempting to remove bats.	ECO, ESCO, Project Manager	Weekly walk throughs	Construction	ECO, ESCO	Weekly	Site Inspections and ECO Compliance reports

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must: • be implemented during the	Project Manager and Construction Manager ECO	Follow the 'Chance Find Protocol' (Appendix B – HIA Specialist Report for guidance).	Construction	ECO, ESCO, Palaeontological Specialist	When a Chance find occurs on site and a potential	Chance Find Procedure report by the Palaeontological Specialist, ECO compliance

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
lifetime of the WEF, and • be included as part of the EMPr for this project.					heritage resources identified	report

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

APPENDIX 2: CV OF THE EAP

Environmental Management Programme Substation: Phase 2

FE Overberg (Pty) Ltd
2nd Floor, Cape Town Cruise Terminal Building
V&A Waterfront, Cape Town, 8001
+27 (0)21 418 3940 • info@redrocket.energy
www.redrocket.energy

Reg No: 2020/787250/07





DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

DEVELOPMENT OF THE ON-SITE 132KV SUBSTATION AT THE WESTERN CAPE WIND ENERGY FACILITY WITHIN THE SWELLENDAM MUNICIPALITY IN THE WESTERN CAPE PROVINCE

Applicant: Western Cape Wind Farm (Pty) Ltd
Contact Person: Magdalena Logan

terramanzi
GROUP (PTY) LTD

people. planet. prosperity.

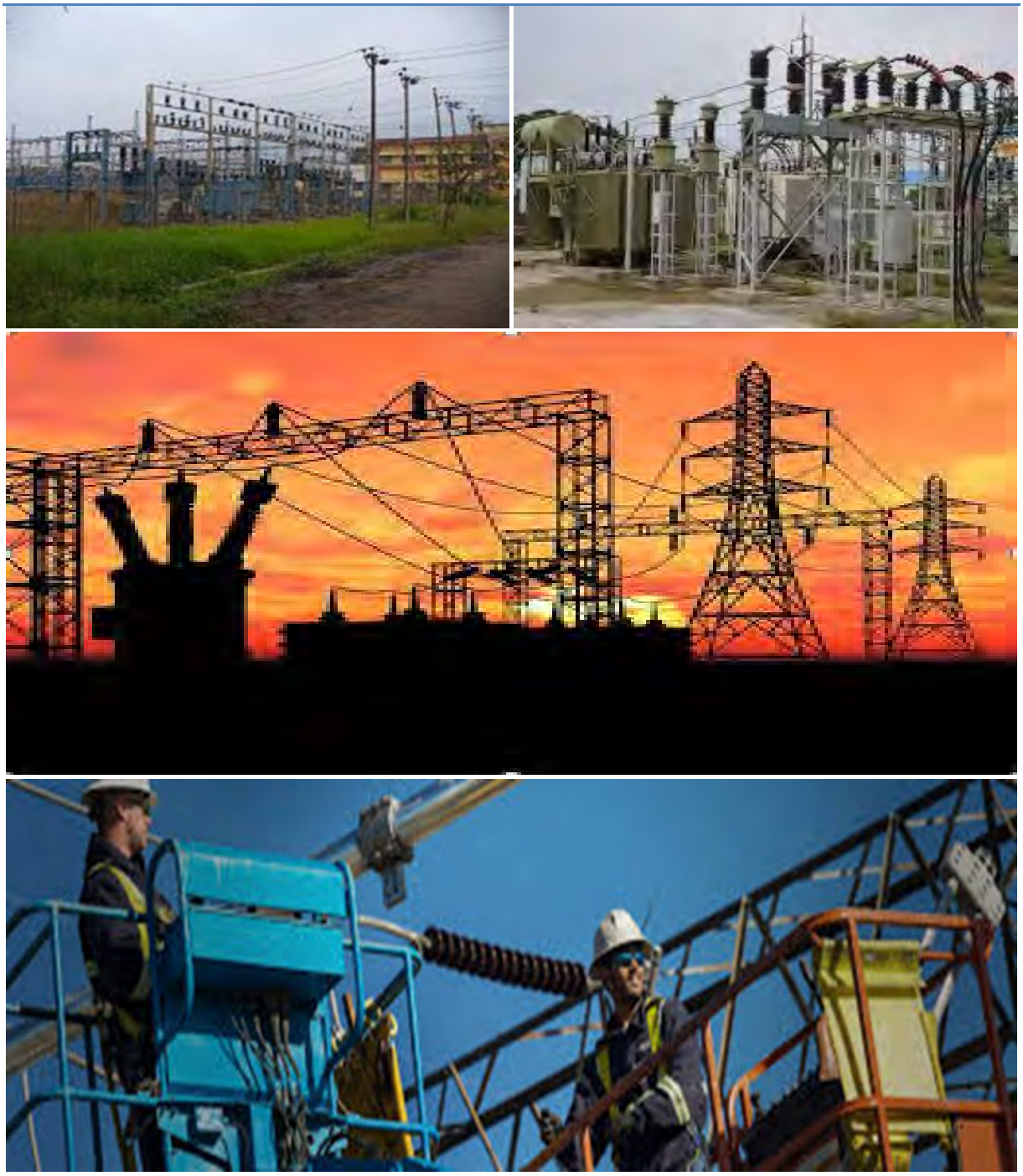
tel: +27 21 701 5228
fax: +27 86 558 1213
mobile: +27 82 575 3800

email: info@terramanzi.co.za
website: www.terramanzi.co.za

postal: postnet suite 211, private bag X26, tokai, 7966

OCTOBER 2024

GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

TABLE OF CONTENTS

INTRODUCTION 1

1. Background 1
2. Purpose 2
3. Objective 2
4. Scope 3
5. Structure of this document 3
6. Completion of part B: section 1: the pre-approved generic EMPr template 5
7. Amendments of the impact management outcomes and impact management actions 5
8. Documents to be submitted as part of part B: section 2 site specific information and declaration 5

(a) Amendments to Part B: Section 2 – site specific information and declaration 6

PART A – GENERAL INFORMATION 2

1. DEFINITIONS 2
2. ACRONYMS and ABBREVIATIONS 3
3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION 4
4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE 10

4.1 Document control/Filing system 10
4.2 Documentation to be available 10
4.3 Weekly Environmental Checklist 10
4.4 Environmental site meetings 10
4.5 Required Method Statements 11
4.6 Environmental Incident Log (Diary) 11
4.7 Non-compliance 12
4.8 Corrective action rECO, ESCOrds 13
4.9 Photographic rECO, ESCOrd 13
4.10 Complaints register 13
4.11 Claims for damages 14
4.12 Interactions with affected parties 14
4.13 Environmental audits 14
4.14 Final environmental audits 15

PART B: SECTION 1: Pre-approved generic EMPr template 16

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS 16

5.1 Environmental awareness training 17
5.2 Site Establishment development 20
5.3 Access restricted areas 21
5.4 Access roads 23

5.5 Fencing and Gate installation 26
5.6 Water Supply Management 31
5.7 Storm and wastewater management 32
5.8 Solid and hazardous waste management 34
5.9 Protection of watercourses and estuaries 38
5.10 Vegetation clearing 40
5.11 Protection of fauna 44
5.12 Protection of heritage resources 47
5.13 Safety of the public 48
5.14 Sanitation 51
5.15 Prevention of disease 53
5.16 Emergency procedures 55
5.17 Hazardous substances 57
5.18 Workshop, equipment maintenance and storage 64
5.19 Batching plants 65
5.20 Dust emissions 68
5.21 Blasting 70
5.22 Noise 71
5.23 Fire prevention 73
5.24 Stockpiling and stockpile areas 75
5.25 Civil works 76
5.26 Excavation of foundation, cable trenching and drainage systems 78
5.27 Installation of foundations, cable trenching and drainage systems 80
5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches) 81
5.30 Cabling and Stringing 84
5.31 Testing and Commissioning (all equipment testing, earthing system, system integration) 85
5.32 Socio-ECO, ESCOnomic 85
5.33 Temporary closure of site 88
5.34 Dismantling of old equipment 92
5.35 Landscaping and rehabilitation 94
6 ACCESS TO THE GENERIC EMPr 97
PART B: SECTION 2 98
7 SITE SPECIFIC INFORMATION AND DECLARATION 98
7.1 Sub-section 1: contact details and description of the project 98
7.2 Sub-section 2: Development footprint site map 104
7.3 Sub-section 3: Declaration 107

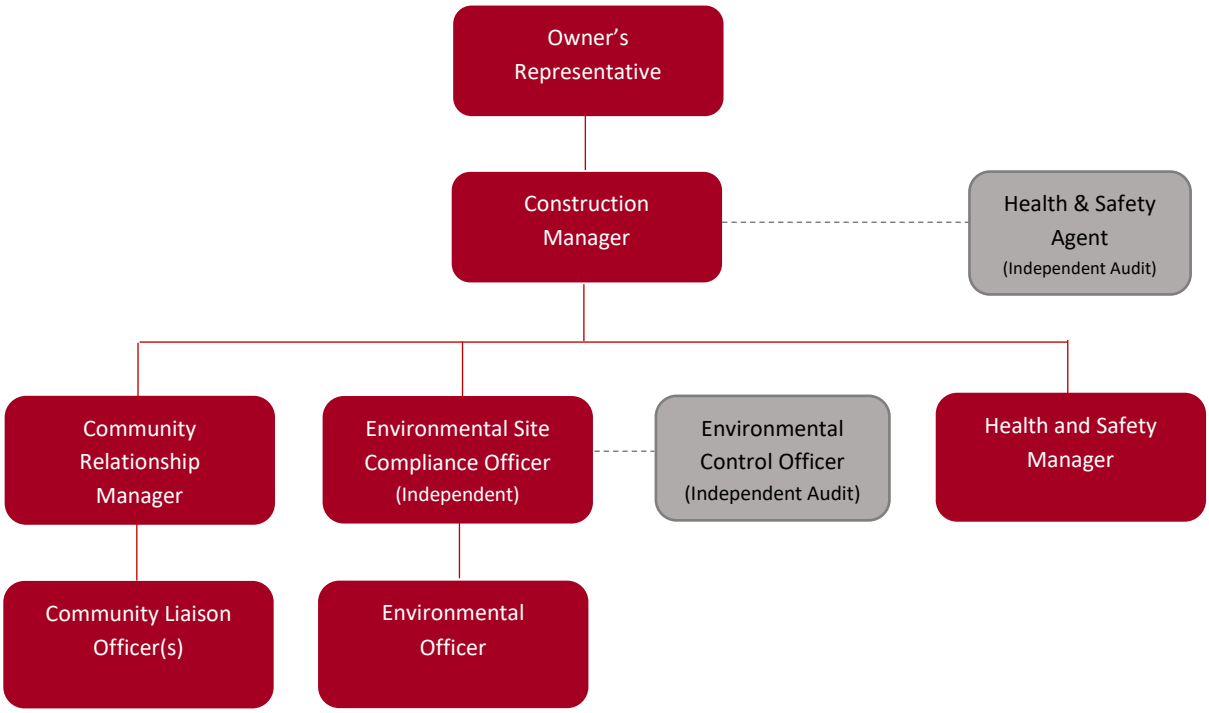
7.4 Sub-section 4: amendments to site specific information (Part B; section 2) 107
PART C 108
8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES 108
APPENDIX 1: METHOD STATEMENTS 117

INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority (CA).

Please kindly see below an Organogram of the Applicant Company Structure (Figure 1) and requirements for an Environmental Site Compliance Officer (ESCO):



Principle Contractors shall each appoint their own compliance management structure, including Environmental Officers, Health and Safety Management, and Community Liaison Officers, who shall report to the Project Permit Holder, who in turn provides compliance oversight and assurance.

Figure 1: Organogram of the Applicant company structure

A suitably qualified ESCO must be appointed by the Applicant to monitor the project compliance onsite on a full-time basis.

Responsibilities of the ESCO include:

- Be fully conversant with the BAR, the conditions of EA and the EMPr;
- Be fully conversant with all relevant environmental legislation and ensure compliance thereof;
- Approve method statements (co-approval with Site Manager);
- Remain employed until the completion of the construction activities; and
- Report to the Project Manager, including all findings identified onsite.

In addition, the ESCO will:

- Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation;
- Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and
- Ensure that activities onsite comply with all relevant environmental legislation.

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and all listed and specified activities necessary for the realisation of such infrastructure.

This EMPr has been amended for the construction and operation of the **Western Cape Wind Energy Facility 132kV Substation** that will connect the Western Cape WEF 132kV Overhead Powerline the Eskom grid, located on various farm properties within the Swellendam Local Municipality in the Western Cape Province.

This Generic EMPr refers to the 132kV on-site substation only.

The roles and responsibilities of this EMPr (Section 3, page 6 and 9) have been updated as per the Client's specific organogram. The additional roles and responsibilities are indicated via underlined text.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realization of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1 and understands that the

Part	Section	Heading	Content
			impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially, and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.

Part	Section	Heading	Content
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in Regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions in line with the process contemplated in Regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the property or farm in which the proposed substation infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g., threatened plant species, archaeological site, etc. Sensitivity maps shall identify features

both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the pre-approved 'generic EMPr' template in Section 1 and understands that the impact management outcomes and impact management actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

" clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified.

" Construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste, and wastewater management.

" contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"**Hazardous substance**" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995.

"Method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO, ESCO. The method statement must set out the equipment, materials, labour, and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO, ESCO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification.

The method statement must cover as a minimum applicable detail with regard to:

(i) Construction procedures.
(ii) Plant, materials, and equipment to be used.
(iii) Transporting the equipment to and from site.
(iv) How the plant/ material/ equipment will be moved while on site.
(v) How and where the plant/ material/ equipment will be stored.
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur.
(vii) Timing and location of activities.
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units.

"Solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food, and domestic waste (e.g., plastic packets and wrappers).

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works.

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility, and composition of the soil.

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environment Conservation Act No. 73 of 1989
ECO, ESCO	Environmental Control Officer Environmental Site Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&APs	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities, and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO, ESCO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO, ESCO are undertaken.

Table 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person(s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	<u>Role</u> The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO, ESCO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO, ESCO to perform responsibilities, and he must ensure that the ECO, ESCO is integrated as part of the project team while remaining independent. <u>Responsibilities</u> - Be fully conversant with the conditions of the EA. - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s). - Issuing of site instructions to the Contractor for corrective actions required. - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.

Responsible Person(s)	Role and Responsibilities
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO, ESCO. The DSS is responsible for the day-to-day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO). - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO, ESCO. - Must ensure that all landowners have the relevant contact details of the site staff, ECO, ESCO and cEO. - Issuing of site instructions to the Contractor for corrective actions required. - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO, ESCO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties (RI&APs), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e., those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as be specified by the EA, report to the relevant CA as and when required.

Responsible Person(s)	Role and Responsibilities
	Responsibilities The responsibilities of the ECO will include the following: - A suitably qualified external ECO must be appointed by the Holder of the EA to audit the project compliance in terms of the EMPr and conditions of the EA on a monthly basis, during the construction phase, in line with Condition 21 of the EA. - The costs of the ECO shall be borne by the Holder of the EA (proof of appointment must be maintained onsite). - Be aware of the findings and conclusions of all EA related to the development. - Be familiar with the recommendations and mitigation measures of this EMPr. - Be conversant with relevant environmental legislation, policies, and procedures, and ensure compliance with them. - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required. - Educate the construction team about the management measures contained in the EMPr and environmental licenses. - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective. - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements. - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses. - Liaison between the DPM, Contractors, authorities, and other lead stakeholders on all environmental concerns. - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr. - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO). - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken. - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken. - Assisting in the resolution of conflicts. - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor.

Responsible Person(s)	Role and Responsibilities
	- In case of non-compliances, the ECO, ESCO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO, ESCO may report this matter to the authorities as non-compliance. - Maintenance, update, and review of the EMPr. - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr. - Be familiar with the recommendations and mitigation measures of this EMPr and implement these measures. - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s). - Confine the development site to the demarcated area. - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO). - Assist the contractors in addressing environmental challenges on site. - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared. - Assist the contractor in investigating environmental incidents and compile investigation reports. - Follow-up on pre-warnings, defects, non-conformance reports. - Measure and communicate environmental performance to the Contractor. - Conduct environmental awareness training on site together with ECO, ESCO and cEO. - Ensure that the necessary legal permits and / or licenses are in place and up to date. - Acting as Developer's Environmental Representative on site and work together with the ECO, ESCO and contractor;
Contractor	<u>Role</u>

Responsible Person(s)	Role and Responsibilities
	The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. <u>Responsibilities</u> - project delivery and quality control for the development services as per appointment. - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period. - ensure that safe, environmentally acceptable working methods and practices are implemented, and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely. - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones. - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO, ESCO.
contractor Environmental Officer (cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer, and the public. As a minimum the cEO shall meet the following criteria: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project. - Ensure all their staff are aware of the environmental requirements, conditions, and constraints with respect to all of their activities on site.

Responsible Person(s)	Role and Responsibilities
	- Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements. - Attend the Environmental Site Meeting. - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes. - Report back formally on the completion of corrective actions. - Assist the ECO, ESCO in maintaining all the site documentation. - Prepare the site inspection reports and corrective action reports for submission to the ECO, ESCO. - Assist the ECO, ESCO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.
Environmental Onsite Compliance Officer (ESCO)	- A suitably qualified ESCO must be appointed by the Holder of the EA to monitor the project compliance onsite on a full time basis. - Responsibilities of the ESCO include: o Be fully conversant with the BAR, the conditions of EA and the EMPr; o Be fully conversant with all relevant environmental legislation and ensure compliance thereof; o Approve method statements (co-approval with Site Manager); o Remain employed until the completion of the construction activities; and o Report to the Project Manager, including all findings identified onsite. - In addition, the ESCO will: o Undertake monthly inspections of the site and surrounding areas to audit compliance with the EMPr and conditions of the environmental authorisation; o Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; o Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and o Ensure that activities onsite comply with all relevant environmental legislation

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. As a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up to date. The filing system must be updated, and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion.
- Copy of the generic and site specific EMPr as well as any amendments thereof.
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof.
- All method statements.
- Completed environmental checklists.
- Minutes and attendance register of environmental site meetings.
- An up-to-date environmental incident log.
- A copy of all instructions or directives issued.
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record.
- Complaints register.

4.3 Weekly Environmental Checklist

The ECO, ESCOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECO, ESCOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record “Matters for Attention” that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECO, ESCOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures.
- materials and equipment to be used.
- getting the equipment to and from site.
- how the equipment/ material will be moved while on site.
- how and where material will be stored.
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur.
- timing and location of activities.
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECO, ESCOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure.
- Batch plants.
- Workshop or plant servicing.
- Handling, transport, and storage of Hazardous Chemical Substance's.
- Vegetation management – Protected, clearing, aliens, felling.
- Access management – Roads, gates, crossings etc.
- Fire plan.
- Waste management – transport, storage, segregation, classification, disposal (all waste streams).
- Social interaction – complaints management, compensation claims, access to properties etc.
- Water – use (source, abstraction, and disposal), access and all related information, crossings, and mitigation.
- Emergency preparedness – Spills, training, other environmental emergencies.
- Dust and noise management methodologies.
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECO, ESCOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECO, ESCOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECO, ESCOs. (For example, a contractor's staff member littering or a drip tray that has not been emptied).
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECO, ESCOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident.
- Description of the incident.
- The name of the Contractor responsible.
- The incident must be listed as significant or minor.
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log.
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECO, ESCOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance.
- Name of the contractor responsible.
- Nature and description of the non-compliance.
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO, ESCO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECO, ESCOs. If satisfied that the corrective action has been completed, the ECO, ESCOs are to sign-off on the Corrective Action Report and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECO, ESCOs.

4.9 Photographic recorded

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated, and a brief description note attached.

The Contractor shall:

1. Allow the ECO, ESCOs access to take photographs of all areas, activities, and actions.

The ECO, ESCOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up.
2. All bunding and fencing.
3. Road conditions and road verges.
4. Condition of all farm fences.
5. Topsoil storage areas.
6. All areas to be cordoned off during construction.
7. Waste management sites.
8. Ablution facilities (inside and out).
9. Any non-conformances deemed to be "significant".
10. All completed corrective actions for non-compliances.
11. All required signage.
12. Photographic recordings of incidents.
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECO, ESCOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders, and individuals. The Complaints record shall:

1. Record the name and contact details of the complainant.
2. Record the time and date of the complaint.
3. Contain a detailed description of the complaint.
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECO, ESCOs to take relevant photographs); and
5. Contain a copy of the ECO, ESCOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO, ESCO's written response will include a

description of any corrective action to be taken and must be signed by the Contractor, ECO, ESCO and affected party. Where a damage claim is issued by the complainant, the ECO, ESCOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECO, ESCOs shall:

1. Record the full detail of the complaint as described in (**section 4.10**) above.
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval.
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO, ESCO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECO, ESCOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent, and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECO, ESCOs shall:

1. Ensure that all queries, complaints, and claims are dealt within an agreed timeframe.
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file.
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times.

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECO, ESCOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECO, ESCOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists.
- Deviations and non-compliances with the checklists.
- Non-compliances issued.
- Completed and reported corrective actions.
- Environmental Monitoring.
- General environmental findings and actions; and

- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities;	ECO, ESCO / cEO / dEO	Hold environmental awareness training workshops	Pre-construction Construction	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record
– The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course:	Contractor	Scheduling of sufficient sessions through consultation with the ECO, ESCO / cEO / dEO	Pre-construction Construction	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record
– Refresher environmental awareness training is available as and when required;	cEO / dEO in consultation with the ECO, ESCO	Hold refresher environmental awareness training workshops	During the construction phase	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record
– All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;	cEO / dEO	Hold training workshops and ensure that the EA and EMPr is readily available	During the construction phase	ECO, ESCO dEO	Monthly and as and when required	Attendance registers and training minutes / notes for the record

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering.	Contractor	Develop and place appropriate posters at key locations	Pre-construction Construction	ECO, ESCO dEO cEO	Monthly	Photographic record
– Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities. b) Mitigation measures to be implemented when carrying out specific activities. c) Emergency preparedness and response procedures. d) Emergency procedures. e) Procedures to be followed when working near or within sensitive areas. f) Wastewater management procedures. g) Water usage and conservation. h) Solid waste management procedures. i) Sanitation procedures. j) Fire prevention; and k) Disease prevention.	cEO / dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO, ESCO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO, ESCO / cEO / dEO	Filing system including all proof of training (i.e., attendance register and training minutes / notes for the record)	During the construction phase	ECO, ESCO dEO	Monthly	Completed and up to date filing system with proof of training
– Educate workers on the dangers of open and/or unattended fires;	cEO / dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the dangers of open and/or unattended fire	Pre-construction Construction	ECO, ESCO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– A staff attendance registers of all staff to have received environmental awareness training must be available.	ECO, ESCO / cEO / dEO	Filing system including all proof of training (i.e., attendance register)	During the construction phase	ECO, ESCO dEO	Monthly	Completed and up to date filing system inclusive of all attendance registers
– Course material must be available and presented in appropriate languages that all staff can understand.	ECO, ESCO / cEO / dEO	Develop environmental awareness training material in the required languages.	During the construction phase	ECO, ESCO dEO	Monthly	Environmental awareness training material requirements checklist and the

Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		Training material must by readily available to all staff				training register which must indicate the language of the training

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimized during site establishment and the development footprint are kept to demarcated development area.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment	Contractor	Development of an appropriate method statement	Pre-construction	ECO, ESCO dEO	Once, prior to construction	Availability of the method statement which complies with the minimum requirements listed

cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;						
– Location of construction camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;	DPM	Place construction camps outside of sensitive areas identified in the Basic Assessment Report	Pre-construction Construction	ECO, ESCO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas
– Sites must be located where possible on previously disturbed areas;	DPM	Place site outside of sensitive areas and within previously disturbed areas identified in the BA Report	Pre-construction	ECO, ESCO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas and placement within disturbed areas
– The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and	DPM	Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr	Pre-construction & Construction	ECO, ESCO dEO	Once, prior to construction and once during the construction of the fencing	The camp is fenced in accordance with Section 5.5 of this EMPr
– The use of existing accommodation for contractor staff, where possible, is encouraged.	Not applicable – the development of new accommodation is not proposed. Staff will be accommodated in the closet town					

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through, and any additional areas identified during development;	dEO / cEO in consultation with the ECO, ESCO	Spatially demarcate access restricted areas informed by the BA Report	Pre-construction	ECO, ESCO	Once, prior to construction	Access restricted areas are identified and provided in a spatial format
– Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and	dEO / cEO in consultation with the ECO, ESCO	Erect appropriate temporary barriers around access restricted areas	At the commencement and for the duration of the construction phase	ECO, ESCO	Monthly	Access restricted areas are closed-off through temporary barriers and barriers are maintained to a sufficient standard
– Unauthorised access and development related activity inside access restricted areas is prohibited.	Contractor / dEO / cEO	Erect appropriate temporary barriers around access restricted areas and provide clear signage of restricted status	During the construction phase	ECO, ESCO	Monthly, and as and when required	Photographic evidence and notes of compliance that no unauthorised access or activities has taken place within the access restricted areas

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An access agreement must be formalized and signed by the DPM, Contractor and landowner before commencing with the activities;	DPM Contractor	Develop access agreements with the affected landowners. Ensure that agreements are approved and signed	Pre-construction	dEO ECO, ESCO	Once, prior to construction	Availability of approved and signed negotiations
– All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition	Contractor	Undertake maintenance activities on private roads used for construction as degradation takes place	During the construction phase	cEO / ECO, ESCO	Weekly	Photographic record of the pre-construction condition and degradation of roads, and records of the implementation and effectiveness of maintenance activities

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All contractors must be made aware of all these access routes.	dEO / cEO	Develop a map illustrating all access routes associated with the project and present and provide the map to all contractors	Pre-construction Construction	ECO, ESCO	Once, prior to construction	Access routes map readily available
– Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;	Contractor	All access routes developed that are not in-line with the access route agreements must be closed and re-habilitated to the pre-disturbance state	Construction and Rehabilitation	ECO, ESCO	Bi-weekly (every two weeks)	Photographic record of the closure of access roads and re-vegetation
– Maximum use of both existing servitudes and existing roads must be made to minimise further disturbance through the development of new roads;	Contractor (and Eskom maintenance staff where relevant to operation)	Existing access routes to be used must be specified and the development of new roads must be avoided as far as possible	Construction and operation	cEO Operation and maintenance team	Weekly	Implementation of the approved layout

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with **section 4.9: photographic record**; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;	dEO / cEO	Record the conditions of private roads to be used (prior to use) as per the requirements of section 4.9 and agree on the required condition of the roads with the landowner, DPM and contractor	During the construction phase	ECO, ESCO	Prior to the use of private roads	Photographic record and proof of the road conditions agreed upon with the relevant parties
– Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands	DPM and Contractor	Design access roads to follow fence lines and avoid vegetated areas	Pre-construction	ECO, ESCO	Once during the design and once prior to construction	Implementation of the approved layout
– Access roads must only be developed on pre-planned and approved roads.	Contractor	Construction of access roads only on pre-planned and approved access roads	During the construction phase	ECO, ESCO dEO	Once during the design and weekly during the construction of access roads	Implementation of the approved layout

5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible;	Contractor	Identify and inform all relevant staff of the existing gates to be used	Pre-construction & Construction	dEO	Monthly	Existing gates are utilised on a frequent basis and only limited new access gates are developed
– Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record;	ECO, ESCO	Existing and new gates will be recorded and documented as per the requirements of section 4.9	During the construction phase	ECO, ESCO	Once, when the construction of all new gates has been completed	Photographic record of the existing and new gates as per the requirements of section4.9
– All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	Contractor	Ensure all relevant gates are fitted with locks and are always locked	Construction and Operation	ECO, ESCO Operation and maintenance team	Bi-weekly (every second week)	All gates are locked and no complaints from landowners are received in this regard

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– At points where the line crosses an existing fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;	dEO	Install new gates where required with the approval of the affected landowner	During the construction phase	ECO, ESCO	Once, prior to construction and during the construction phase, as and when required	New gates are installed where required
– Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	Contractor	Install gates in a manner so that there is a gap of no more than 100mm between the bottom of the gate and the ground	During the construction phase	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
– Where gates are installed in jackal proof fencing, a suitable reinforced concrete still must be provided beneath the gate;	Contractor	Implement a reinforced concrete sill beneath gates installed for jackal proofing	During the construction phase	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
– Original tension must be maintained in the fence wires;	Contractor	Maintain original tension of fences through required activities	During the construction phase	ECO, ESCO	Monthly	No tension reduction on fence wires

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All gates installed in electrified fencing must be re-electrified;	Contractor	Electrify gates installed in electrified fencing	During the construction phase	ECO, ESCO	Once, during the erection of the gates during the construction phase	Gates installed in electrified fencing is electrified
– All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities;	Contractor	Undertake maintenance activities on fences and barriers	During the construction phase	ECO, ESCO	Monthly	Photographic record of maintained fences and barriers
– Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable;	Contractor	Fence construction camps, batching plants, hazardous storage areas and access restricted areas	During the construction phase	ECO, ESCO	Once during the erection of fencing	Photographic record of fences erected
– Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner.	dEO/ cEO Contractor	Obtain written approval from the relevant landowner where temporary fencing is required to restrict life-stock movement	During the construction phase	ECO, ESCO	To be monitored as temporary fencing is required	Written approval to be provided by the dEO

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All fencing must be developed of high-quality material bearing the SABS mark;	Contractor	Make use of high-quality materials approved by SABS	During the construction phase	cEO	To be monitored as fencing is erected during the construction phase	Use of high-quality materials for fencing approved by SABS
– The use of razor wire as fencing must be avoided as far as possible;	Contractor	Razor wire must not be sourced or used for the erection of fencing	During the construction phase	ECO, ESCO	To be monitored as fencing is erected during the construction phase	Fences erected do not make use of razor wire
– Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;	DSS and Contractor	Ensure fenced areas are locked as required through the implementation of a formalised process. Appoint a security company	During the construction phase	cEO	Weekly and as and when required	Fences are locked and no complaints from landowners are received. A security company is appointed
– On completion of the development phase all temporary fences are to be removed;	Contractor	Removal of all temporary fences	At the end of the Construction Phase	ECO, ESCO dEO	Once, following the completion of the construction phase	No temporary fences associated with the project is present following the completion of

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						the construction phase
– The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Contractor	Appropriate removal of all fence uprights	At the end of the Construction Phase	ECO, ESCO dEO	Once, following the completion of the construction phase	No fence uprights associated with the project is present following the completion of the construction phase

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;	Not applicable water for the project will be either sourced from municipal sources and abstraction points.					
– The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river. b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	Not applicable - water for the project will be sourced from municipal sources and abstraction points.					
– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment. b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	Contractor/dEO /cEO in consultation with the ECO, ESCO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO, ESCO	Monthly, and as and when required	Successful implementation of water conservation

5.7 Storm and wastewater management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager;	Contractor	Implement measures for the control and management of runoff	During the construction phase	ECO, ESCO	Weekly	No mismanagement of runoff or contaminated water due to the temporary concrete batching plant
– All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	Contractor and cEO	Obtain approved absorbent material and make use of licensed waste disposal facilities for disposal of oil	During the Construction Phase	ECO, ESCO	Monthly	Availability of approved absorbent material at the construction site and proof of disposal of oil at licenses disposal facilities
– Natural stormwater runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO, ESCO;	DPM in consultation with the ECO, ESCO	Consultation between the DPM and the ECO, ESCO to determine if water can be	During the construction phase	ECO, ESCO	As and when the need arises to discharge natural stormwater	Proof of consultation between the DPM and ECO, ESCO and the outcomes

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		discharged directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge			runoff and clean water	thereof to be provided. Proof of water quality testing and the results thereof.
– Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO, ESCO.	DPM in consultation with the ECO, ESCO	Consultation between the DPM and the ECO, ESCO to determine if water can be discharged directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge	During the construction phase	ECO, ESCO	As and when the need arises to discharge water	Proof of consultation between the DPM and ECO, ESCO and the outcomes thereof to be provided. Proof of water quality testing and the results thereof.

5.8 Solid and hazardous waste management

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognisded waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach;	Contractor	Develop and implement a waste management plan	During the construction phase	ECO, ESCO	Monthly	Implementation of the waste management plan and proof of waste management through proof of responsible disposal
– Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	Contractor	Provision of appropriate waste collection bins which are strategically placed throughout the site	During the construction phase	ECO, ESCO	Weekly	Appropriate waste collection bins are available throughout the site
– A suitably positioned and clearly demarcated waste collection site must be identified and provided;	DPM and Contractor	Identify an appropriate location for the waste collection site which must be clearly demarcated through signage and temporary fencing	Design and Construction Phase	ECO, ESCO	Once, prior to the commencement of construction	A waste collection site is appropriately placed and demarcated

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognisded waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The waste collection site must be maintained in a clean and orderly manner;	Contractor	Regular collection of waste and maintenance of the area must be undertaken as per the waste requirements for the project during construction	During the Construction Phase	ECO, ESCO	Weekly	The waste collection site is maintained and clean
– Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;	Contractor	Provide separate and marked bins for the different waste types associated with the construction phase	During the Construction Phase	cEO	Weekly	Separate waste bins are available on site and waste generated is separated into the relevant bins
– Staff must be trained in waste segregation;	cEO / dEO in consultation with the ECO, ESCO	Include waste segregation as part of the environmental awareness training material.	Pre-construction Construction	ECO, ESCO	Monthly, and as and when required	Environmental awareness training material requirements checklist
– Bins must be emptied regularly;	Contractor	Bins must be emptied before reaching total	During the construction phase	ECO, ESCO	Monthly	No mismanagement of bins.

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognisded waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		capacity and on a regular basis as required for the project				
– General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;	Contractor	Disposal of general waste at licensed waste disposal facilities must be undertaken as per the waste management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Hazardous waste must be disposed of at a registered waste disposal site;	Contractor	Disposal of hazardous waste at licensed waste disposal facilities must be undertaken as per the waste management plan	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Certificates of safe disposal for general, hazardous, and recycled waste must be maintained.	Contractor	Obtain certificates for safe disposal of waste	During the construction phase	ECO, ESCO	Monthly	Disposal certificates of disposal at licensed facilities to be provided and filed as part

Impact management outcome: Wastes are appropriately stored, handled, and safely disposed of at a recognisded waste facility**.**						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						of the filing system

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;	Contractor	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	During the construction phase	ECO, ESCO	Weekly	No incidents reported of spillage of pollutants into watercourses
– In the event of a spill, prompt action must be taken to clear the polluted or affected areas;	Contractor and cEO	Develop a management plan or process for implementation should a spill take place	During the construction phase	ECO, ESCO	Weekly	Feedback must be provided by the contractor in terms of how the spill was handled and photographic evidence of the feedback must be provided and kept on record
– Where possible, no development equipment must traverse any seasonal or permanent wetland	Not applicable - no wetlands are located near the site for the placement of the substation.					
– No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur;	Not applicable – no estuaries are located within the study area.					
– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;	Not applicable – no watercourses will be crossed because of the development of the substation.					

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– There must not be any impact on the long-term morphological dynamics of watercourses or estuaries;	Not applicable – the development of the substation will not have any long-term morphological impacts on watercourses as there are no watercourses present within the section of the preferred grid connection corridor where the substation will be developed.					
– Existing crossing points must be favoured over the creation of new crossings (including temporary access)	Not applicable – no new road crossings will be required for the development of substation.					
– When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction. No altering of the bed, banks, course, or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g., including ensuring that construction equipment is well maintained. c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e., sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.	Contractor	Activities undertaken near watercourses must be in-line with and consider the specified environmental controls	During the construction phase	ECO, ESCO	Monthly, and as and when required	No degradation of the watercourses and no incidents of destruction reported

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General:						
– Indigenous vegetation which does not interfere with the development must be left undisturbed;	cEO and contractor	Demarcate areas of indigenous vegetation to be avoided before clearance is undertaken	Construction and operation (i.e., for maintenance purposes)	ECO, ESCO Operation and maintenance team	Weekly, and as and when required	No unnecessary clearance of indigenous vegetation is undertaken
– Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;	Contractor	Demarcate areas containing protected or endangered species to be avoided by construction activities	During the Construction Phase	ECO, ESCO	Weekly, and as and when required	No clearance of protected or endangered species other than those permitted to be removed
– Search, rescue, and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;	Relevant specialist in consultation with the Contractor	Develop and implement a Plant Search and Rescue Plan	Pre-construction & Construction	ECO, ESCO	Weekly, and as and when required	Implementation of the Plant Search and Rescue Plan and photographic evidence and notes of the

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						implementation of the plan
– Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed;	DPM	Undertake the permitting process in order to obtain the relevant permits for the removal of protected species. Permits must be kept on file	Pre-construction	ECO, ESCO	Once, prior to the commencement of the construction phase and removal of the protected species	Permits on file
– The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;	ECO, ESCO	Ensure that the audit report indicates all species rescued and replanted and provides feedback in terms of compliance with the conditions of permits for replanting	During the Construction Phase and following the completion of the Construction Phase	**ECO, ESCO**	Once, prior to the commencement of the construction phase and removal of the protected species	Specialist report

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Trees felled due to construction must be documented and form part of the Environmental Audit Report;	ECO, ESCO	Ensure that the audit report documents the details of trees felled	During the Construction Phase and following the completion of the Construction Phase	Not Applicable		
– Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	Contractor	Felled trees, vegetation cuttings and debris must be disposed of at a licensed waste disposal facility	During the Construction Phase	ECO, ESCO	Monthly	No felled trees, vegetation cuttings and debris are dumped in inappropriate locations and disposal certificates are available as proof of responsible disposal
– Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained;	DPM and Contractor	A suitably qualified pest control operator must be appointed	Construction and Operation	ECO, ESCO	As and when the use of herbicides is required	Only registered pest control operators must be appointed, and proof of their registration must be provided

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A daily register must be kept of all relevant details of herbicide usage;	Contractor	Develop a daily register for the documentation of the details of herbicide usage	During the construction phase	ECO, ESCO	Monthly	Daily register provided by the pest control operator
– No herbicides must be used in estuaries	Not applicable - no estuaries are present within the study area					
– All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance with ***Section 5.3: Access restricted areas.***	Contractor in consultation with the cEO	Spatially demarcate protected species and sensitive vegetation and implement appropriate fencing where required as per section 5.3	During the construction phase	ECO, ESCO	Once, during the undertaking of the demarcation of the areas and the erection of the fencing	Demarcation and fencing are undertaken in-line with the requirements of section 5.3
– Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.	Contractor	Remove all alien invasive vegetation and dispose of the removed vegetation at a licensed waste management facility	During the construction phase	ECO, ESCO	Monthly, and as and when required	Disposal certificates of disposal at licensed facilities to be provided and filed as part of the filing system

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;	dEO / cEO Contractor	Develop a procedure for dealing with livestock within the affected properties	Pre-construction and during the construction phase	ECO, ESCO	Once, prior to the commencement of construction and as and when required during the construction phase	Written consent provided by the landowner and proof of representation of the landowner during interference
– The breeding sites of raptors and other wild birds' species must be taken into consideration during the planning of the development programme;	dEO / cEO in consultation with the Contractor	Ensure that the planning and development programme considers breeding sites for wild bird species	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	The planning and development programme which includes the consideration of breeding sites for wild bird species
– Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present;	dEO / cEO in consultation with the Contractor	Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledgelings	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Weekly, and as and when required during the construction. Monthly, and as and when	Photographic record of intact breeding sites

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
					required during operation	
– Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;	dEO / cEO in consultation with the Contractor	All mitigation measures recommended by the avifauna specialist must be implemented	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Weekly during construction and monthly during operation	Photographic record of compliance and successful implementation of the recommended measures
– No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;	dEO / cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of poaching are reported

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No deliberate or intentional killing of fauna is allowed;	dEO / cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No instances of deliberate or intentional killing are reported
– In areas where snakes are abundant, snake deterrents are to be deployed on the pylons to prevent snakes climbing up, being electrocuted, and causing power outages; and	dEO / cEO in consultation with the Contractor	Implement and maintain snake deterrents in areas where snakes are abundant	During the Construction Phase Operation Phase	ECO, ESCO Operation and maintenance team	Once, during the construction and as and when required. Monthly during operation	Photographic record of the implementation and maintenance of snake deterrents
– No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004), and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.	DPM in consultation with the dEO	Undertake a permitting process to obtain the required permits	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Permits for removal and/relocation must be kept on

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
					and as and when required	file and be readily available

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate, and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in **Section 5.3: Access restricted areas;**	No significant and sensitive Heritage and Palaeontological areas identified in the specialist assessment.					
– Carry out general monitoring of excavations for potential fossils, artefacts, and material of heritage importance;	Suitably qualified specialist in consultation with the ECO, ESCO	Appoint a suitably qualified specialist to carry out the monitoring of excavations for fossils, artefacts, and important heritage material	During the Construction Phase	ECO, ESCO	During the undertaking of excavations of fossils, artefacts, and heritage material	Proof of appointment of a suitably qualified specialist and photographic record of required

Impact management outcome: Impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						monitoring by the specialist
– All work must cease immediately, if any human remains and/or other archaeological, palaeontological, and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences	dEO / cEO in consultation with the Contractor and ECO, ESCO	Develop and implement procedures for situations where human remains, archaeological, palaeontological, or historical material are uncovered	During the Construction Phase	ECO, ESCO	Weekly, during the construction phase and as and when required	Proof of work ceased, and the required procedures followed in cases where material is discovered.

5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm, or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate, and restrict public access to these areas as well as notify the local authority of any potential threats e.g., large brush stockpiles, fuels etc.;	cEO in consultation with the Contractor	Develop an Emergency Preparedness,	Pre-construction Construction	ECO, ESCO	Once, prior to the commencement	Compliance with the Emergency Preparedness,

Impact management outcome: All precautions are taken to minimise the risk of injury, harm, or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		Response and Fire Management Plan specific to the project			of construction and weekly during the construction phase	Response and Fire Management Plan
– All unattended open excavations must be adequately fenced or demarcated;	Contractor	Ensure that all excavations undertaken is fenced and demarcated within a reasonable timeframe and in instances where excavations will be open for long-periods of time	During the Construction Phase	ECO, ESCO	Weekly	Excavations are fenced where required and photographic proof can be provided
– Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed infrastructure and protective scaffolding;	Contractor	All staff must be easily identifiable, and the climbing of infrastructure and scaffolding must be undertaken by authorised personnel as	During the construction phase	ECO, ESCO	Monthly, and as and when required	No incidents of unauthorised climbing are reported

Impact management outcome: All precautions are taken to minimise the risk of injury, harm, or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		managed by the Contractor				
– Ensure structures vulnerable to high winds are secured;	Contractor	Ensure that sufficient stabilisation measures are implemented to secure structures vulnerable to high winds	During the construction phase	ECO, ESCO	Weekly, and as and when required	No incidents of unstable structures due to high winds is reported
– Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	cEO	Compile and regularly update as incidents and complaints are submitted from the public and indicate the actions taken to resolve the complaint	During the construction phase	ECO, ESCO	Monthly, and as and when required	The incidents and complaints register are complete and provides all the required details

5.14 Sanitation

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available;	Contractor	Mobile chemical toilets must be placed appropriately and in areas which avoid environmental sensitivities	During the Construction Phase	ECO, ESCO	Weekly	Mobile toilets are installed and avoid environmental sensitivities
– The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;	Contractor in consultation with the cEO	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement.	Pre-construction & Construction	ECO, ESCO	Monthly, and as and when required	No evidence of non-compliance identified
– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body. b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause.	Contractor in consultation with the cEO	The installation of the toilets by the Contractor must be as per the listed requirements	During the Construction Phase	ECO, ESCO	Weekly	No evidence of non-compliance identified

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
c) No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr. d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. e) Toilets are emptied before long weekends and workers holidays and must be locked after working hours. f) Toilets are serviced regularly, and the ECO, ESCO must inspect toilets to ensure compliance to health standards;						
– A copy of the waste disposal certificates must be maintained.	Contractor	Certificates obtained from the licensed waste disposal facility with the emptying of the toilets must be kept on file	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Certificates for waste disposal from the licensed waste disposal facility

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally friendly pest control in the camp area;	Contractor	Only environmentally friendly pest control must be used, when required	During the Construction Phase	ECO, ESCO	As and when pest control is required for the project	Contractor to provide proof of pest control used being environmentally friendly
– Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/ AIDS;	cEO / Contractor in consultation with the ECO, ESCO	The effects of sexually transmitted diseases and HIV/ AIDS must be covered in the Environmental Awareness Training	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during construction	Environmental awareness training material requirements checklist
– The Contractor must ensure that information posters on HIV/ AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/ AIDS	During the Construction Phase	ECO, ESCO	Weekly	Photographic evidence of poster placement
– Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;	cEO / Contractor in consultation with the ECO, ESCO	Information and education of sexually transmitted diseases must be covered in the Environmental Awareness Training.	Pre-construction & Construction	ECO, ESCO	Monthly	Environmental awareness training material requirements checklist

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Free condoms must be made available to all staff on site at central points;	Contractor	Placement of free condoms in mobile toilets and at the construction camps	During the Construction Phase	ECO, ESCO	Monthly	Proof of placement of free condoms by the contractor to be provided
– Medical support must be made available;	dEO / cEO in consultation with the Contractor	Ensure that designated personnel with first aid training are available on site and that first aid kits to provide medical support is readily available	Construction and Operations	ECO, ESCO	Monthly	Check the availability of first aid trained personnel and medical kits (including if these are complete in terms of supplies)
– Provide access to Voluntary HIV Testing and Counselling Services.	Contractor	Compile a HIV testing schedule and provide counselling services where required	During the Construction Phase	ECO, ESCO	Quarterly, and as and when required	Voluntary testing schedules and proof of counselling (where undertaken)

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan compiled
– The Emergency Plan must deal with accidents, potential spillages, and fires in line with relevant legislation;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project which covers accidents, potential spillages, and fires	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan includes required specifications
– All staff must be made aware of emergency procedures as part of environmental awareness training;	cEO / dEO in consultation with the ECO, ESCO	Develop environmental awareness training material which covers the relevant	Pre-construction	ECO, ESCO	Prior to the commencement of the environmental	Environmental awareness training material requirements checklist

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		emergency procedures			awareness training	
– The relevant local authority must be made aware of a fire as soon as it starts;	Contractor in consultation with the ECO, ESCO	Develop and include a procedure in the Emergency Preparedness, Response and Fire Management Plan for the event of a fire and the procedure to be followed for informing the local authority	Construction	ECO, ESCO	As and when a fire occurs	The local authority was informed as per the relevant procedure set out in the Emergency Preparedness, Response and Fire Management Plan
– In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17).***	Contractor	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction and Operations	ECO, ESCO	As and when a spill or leak occurs	The mitigation measures included under Section 5.17 have been adhered to

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	cEO in consultation with the Contractor	Develop a strategy of how hazardous substances can be and should be minimised	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Contractor to provide evidence of substances used for proof of compliance
– All hazardous substances must be stored in suitable containers as defined in the Method Statement;	Contractor	Develop a Method Statement for the storage of hazardous substances in suitable containers	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Photographic proof that hazardous substances are stored in suitable containers as per the requirements of the relevant Method Statements
– Containers must be clearly marked to indicate contents, quantities, and safety requirements;	Contractor	Where hazardous waste is stored, these must be clearly marked indicating the	During the Construction Phase	ECO, ESCO	Monthly	Photographic proof that containers are marked as per the requirements

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		required details of the contents				
– All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;	Contractor	Ensure that storage areas are sufficiently bunded which are of sufficient capacity to contain a spill / leak from the stored containers	During the Construction Phase	ECO, ESCO	Monthly during the Construction Phase	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity to contain a spill / leak from the stored containers
– Bunded areas to be suitably lined with a SABS approved liner;	Contractor	Ensure that bunded storage areas are suitably lined	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase	Photographic proof that bunded storage areas are suitably lined
– An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;	cEO / Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS) control sheet specific to the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complete and up to date control sheet provided by the Contractor

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	cEO / Contractor	Keep a record of all hazardous chemicals and the respective MSDS	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Record of hazardous chemicals and the respective MSDS
– All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;	cEO / Contractor	Provide training for personnel working with HCS	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction and as and when required	Record of training provided to personnel working with HCS
– Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;	cEO / Contractor	Develop environmental awareness training material which covers the relevant impacts and safety measures. Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous	Pre-construction & Construction	ECO, ESCO	Prior to the commencement of the environmental awareness training and monthly during the construction phase for personal protective equipment	Environmental awareness training material requirements checklist and all relevant personnel have undergone appropriate training and have access to personal protective equipment

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		substances and materials				
– The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	Contractor	Appropriate storage facilities must be constructed or obtained for the storing of diesel, other liquid fuel, oil, and hydraulic fluid	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage tanks for the project are appropriate and no incidents are reported in this regard
– The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);	Contractor	Appropriate storage facilities must be constructed or obtained for tanks as per the requirements listed	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Storage areas for the tanks/ bowsers for the project are appropriate and no incidents are reported in this regard
– The floor of the bund must be sloped, draining to an oil separator;	Contractor	Appropriate storage facilities must be constructed as per the requirements listed	During the Construction Phase	ECO, ESCO	Once, during construction	Bunded storage areas are constructed according to the requirements

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;	Contractor	Appropriately constructed refuelling facility must be developed as per the requirements. Drip trays must be provided for use	During the Construction Phase	ECO, ESCO cEO	Monthly Weekly	Soils at the refuelling facility are protected as required and drip trays are provided and used
– All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that empty dirty drums are stored appropriately as per the requirements	During the Construction Phase	ECO, ESCO cEO	Monthly Weekly	Drip trays or bunded areas are used for the storage of dirty drums
– No unauthorised access into the hazardous substance's storage areas must be permitted;	Contractor	Ensure through the implementation of procedures that no unauthorised access is undertaken into the storage areas	During the Construction Phase	ECO, ESCO	Monthly	Proof of the implementation of the relevant procedure must be provided by the contractor
– No smoking must be allowed within the vicinity of the hazardous storage areas;	Contractor	Inform all employees of the requirement and develop and place	During the Construction Phase	ECO, ESCO cEO	Monthly Weekly	Photographic record of the signage placed must be provided

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		relevant signage in the relevant areas				
– Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting equipment	During the Construction Phase	ECO, ESCO	Monthly	Adequate fire-fighting equipment is available and has been serviced
– Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used;	Contractor	Provide a mobile refuelling unit as well as suitable ground protection, where required	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	A mobile refuelling unit and suitable ground protection is available for use
– An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;	Contractor	Provide an appropriate spill kit for the project for the use of hazardous substances	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use
– The responsible operator must have the required training to make use of the spill kit in emergency situations;	cEO and Contractor	Provide training on the use of spill kits to the relevant employees	Pre-construction	ECO, ESCO	Once, prior to the commencement of construction	Proof of training to be provided by the contractor

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;	cEO and Contractor	Provide an appropriate number of spill kits in relevant areas	During the Construction Phase	ECO, ESCO	Monthly	Proof of appropriate number of spill kits in appropriate areas to be provided by the contractor
– In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***	cEO and Contractor	Storage and disposal of contaminated soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and 5.8 of this EMPr	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Proof of storage and disposal in terms of the National Environmental Management: Waste Act must be provided. Certificates of disposal at licensed waste disposal facilities must be provided

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;	Contractor	Demarcate specific areas for the maintenance of vehicles and equipment	During the Construction Phase	ECO, ESCO	Monthly	A dedicated area for the maintenance of vehicles and machinery is used.
– During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;	Contractor	Ensure that a drip tray is available for an emergency repair required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide evidence of drip tray use for emergency repairs
– Leaking equipment must be repaired immediately or be removed from site to facilitate repair;	Contractor	Ensure that where leaking equipment is identified it is repaired immediately or removed from site for repairs	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide details of equipment repaired or removed from site
– Workshop areas must be monitored for oil and fuel spills;	cEO	Undertake regular inspections of the workshop areas for oil and fuel spills and keep an	During the Construction Phase	ECO, ESCO	Monthly	Register of inspection

Impact management outcome: Soil, surface water and groundwater contamination is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		updated register of inspection on site				
– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	Contractor	Provide an appropriate spill kit for the project	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Appropriate spill kits are available for use
– The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;	Contractor	Ensure that the workshop area is sufficiently bunded in accordance with the required specification	During the Construction Phase	ECO, ESCO	Once, during the Construction Phase and as and when required	Workshop area is bunded in accordance with the required specification
– Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Storm and waste water management.***	Contractor	Ensure that water drainage from workshop area is managed as per the requirements of section 5.7	During the Construction Phase	ECO, ESCO	Monthly	Workshop drainage is managed in accordance with the requirements

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface;	Contractor	Provide impermeable surface for the mixing of concrete	During the Construction Phase	ECO, ESCO	Weekly	No concrete mixing is undertaken on open ground
– Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	Contractor	Provide containment facility for the collection of cement laden water	During the Construction Phase	ECO, ESCO	Weekly	No cement laden water is released into the environment
– Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	Contractor	Provide containment facility for the collection of cement laden water (dirty water)	During the Construction Phase	ECO, ESCO	Weekly	No cement laden water is released into the environment
– Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies, and drains;	Contractor	Demarcate and provide a storage area for bagged cement in-line with the listed requirements	During the Construction Phase	ECO, ESCO	Weekly	Photographic proof of bagged cement stored within the demarcated area
– A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provide a washout facility for the washing of associated equipment. Enforce limitations on water use for washing of equipment	During the Construction Phase	ECO, ESCO	Weekly	No cement laden water is released into the environment. Only minimal water is used for washing

– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licensed disposal facility;	Contractor	Make use of hardened concrete where possible or dispose of concrete in a suitable manner	During the Construction Phase	ECO, ESCO	Monthly	Certificates of disposal of concrete at licensed waste disposal facility
– Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;	Contractor	Bind empty cement bags and temporarily store it in an appropriate area on site	During the Construction Phase	ECO, ESCO	Monthly	Proof of binding of empty cement bags and storage in an appropriate area on site to be provided by the Contractor
– Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***)	Contractor	Ensure that sand and aggregates are kept damp or otherwise protected from dust generation	During the Construction Phase	ECO, ESCO	Monthly	Proof of damping (or alternative dust suppression) of sand and aggregates must be provided by the Contractor
– Any excess sand, stone and cement must be removed or reused from site on completion of the construction period and disposed at a registered disposal facility;	Contractor	Ensure that all excess sand, stone, and cement is removed or reused	At the completion of the Construction Phase	ECO, ESCO	Once, with the completion of construction	Certificates for the disposal of sand, stone and cement at licensed waste disposal facilities or proof of reuse must be provided
– Temporary fencing must be erected around batching plants in accordance with Section ***5.5: Fencing and gate installation.***	Contractor	Erect temporary fencing around batching plants as per the	During the Construction Phase	ECO, ESCO	Weekly	Temporary fencing is undertaken in

		requirements listed in section 5.5				accordance with section 5.5

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO, ESCO;	Contractor	Apply appropriate dust suppressant	During the Construction Phase	ECO, ESCO	Weekly	Contractor to provide proof of use of appropriate dust suppressants
– Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible;	Contractor	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	During the Construction Phase and Rehabilitation	ECO, ESCO	Weekly	Plan for implementation must be provided by the Contractor
– Excavation, handling, and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	Contractor	Ensure that specific limitations are placed on the transport and handling of erodible materials during high wind conditions or when	During the Construction Phase	ECO, ESCO	Bi-weekly (every second week)	No complaints submitted in this regard

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		a visible dust plume is present				
– During high wind conditions, the ECO, ESCO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;	ECO, ESCO	ECO, ESCO to provide adequate recommendations	During the Construction Phase	ECO, ESCO	Daily	Recommendations made by the ECO, ESCO have been implemented by the Contractor
– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor	Place soil stockpiles in areas less affected by wind	During the Construction Phase	ECO, ESCO	Bi-weekly (every second week)	Soil stockpiles are not exposed to wind and have not been eroded
– Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO, ESCO;	Contractor in consultation with the ECO, ESCO	Contractor to implement erosion control measures as recommended and agreed with the ECO, ESCO	During the Construction Phase	ECO, ESCO	Weekly, until erosion is no longer a problem	Recommendations made by the ECO, ESCO have been implemented by the Contractor
– Vehicle speeds must not exceed 30 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas:	cEO / dEO / contractor	Inform all drivers of speed limits and place appropriate signage along the relevant roads	During the Construction Phase Operation Phase	ECO, ESCO Operation and Maintenance team	Monthly	No complaints from community members are submitted

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks:	Contractor	Ensure that straw stabilisation is undertaken as per the listed requirements	During the Construction Phase	ECO, ESCO	Monthly	Photographic record of all straw stabilisation undertaken
– For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	Contractor	Appropriate dust suppressant measures are implemented	During the Construction Phase	ECO, ESCO	Weekly	Photographic record of measures being implemented and the results thereof

5.21 Blasting

Impact management outcome: Impact to the environment is minimized through a safe blasting practice.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and	Not Applicable – no blasting proposed					

Impact management outcome: Impact to the environment is minimized through a safe blasting practice.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	Not Applicable – no blasting proposed					

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;	Contractor	Ensure that noise limits do not exceed acceptable limits and avoid the use of amplification communication	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. No amplification equipment is used.
– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor	Provide and implement silencing technology	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	No complaints registered in this regard. Silencing technology is utilised.

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;	cEO	Update complaints register. Provide daily transport to and from site for employees	During the Construction Phase	ECO, ESCO	Monthly, and as and when required	Complaints register provided by the cEO and proof of transportation services provided
– Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	cEO and Contractor in consultation with the ECO, ESCO	Compile a Code of Conduct for staff. Appropriate operating hours must be identified for the project.	Pre-construction and Construction	ECO, ESCO	Once, prior to the commencement of construction	No complaints registered in this regard.

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant;	cEO / Contractor	Identify and demarcate through signage for designated smoking areas	Pre-construction & Construction	ECO, ESCO	Monthly	Photographic record of designated smoking area
– Firefighting equipment must be available on all vehicles located on site;	cEO / dEO in consultation with the Contractor	Provide all vehicles with firefighting equipment	Construction	ECO, ESCO	Monthly	All vehicles are fitted with firefighting equipment and the details thereof are provided by the cEO
– The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO in consultation with the ECO, ESCO	Undertake formal consultation to inform the local FPA of the associated construction activities	Pre-construction	ECO, ESCO	Once, during the commencement of the Construction Phase	Proof of consultation with the FPA
– Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;	dEO / cEO / Contractor in	Develop environmental awareness training	Pre-construction & Construction	ECO, ESCO	Prior to the commencement of the	Environmental awareness training material

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
	consultation with the ECO, ESCO	material which covers the contact numbers for the FPA and emergency services. Place the contact numbers for the FPA and emergency services at a visible and central location			environmental awareness training and once during the construction phase	requirements checklist and photographic record of contact numbers on display
– Two-way swop of contact details between ECO, ESCO and FPA.	ECO, ESCO	Consultation between the ECO, ESCO and FPA in order to exchange contact details	Pre-construction	Not Applicable		

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses and water bodies;	Contractor	Identify and demarcate an appropriate location for the storage of excavated materials	Pre-construction & Construction	ECO, ESCO	Monthly	Excavated material is not stored within sensitive environmental areas
– All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;	Contractor	Implement appropriate and sufficient maintenance on stockpiled material regularly	During the Construction Phase	ECO, ESCO	Bi-monthly (every second month)	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
– Topsoil stockpiles must not exceed 2 m in height:	Contractor	Enforce limitations for the height of topsoil stockpiles	During the Construction Phase	ECO, ESCO	Bi-monthly (every second month)	Topsoil stockpiles do not exceed 2m in height
– During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g., cloth, tarpaulin etc.);	Contractor	Appropriate material must be provided in order to cover stockpiles when required	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of appropriate material to cover stockpiles when required

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor	Sandbags must be provided in order to prevent erosion of stockpiled materials	During the Construction Phase	ECO, ESCO	Monthly	Contractor to provide proof of availability of sandbags to prevent erosion of stockpiled materials

5.25 Civil works

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone;	Contractor	Collect and retain topsoil for terracing	During the Construction Phase Rehabilitation	ECO, ESCO	Weekly	Proof of collection and retaining of topsoil
– Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards;	Contractor	Undertake rehabilitation of terrace	During the Construction Phase Rehabilitation	ECO, ESCO	Weekly	Photographic record of rehabilitation of

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		embankments and areas outside of the high voltage yard where applicable				terrace embankments and areas outside the high voltage yards
– Where required, all sloped areas must be stabilised to ensure proper rehabilitation is affected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	ECO, ESCO	Weekly	Disturbed slopes are stabilised sufficiently
– These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;	Contractor	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO, ESCO	Weekly	Slopes are stabilised as per the design specifications
– Rehabilitation of the disturbed areas must be managed in accordance with ***Section 5.35: Landscaping and rehabilitation;***	Contractor	Undertaken rehabilitation of disturbed areas as per the requirements listed under section 5.35	Rehabilitation	ECO, ESCO	Weekly	Rehabilitation of disturbed areas is undertaken in-line with the requirements of section 5.35
– All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	ECO, ESCO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction and Rehabilitation	ECO, ESCO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a licensed landfill site, if not used for backfilling purposes;	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	ECO, ESCO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction and Rehabilitation	ECO, ESCO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor
– Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop, equipment maintenance and storage***; and	Contractor	Undertake the management of equipment for excavation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18
– Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances.***	Contractor	Undertake the management of hazardous substances spills from equipment as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances spills from equipment is undertaken in line with the requirements of section 5.17

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching of cement to be undertaken in accordance with ***Section 5.19: Batching plants***; and	Contractor	Undertake the batching of cement as per the requirements of section 5.19	During the Construction Phase	ECO, ESCO	Monthly	Management of batching cement is undertaken in line with the requirements of section 5.19
– Residual solid waste must be disposed of in accordance with ***Section 5.8: Solid waste and hazardous management.***	Contractor	Undertake the disposal of solid waste as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The disposal of solid waste is undertaken in line with section 5.8.

5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Management of dust must be conducted in accordance with Section ***5. 20: Dust emissions***;	Contractor	Manage dust as per the requirements of section5.20	During the Construction Phase	ECO, ESCO	Weekly	The management of dust is undertaken as per the requirements of section 5.20
– Management of equipment used for installation must be conducted in accordance with Section ***5.18: Workshop, equipment maintenance and storage***;	Contractor	Undertake the management of equipment for installation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18
– Management of hazardous substances and any associated spills must be conducted in accordance with Section ***5.17: Hazardous substances***; and	Contractor	Undertake the management of hazardous substances and associated spills as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances and associated spills is undertaken in line with the requirements of section 5.17
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management.***	Contractor	Undertake the recycling or disposal of residual solid waste as per the	During the Construction Phase	ECO, ESCO	Monthly	The recycling or disposal of residual solid waste is

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		requirements of section 5.8				undertaken in line with section 5.8.

5.29Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g., bolts and nuts	Contractor	Inspect areas where construction is being undertaken and remove and appropriately dispose of wasted/unused materials	During the Construction Phase	ECO, ESCO	Weekly	Contractor to provide proof of inspection and removal of waste/unused materials and the appropriate disposal thereof (i.e., disposal certificates)
– Emergency repairs due to breakages of equipment must be managed in accordance with ***Section 5.18: Workshop, equipment maintenance and storage*** and ***Section 5.16: Emergency procedures.***	Contractor	Undertake emergency repairs of equipment as per the requirements of section 5.18 and 5.16	During the Construction Phase	ECO, ESCO	Weekly	Emergency repairs of equipment is undertaken as per the requirements of section 5.18 and 5.16

5.30 Cabling and Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with Section ***6.8: Solid waste and hazardous Management;***	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.
– Management of equipment used for installation shall be conducted in accordance with ***Section 5.18: Workshop, equipment maintenance and storage;***	Contractor	Undertake the management of equipment for installation as per the requirements of section 5.18	During the Construction Phase	ECO, ESCO	Monthly	Management of equipment for installation is undertaken in line with the requirements of section 5.18
– Management of hazardous substances and any associated spills shall be conducted in accordance with ***Section 5.17: Hazardous substances.***	Contractor	Undertake the management of hazardous substances and associated spills as per the requirements of section 5.17	During the Construction Phase	ECO, ESCO	Monthly	Management of hazardous substances and associated spills is undertaken in line with the requirements of section 5.17

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Impact management outcome: No environmental degradation occurs as a result of Testing and Commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management.***	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO, ESCO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.

5.32 Socio-Economic

Impact management outcome: enhanced socio-ECO, ESCO development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation;	dEO / cEO	Identify and implement appropriate strategies for communication	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly	Communication is undertaken as per the identified strategies and no complaints are

Impact management outcome: enhanced socio-ECO, ESCO development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		with the communities through consideration of the community needs			during the construction	submitted regarding communication
– Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;	Contractor	Development and implement a Grievance Mechanism which considers the community needs and provides procedures for conflict resolution	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Conflict resolution is undertaken in line with the requirements of the Grievance Mechanism. No complaints on conflict resolution are submitted by the community
– Sustain continuous communication and liaison with neighbouring owners and residents	Contractor	Development and implement a Grievance Mechanism which provides procedures for communication / liaison with	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	Communication / liaison with neighbouring landowners and residents are undertaken in line with the requirements of

Impact management outcome: enhanced socio-ECO, ESCO development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		neighbouring landowners and residents				the Grievance Mechanism. No complaints on communication with neighbouring landowners and residents is submitted
– Create work and training opportunities for local stakeholders; and	Contractor	Develop and implement a "locals first" policy for the provision of employment opportunities	Pre-construction & Construction	ECO, ESCO	Once, prior to the commencement of construction and monthly during the construction phase	The "locals first" policy is considered in terms of the employment and training opportunities
– Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	Not Applicable - no workers, other than security is proposed to stay on-site overnight.					

5.33 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage;***	Contractor	Regular emptying of the bunds must be undertaken. This must be undertaken as per the requirements listed in sections 5.17 and 5.18	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirements listed under sections 5.17 and 5.18
– Hazardous storage areas must be well ventilated;	Contractor	Install appropriate ventilation in all hazardous storage areas	During the construction phase	ECO, ESCO	Prior to site closure for more than 05 days	Effective ventilation is installed in hazardous storage areas
– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor / cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure service records	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		are kept up to date and filed				
– Emergency and contact details displayed must be displayed;	Contractor / cEO	Place emergency and contact details which are readily available and easily accessible	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Photographic proof of contact details on display
– Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;	Contractor in consultation with the ECO, ESCO	Hold a workshop with all security personnel to provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel	Pre-construction & construction	ECO, ESCO	Prior to site closure for more than 05 days	Proof of the workshop held must be kept on file by the contractor.
– Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;	Contractor	Regular checks of night hazards	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of checks of night hazards

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		must be undertaken				must be provided by the contractor
– Fire hazards identified and the local authority must have been notified of any potential threats e.g., large brush stockpiles, fuels etc.;	cEO / Contractor in consultation with the ECO, ESCO	Identify any potential fire hazards and notify the relevant local authority	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Proof of notification of the fire hazards to the local authority must be provided by the Contractor
– Structures vulnerable to high winds must be secured;	Contractor	Ensure structures vulnerable to wind is secure prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Structures vulnerable to wind is secured prior to site closure
– Wind and dust mitigation must be implemented;	Contractor	Implement wind and dust mitigation prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Wind and dust mitigation is implemented prior to site closure
– Cement and materials stores must have been secured;	Contractor	Ensure cement and material stores are secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Cement and material stores are secured prior to site closure

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Toilets must have been emptied and secured;	Contractor	Ensure toilets are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Toilets are emptied and secured prior to site closure
– Refuse bins must have been emptied and secured;	Contractor	Ensure refuse bins are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Refuse bins are emptied and secured prior to site closure
– Drip trays must have been emptied and secured.	Contractor	Ensure drip trays are emptied and secured prior to site closure	During the Construction Phase	ECO, ESCO	Prior to site closure for more than 05 days	Drip trays are emptied and secured prior to site closure

5.34 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage, and disposal of old equipment commissioning.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment;	Contractor	Appropriately store old equipment in a manner which prevents pollution to the environment. This could include the construction of bunded areas	Decommissioning	ECO, ESCO	Monthly	Photographic record of appropriate storage of old equipment
– Oil containing equipment must be stored to prevent leaking or be stored on drip trays;	Contractor	Appropriately store equipment containing oil through the use of drip trays or other suitable methods	Decommissioning	ECO, ESCO	Monthly	Photographic record of appropriate storage of equipment containing oil
– All scrap steel must be stacked neatly, and any disused and broken insulators must be stored in containers;	Contractor	Ensure all scrap steel is stacked neatly and store disused and broken insulators in appropriate containers	Decommissioning	ECO, ESCO	Monthly	Photographic record of stacked scrap steel and containers containing broken and disused insulators

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage, and disposal of old equipment commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment;	Contractor	Develop and implement a procedure for the dismantling and transportation of equipment containing pollution causing substances which prevents spillage and pollution of the environment	Decommissioning	ECO, ESCO	Monthly	Proof from contractor that dismantling and transportation of equipment containing pollution causing substances has been undertaken in an appropriate manner
– The Contractor must also be equipped to contain and clean up any pollution causing spills; and	Contractor	Ensure sufficient spill kits are available for the clean-up of pollution causing spills	Decommissioning	ECO, ESCO	Monthly	Sufficient spill kits are available on site
– Disposal of unusable material must be at a licensed waste disposal site.	Contractor	Make use of a licensed waste disposal site	Decommissioning	ECO, ESCO	Monthly	Certificates obtained for the disposal at a licensed waste disposal site

5.35 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site;	Contractor	Develop and implement a rehabilitation plan for the rehabilitation of all disturbed areas. Dispose of all spoil and waste at a licensed waste disposal facility	Pre-construction & Rehabilitation	ECO, ESCO	Weekly	Rehabilitation of the disturbed areas is undertaken as per the rehabilitation plan. All certificates of waste disposal at licensed facilities are available.
– All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether contouring is required	Rehabilitation	ECO, ESCO	Weekly	All slopes are assessed and contoured as required
– All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;	Contractor in consultation with the ECO, ESCO	Assess all slopes and determine whether terracing is required	Rehabilitation	ECO, ESCO	Weekly	All slopes are assessed and terraced as required
– Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;	Contractor	Ensure all berms have a slope of 1:4 and is replanted	Rehabilitation	ECO, ESCO	Weekly	All berms have a slope of 1:4 and is replanted with indigenous

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		with indigenous species and grasses				species and grasses
– Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;	Not applicable					
– Rehabilitation of access roads inside of farmland;	Not applicable					
– Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Make use of indigenous species for rehabilitation	Rehabilitation	ECO, ESCO	Weekly	Indigenous species are used for rehabilitation
– Stockpiled topsoil must be used for rehabilitation (refer to ***Section 5.24: Stockpiling and stockpiled areas***);	Contractor	Ensure stockpiled topsoil is used as per the requirements listed under section 5.24	Rehabilitation	ECO, ESCO	Weekly	Stockpiled topsoil is used as per the requirements listed under section 5.24
– Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;	Contractor	Ensure that topsoil is spread evenly	Rehabilitation	ECO, ESCO	Weekly	Topsoil is spread evenly
– Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	Contractor	Remove all visible weeds from placement area and topsoil before spreading the topsoil	Rehabilitation	ECO, ESCO	Weekly	No weeds are visible in the placement area or the topsoil

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Subsoil must be ripped before topsoil is placed;	Contractor	Undertake the ripping of subsoil prior to the spreading of topsoil	Rehabilitation	ECO, ESCO	Weekly	Subsoil is ripped before topsoil is placed
– The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;	Contractor	Plan the timeframe for rehabilitation in order to undertake vegetation planting during the optimal time for vegetation establishment	Rehabilitation	ECO, ESCO	At the start of rehabilitation to confirm the correct timeframe	Rehabilitation is undertaken during the optimal time
– Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	ECO, ESCO	Weekly	Disturbed slopes are stabilised sufficiently
– Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;	Contractor	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO, ESCO	Weekly	Slopes are stabilised as per the design specifications
– Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil.	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Rehabilitation	ECO, ESCO	Weekly	Photographic record of spoil used for landscaping purposes as well

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						as feedback from the contractor
– Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen. b) Pioneer species are included. c) Species chosen must be indigenous to the area with the seeds used coming from the area. d) Root systems must have a binding effect on the soil. e) The final product must not cause an ecological imbalance in the area	Contractor in consultation with a suitably qualified specialist	Make use of a suitable vegetation seed mixture should enhancement be required	Rehabilitation	ECO, ESCO	As and when required	Use of a suitable vegetation seed mixture if required

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of Regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant: Western Cape Wind Farm (RF) (Pty) Ltd

PROJECT APPLICANT DETAILS	
DEVELOPMENT ENTITY	
Applicant Name	Western Cape Wind Farm (RF) (Pty) Ltd
Responsible Person	Mr Matteo Giulio Luigi Brambilla
Address	14th Floor Pier Place Heerengracht Street Foreshore Cape Town 8001
Contact Details	+27 (0)21 418 3940 (T) +27 (0)72 212 1531 (C) Email: m.logan@redrocket.energy

7.1.2 Details and expertise of the EAP: Terramanzi Group (Pty) Ltd

Details and expertise of the EAP:	
EAP Name	Ludwig van der Merwe - Terramanzi Group (Pty) Ltd
EAP Qualifications	BSc (with Hons) in Conservation Ecology from the University of Stellenbosch and a Master of Environmental Management and Development from the Australian National University
Professional Affiliation/Registration	EAPASA (2020/2817) SACNASP (Pr.Sci.Nat) (133969)
Physical Address	16 Bell Crescent, Westlake, Cape Town, 7945
Telephone	021 701 5228
Cell phone	082 575 3800
Email Address	environmental@terramanzi.co.za

The EMPr was compiled by: Ludwig van der Merwe (Terramanzi Group - EAPASA 2020/2817)
The EMPr was peer-reviewed by: Fabio Venturi (Terramanzi Group - EAPASA 2021/4088)
The EMPr was reviewed by: Tarryn Frankland (Terramanzi Group - EAPASA Candidate 2022/6205),
Bryan Cloete (Terramanzi Gorup), Chane Olckers (Terramanzi Group), and Ana Mosse (Terramanzi Group).

7.1.3 Project name

Proposed IPP WCWEF 132kV Substation to connect the authorised WCWEF to the National Grid via the Eskom Agulhas Main Transmission Substation.

7.1.4 Description of the project

Western Cape Wind Farm (Pty) Ltd received Environmental Authorisation, dated 12 December 2021 (DFFE Ref:14/12/16/3/3/1/2437) for the development of the Western Cape WEF within the Swellendam Local

Municipality in the Western Cape Province. The project is located within the Overberg REDz 1.

Western Cape Find Farm (Pty) Ltd has undergone internal changes since the first authorisation was received on 12 December 2021. One of which is that the company is now Ring-Fenced. Therefore, the current applicant is Western Cape Wind Farm (RF) (Pty) Ltd.

The Applicant has also reiterated that should the Competent Authority decide to authorize this Application that it is imperative that the EMPr and corridor layout be approved as assessed and presented for approval to allow the Project to comply with the requirements of the REIPPPP and reach financial close. Based on the findings of the professional team and the EAP, it is reasonable to suggest that the Competent Authority can approve both the EMPr and layout as applied for.

Table 2: Details of the land parcel on which the WCWEF 132kV on-site Substation

Cadastral Land Parcel	SG Code	Approximate Co-ordinates of the Substation on land portion
Remaining extent of Portion 2 of Farm Kluitjieskraal, 256	C07300000000025600002	34° 8'48.33"S, 20°21'10.90"E

7.1.5 Project location:

The WCWEF 132Kv Substation will be located within the Western Cape Wind Energy Facility development area. The Wind Energy Facility will traverse the following farm portions: Remainder of portion 2 of the farm Kluiitjieskraal No 256, Remainder of the farm Nooitgedacht A No 355, Portion 1 of the farm Nooitgedacht A No 355, Portion 2 of the farm Klein Croedinie No 356, Remainder of the farm Kluitjieskraal No 256, Portion 4 of the farm Kluitjieskraal No 256, Portion 3 of the farm Kluitjieskraal No 256, Portion 5 of the farm Kluitjieskraal No 256, Farm Burgerts Dal No 357, Farm Kluitjieskraal No 710within the Swellendam Local Municipality in the Western Cape Province (Figure 2).

The approximate co-ordinates of Western Cape Wind Energy Facility in which the proposed 132kV substation will be located:

- Northern boundary: 34° 5'44.66"S; 20°22'53.16"E
- Eastern boundary: 34°11'5.33"S; 20°26'26.06"E
- Middle point: 34° 9'47.49"S; 20°22'9.03"E
- Southern boundary: 34°12'35.70"S; 20°25'35.77"E
- Western boundary: 34° 8'39.34"S; 20°19'45.39"E

Technical Details

The proposed project will include:

- A 33/132kV WCWF IPP on-site substation (0.65ha),
- Associated Balance of Plant Areas,
- Operation and Maintenance buildings which will include control centre, warehouses, workshops, visitor's centre and offices

Capacity and location of the WC WEF IPP Substation	Up to 33/132kV substation, located adjacent to FE Overberg's FEO IPP Substation
Development footprint of the WC WEF IPP Substation	Up to 0.7 ha.

Development footprint of the Operation and Maintenance buildings and Balance of Plant areas	Includes: Control centre, warehouses and workshops, and visitor's centre and offices Total development footprint: Up to 1.75 hectares
Fencing	Galvanized palisade fencing to be used at the on-site Substation hub with the maximum height of the fencing to be up to 4 m

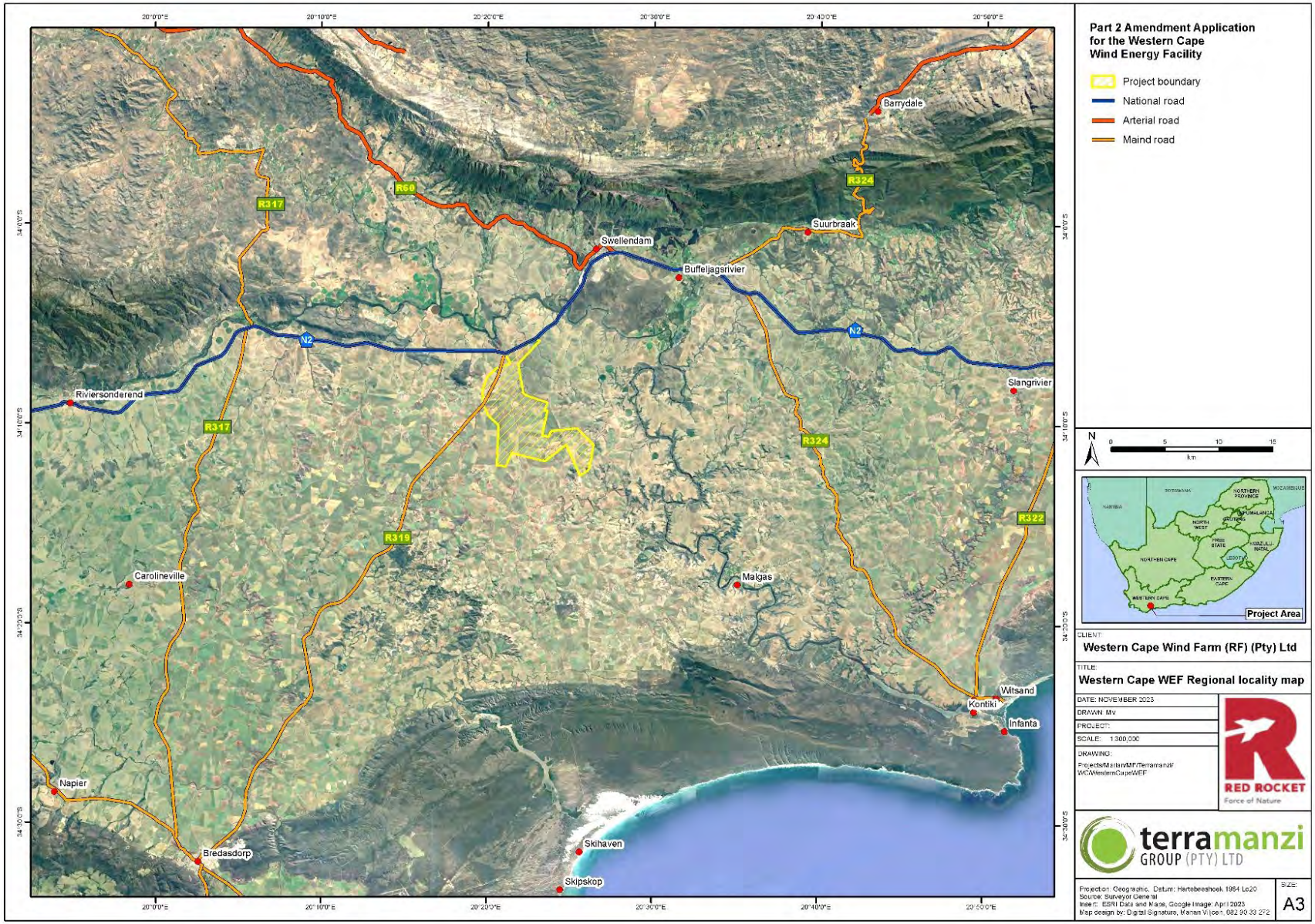


Figure 2: Regional Locality Map of the WCWEF and Substation.

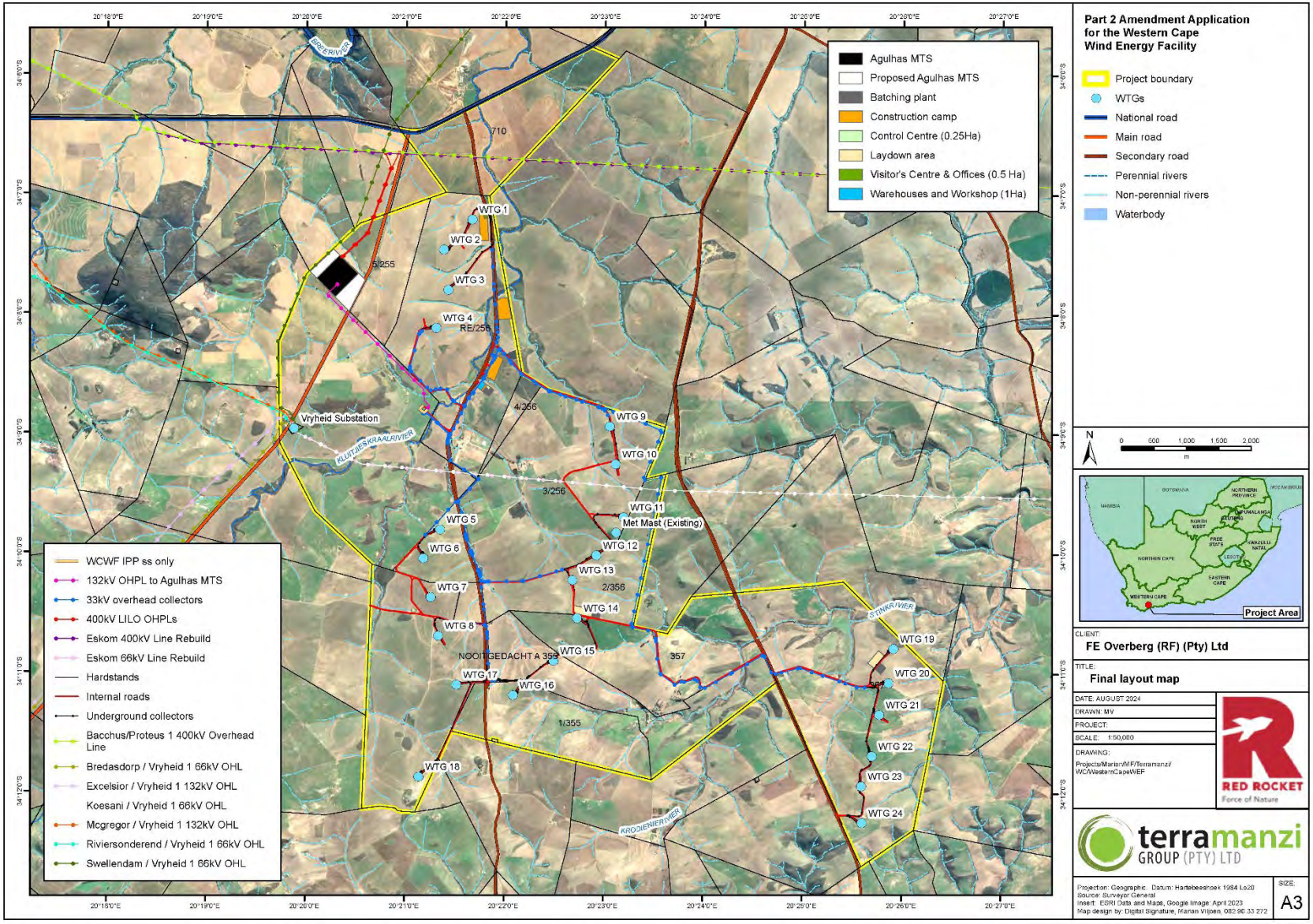


Figure 3: Final Layout Map (dated 02 August 2024) for the WCWEF.

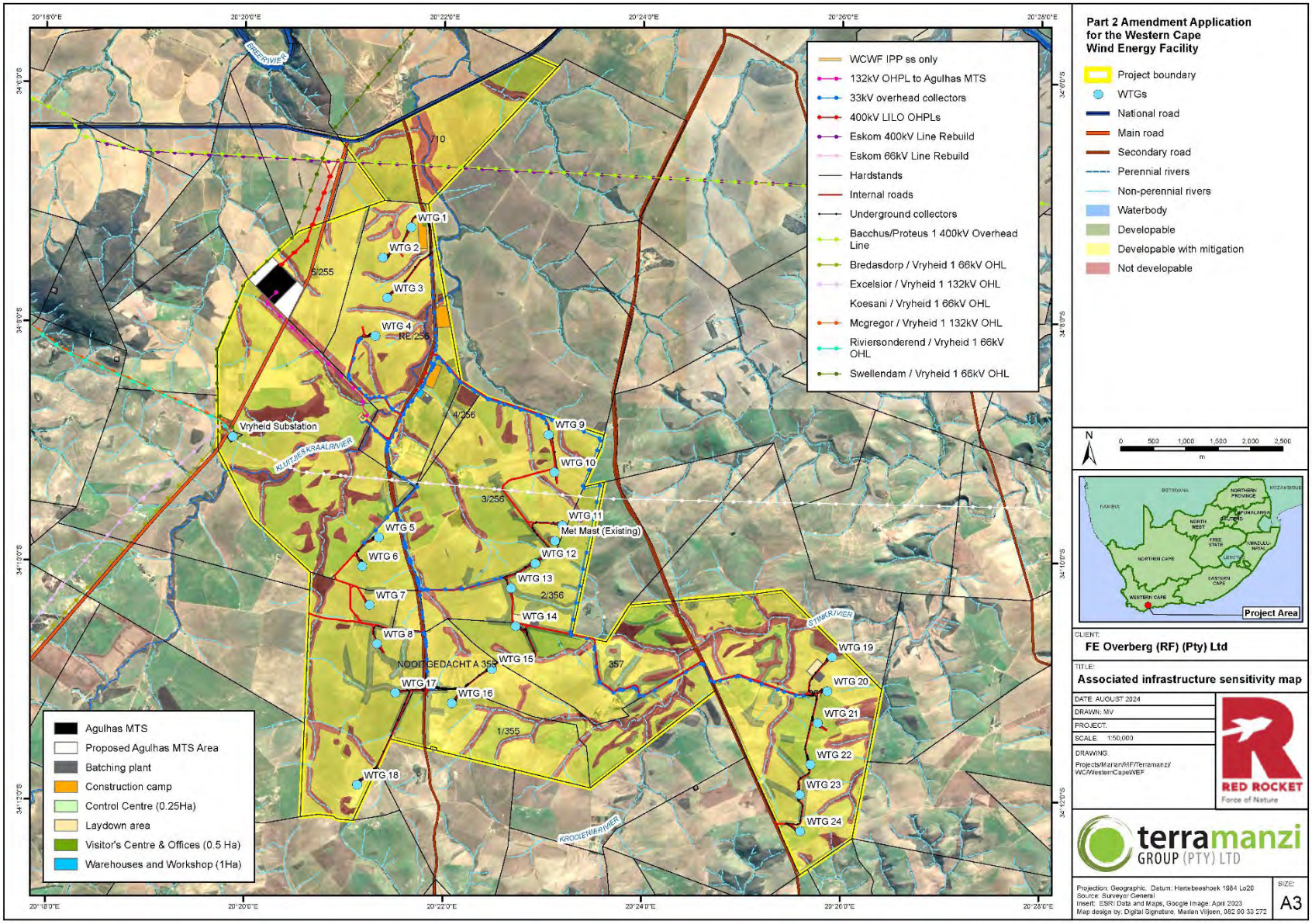


Figure 4: Associated Infrastructure Site sensitivity map for the WCWEF.

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

The DFFE Environmental Screening Tool was utilised for this project to initially identify potential environmental sensitivities. The environmental sensitivities were then assessed by specialists. The environmental sensitives confirmed by the specialists are presented as follows:

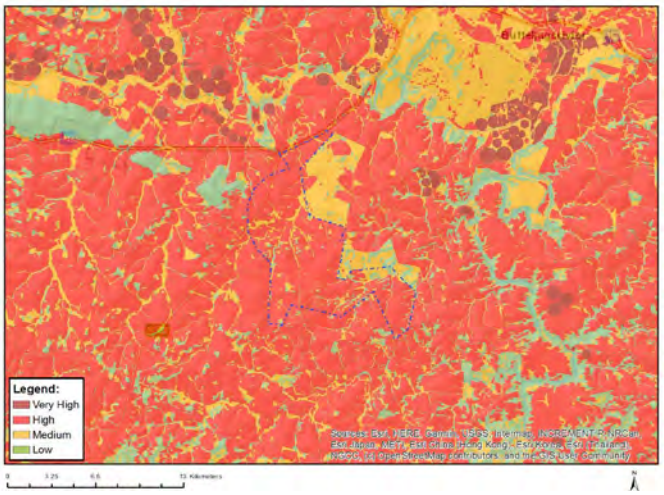


Figure 5: Agricultural DFFE Screening Tool Sensitivity Map.

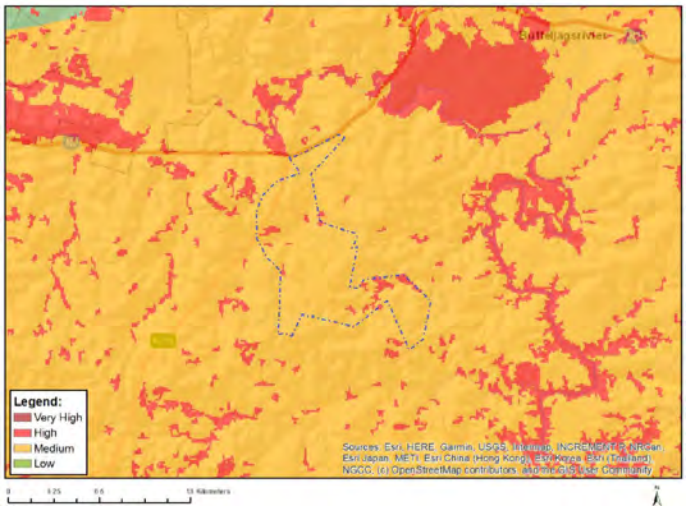


Figure 6: Animal Species DFFE Screening Tool Sensitivity Map.

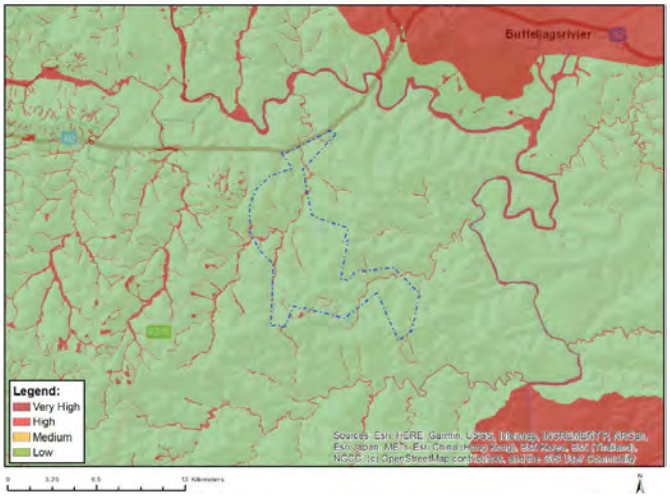


Figure 7: Aquatic Biodiversity DFFE Screening Tool Sensitivity Map.

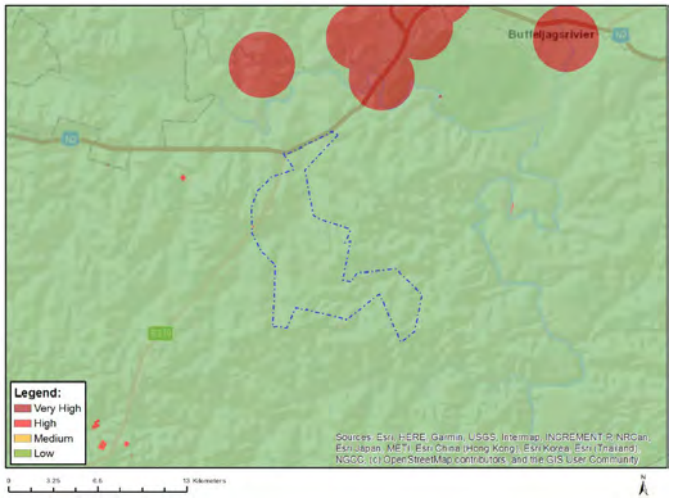


Figure 8: Archaeological DFFE Screening Tool Sensitivity Map.

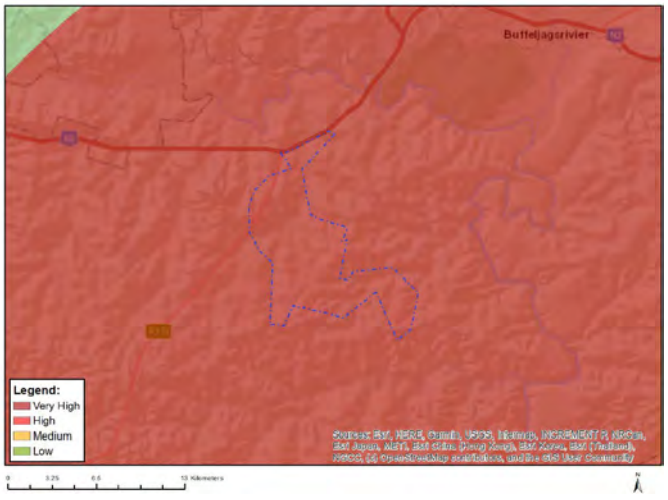


Figure 9: Avian DFFE Screening Tool Sensitivity Map.

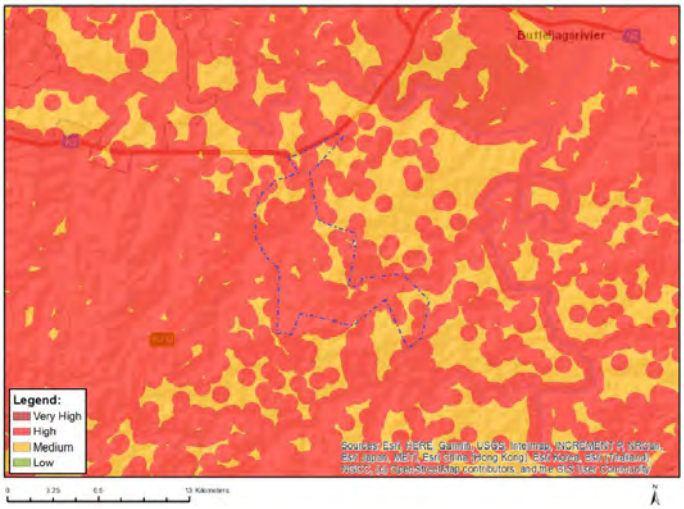


Figure 10: Bat theme DFFE Screening Tool Sensitivity Map.

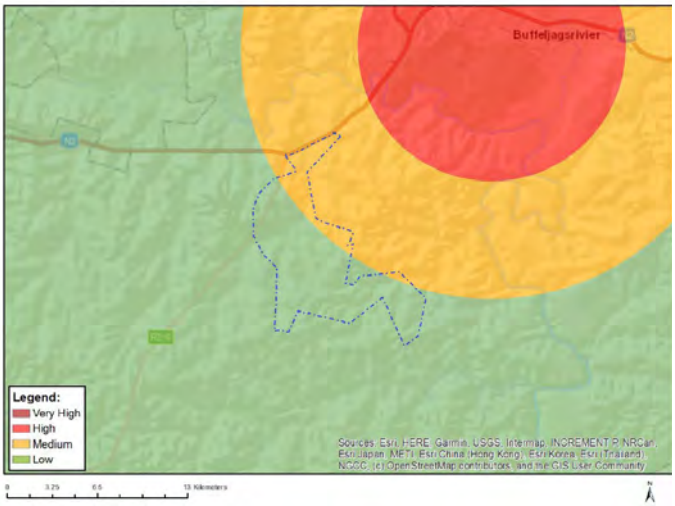


Figure 11: Civil Aviation (Wind) DFFE Screening Tool Sensitivity Map.

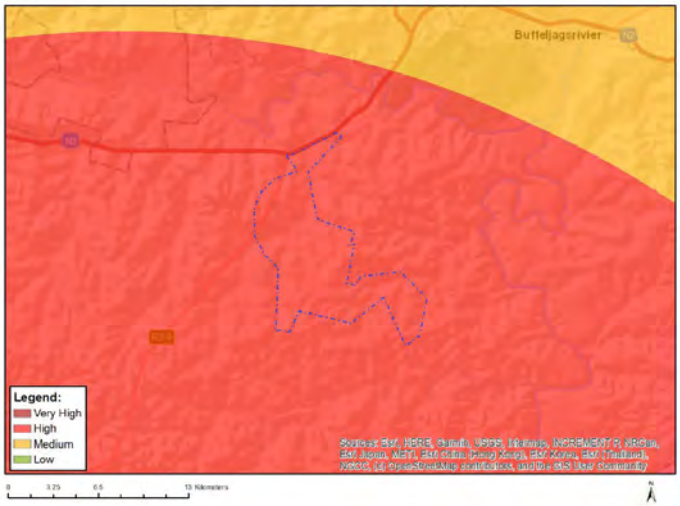


Figure 12: Defence Theme DFFE Screening Tool Sensitivity Map.

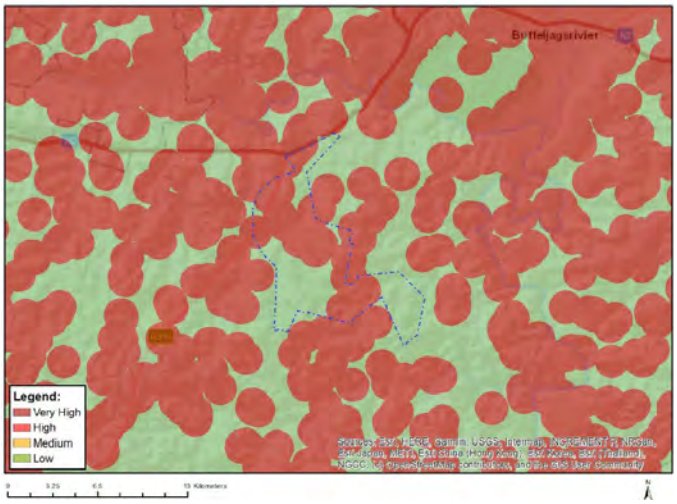


Figure 13: Flicker Theme DFFE Screening Tool Sensitivity Map.

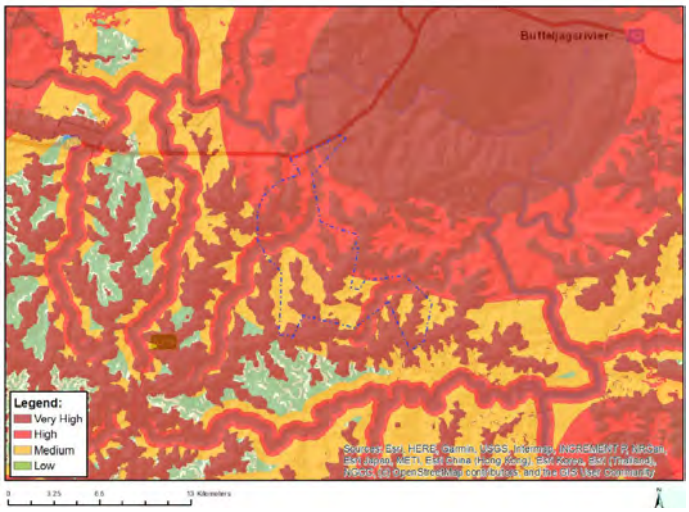


Figure 14: Landscape (Wind) Theme DFFE Screening Tool Sensitivity Map.

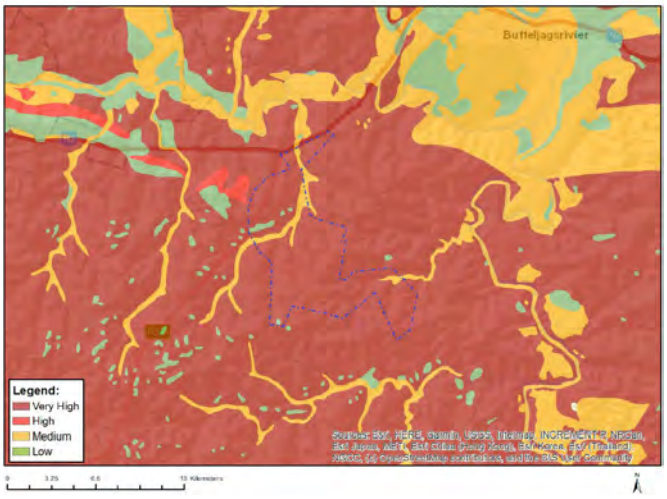


Figure 15: Palaeontological Theme DFFE Screening Tool Sensitivity Map.

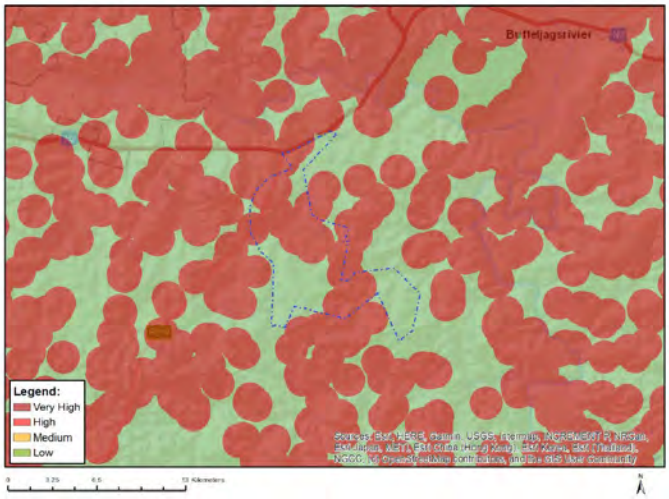


Figure 16: Noise Species DFFE Screening Tool Sensitivity Map.

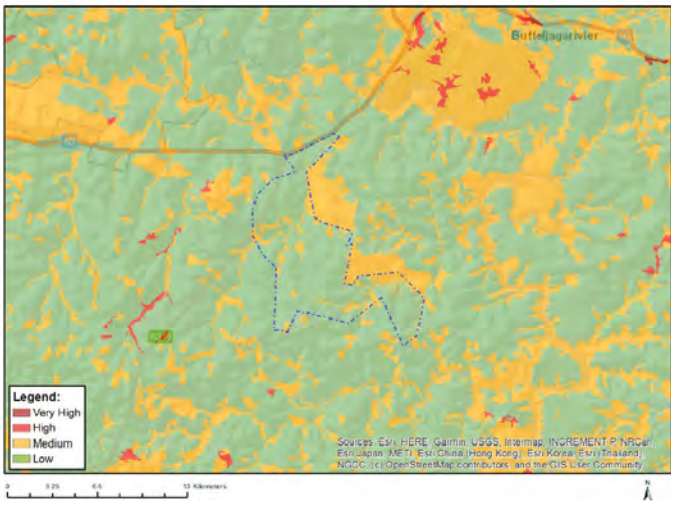


Figure 17: Plant Species DFFE Screening Tool Sensitivity Map.

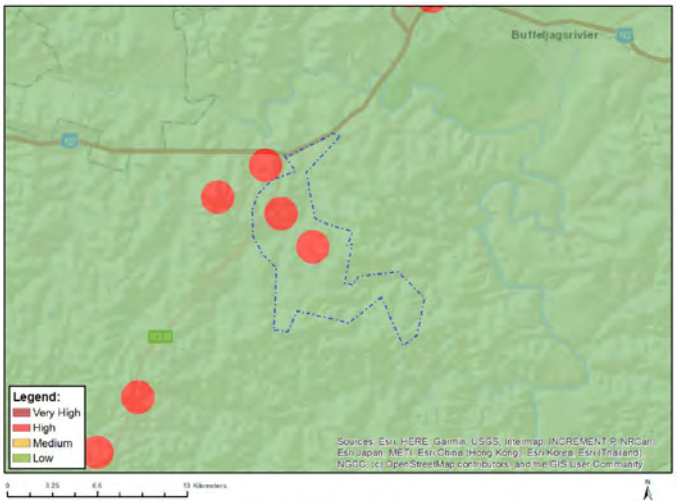


Figure 18: RFI (Wind) DFFE Screening Tool Sensitivity Map.

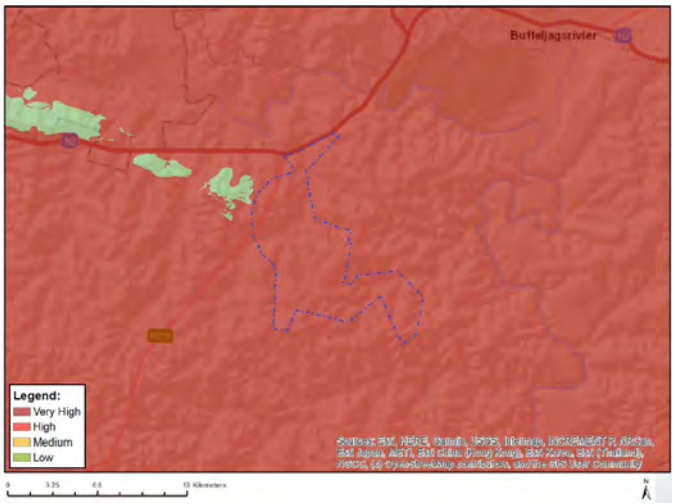


Figure 19: Terrestrial Biodiversity DFFE Screening Tool Sensitivity Map.

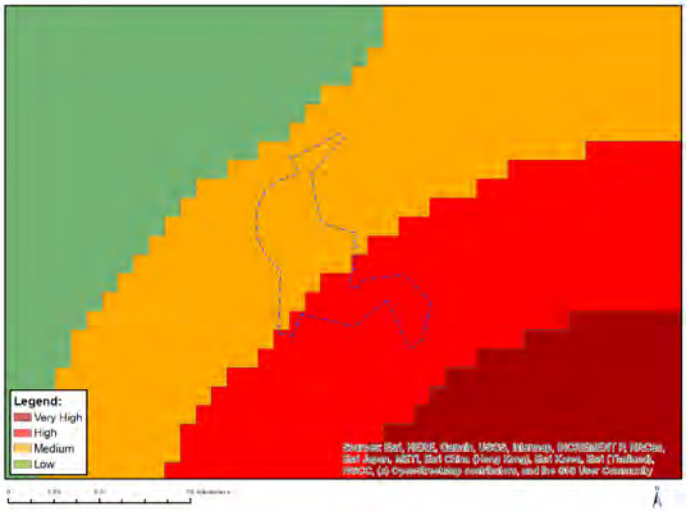
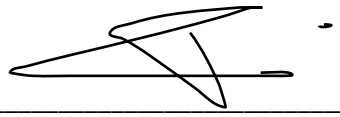


Figure 20: Vulture Species DFFE Screening Tool Sensitivity Map.

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA



_____

Date:

26th August 2024

_____

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

Please note: The Western Cape WEF IPP 132kV Substation does not contain any specific environmental sensitivities or attributes that require additional management to what is already presented in the Generic EMP and the following document which is submitted in support of the application for Environmental Authorisation for the development and operation of the proposed Western Cape Wind Energy Facility, of which the OHPL is a part of:

- Environmental Management Programme for the Proposed Development of the Western Cape Wind Energy Facility, in Swellendam Municipality, Western Cape Province.

This Generic EMP will be an appendix in the above Environmental Management Programme and has been updated to ensure compliance with Condition 16 of the EA (DFFE Ref: 14/12/16/3/3/1/2437 dated 12 December 2021) and include requested management plans as Appendix D. It is hereby submitted to the Competent Authority for decision.

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Residual Impact						
• Ensure that as much as possible of the planned infrastructure is confined to transformed land, or non-arable areas. • Ensure that use is made of existing roads, servitudes, etc where at all possible • Every care must be taken before, during and after the construction and future maintenance of the renewable energy structure, supporting infrastructure or access routes to protect the vegetation and veld condition against deterioration and destruction. • It is the responsibility of the owner of the renewable energy project to ensure that suitable soil conservation works is established on the site to limit or restrict the loss of soil. • No renewable energy structure, supporting infrastructure or access routes shall in any manner divert any run-off water from a water course to any other water course or obstruct the natural flow pattern of runoff water, except with the permission from DAFF. • All access routes, existing or newly	ECO, ESCO, Contractor, Engineer, Agricultural specialist	Pre, during and post construction	Planning and design phase	ECO, ESCO; Engineer; Agriculture Specialist	Throughout the project	EMPr on site

Impact management outcome: Management of Soil and Agriculture on site						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
constructed and utilised during the construction and/or maintenance of the renewable energy structures must be restore to its original state after completion of the establishment of the structures. • The installation of the underground power cables must not negatively impact on the resource base of the site. During the installation no soil conservation structure is to be disturbed, the soil texture must be restored, the work area should not be wider than 5 m, should not be directed through existing or future cultivated land nor impact negatively on existing farming infrastructure or any farming activity.						

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Impact associated with presence of construction workers - To avoid and or minimise the potential impact of	ECO, ESCO, Client	Maximising the number of locals employed during the construction	Pre-construction/	ECO, ESCO; Client	Duration of project	

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
construction workers on the local community. This can be achieved by maximising the number of locals employed during the construction phase and minimising the number of workers housed on the site. .		phase and minimising the number of workers housed on the site.	Construction / Operation			
Safety, poaching, stock theft and damage to farm infrastructure- The housing of construction workers on the site must be limited to security personnel, as far as possible.	ECO, ESCO, Health and Safety Officer		Pre-construction/ Construction / Operation	ECO, ESCO		
Increase risk of fires - Ensure that open fires on the site for cooking or heating are not allowed except in designated areas. Provide adequate firefighting equipment onsite. Provide fire-fighting training to selected construction staff. Approval from site management e.g. construction manager, ECO, safety officer must be gained before cooking in designated areas and the fire must be controlled and monitored by the party responsible for the activity (namely the Contractor Safety Officer/EO).	ECO, ESCO, Contractor, Health and Safety Officer, Fire department	Security Checkpoints & Inspections	Construction / Operation	ECO, ESCO; Health and Safety Officer	Daily	Toolbox talk records
Impact on farming activities - Minimise the footprint of the wind energy facility and the associated infrastructure. Rehabilitate disturbed areas on sections already constructed or on completion of the construction phase. Details of the rehabilitation programme are to be						

Impact management outcome: Management of Human impact						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
contained in the EMP.						

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Alter the layout plan to minimise encroachment into wetlands and river corridors as far as possible (following the recommended changes outlined in this freshwater ecology impact assessment report) and, where encroachment into wetlands of moderate conservation importance is unavoidable, rehabilitate degraded portions of these wetlands and/or degraded portions of nearby wetlands of high and moderate conservation importance that are of a similar type. This includes micrositing of the substation alternatives and battery energy storage system (BESS) alternatives which encroach into the 50 m buffer.	Project Manager, Engineer, ECO, ESCO, Freshwater Specialist.	Stormwater management plan to be implemented	Construction, Operation	ECO, ESCO, Engineer and Project Manager (where required)	During construction and operation	Stormwater management plan

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
No water must be taken from a water resource for any purpose without authorisation in terms of the National Water Act, 1998 (Act 36 of 1998) (NWA).	ECO, ESCO, Freshwater Specialist (where required), Engineer, Contractor		Construction	ECO, ESCO	Daily	Site Inspection and ECO Compliance report
Where the crossing of rivers by infrastructure such as roads and underground services is necessary, this must be located at existing road crossings as far as possible.	ECO, ESCO, Engineer, Freshwater specialist (if required)	Preconstruction walk through, continuous monitoring throughout construction	Construction; Operation	ECO, ESCO	Operation	Proof of implementation in detailed design and report from specialist.
Construction areas within 50 m of any freshwater ecosystem must have clearly defined, approved work areas / footprints, which must be clearly demarcated on site, to limit the risk of potential edge effect impacts. At crossing points of roads / powerlines, a construction right of way (ROW) of 5 m on either side of the crossing may be implemented and the reaches of the freshwater ecosystem up- and downstream of the construction ROW must be designated 'no-go' areas.	Project Manager, ECO, ESCO, Ecologist	The Final approved Layout must be implemented on site	Construction	ECO, ESCO,	Daily	Site Inspections and ECO Compliance Reports
As far as possible, underground cabling must be installed across freshwater ecosystems by means of directional drilling. If trenching cannot be avoided, the following measures must be taken: Trenching must, as far as practically	Project Manager, ECO, ESCO, Freshwater specialist, engineer	Preconstruction walk through, continuous monitoring throughout construction	Preconstruction	ESCO, ECO	Weekly and monthly monitoring during construction	Site Inspections, ECO Compliance Report

Impact management outcome: Management of Freshwater Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
possible, be undertaken during the dry, summer low-flow period, to contain the impacts from the construction phase.						

Impact management outcome: Avifaunal Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The substation should be inspected weekly by the operator, and if any electrocution mortality is recorded, it should be reported to the avifaunal specialist. If the mortality levels exceed thresholds determined by the avifaunal specialist in consultation with BirdLife South Africa, reactive mitigation in the form of insulation or perch deterrents must be implemented.	ECO, ESCO, Project Manager	Weekly walk throughs	Construction	ECO, ESCO	Weekly	Site Inspections and ECO Compliance reports
If bats colonise Wind Farm infrastructure, a suitably qualified bat specialist must be consulted before any work is undertaken	ECO, ESCO, Project Manager	Weekly walk throughs	Construction	ECO, ESCO	Weekly	Site Inspections and ECO Compliance reports

Impact management outcome: Avifaunal Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
on that infrastructure or attempting to remove bats.						

Impact management outcome: Heritage and Paleontological Impact Management						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
The Chance Find Protocol in the PIA (Groenewald, 2022) designed to record all unexpected fossils associated with the geological formations on site must: • be implemented during the lifetime of the WEF, and • be included as part of the EMPr for this project.	Project Manager and Construction Manager ECO	Follow the 'Chance Find Protocol' (Appendix B – HIA Specialist Report for guidance).	Construction	ECO, ESCO, Palaeontological Specialist	When a Chance find occurs on site and a potential heritage resources identified	Chance Find Procedure report by the Palaeontological Specialist, ECO compliance report

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

APPENDIX 2: CV of the EAP