

BRANDVALLEY WIND FARM (RF) (PTY) LTD

BRANDVALLEY WIND ENERGY FACILITY

PART 2 AMENDMENT OF EXISTING
ENVIRONMENTAL AUTHORISATION: DEA
14/12/16/3/3/1/900

FINAL AMENDMENT REPORT

28 JUNE 2022

FINAL



1 INTRODUCTION

1.1 PURPOSE OF THE REPORT

Brandvalley Wind Farm (RF) (Pty) Ltd (Brandvalley) proposes to develop the 140 megawatt (MW) Brandvalley Wind Energy Facility (WEF), located near Laingsburg, in the Western Cape Province, South Africa. The proposed project formed part of the Fifth Bid Window submissions under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). **The Brandvalley WEF has been confirmed a Round 5 Preferred Bidder Project and is a confirmed Strategic Infrastructure Project in terms of the Infrastructure Development Act 9 (Act No.23 of 2014).**

In 2016, Brandvalley Wind Farm (Pty) Ltd (Brandvalley) appointed EOH Coastal and Environmental Services (Pty) Ltd (EOH) to facilitate the Scoping and Environmental Impact Assessment (S&EIA) process for the construction and operation of the 140MW Brandvalley WEF. In November 2016, the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment – DFFE) issued the Environmental Authorisation (EA) (DEA Ref: 14/12/16/3/3/1/900). The EA authorised 58 wind turbines of a maximum generating capacity of 140MW in total, with a hub height of 120m and the rotor diameter of 140m.

Appeals on the EA were received in December 2016 and January 2017, however, in a decision letter dated 28 July 2017 the appeals were dismissed and the issued EA upheld

Subsequently, the EA was amended on 14 February 2019 (DEA Ref: 14/12/16/3/3/2/900/AM1). The amendments included:

- Administrative changes with regards to the contact details for the Holder of EA
- Changes to the technical specifications of the turbines, including:
 - Increasing the Rotor diameter to up to 160m
 - Increasing the Hub height from ground level to up to 125m
 - Increasing the Generation capacity per Turbine to up to 5.5MW
- Amendment of the wording for the technical specifications of the wind measuring mast; and.
- The micro-siting of a single turbine (number 58) within the development layout.

The original EA was due to expire on 23 November 2021 and thus a Part 1 Amendment application was submitted to the DFFE on 14 September 2021, to extend the validity period for an additional 5-years. This was approved by the DFFE on the 11 October 2021 and amended EA with the extended validity period was released for the legislated 20-day notification of appeal period. During this appeal notification period, KarooPlan on behalf of the following appellants:

- Stephan Pienaar, Farm Aasvoegelbos, Laingsburg
- Steve Swanepoel, Farms Paalfontein & Keurkloof, Laingsburg
- Frans Hattingh, Farm De Rante, Laingsburg
- Gail Louw, Keurkloof Farm and Guest House, Laingsburg

The Appellants appealed on the following grounds:

- No approved EMPr in the original Environmental Authorization
- The sensitivity of the receiving environment has not been adequately considered: Cumulative impacts of surrounding activities (recently constructed wind turbines) on wildlife and farming communities.

A responding statement was issued by Richard Summer Inc, on behalf of the IPP, Brandvalley Wind farm (Pty) Ltd. The Appeal was dismissed by the DFFE on 04 February 2022 and the amended EA was therefore withheld.

Outside of the Appeal, Brandvalley Wind Farm, through their Legal Representative, engaged with the Appellants so as to and better understand their concerns, and to advise how these concerns would be avoided or mitigated. The Appellants representative, KarooPlan, advised that they were yet to be provided with an opportunity to review the Final EMPr, and its mitigations and plans pertaining to their concerns. Further, they voiced their dissatisfaction

regarding the cumulative visual impact of the wind turbines in the area. Through this AM Report and the appended Final EMPr, these concerns have been taken into account and addressed as best possible, and the visual specialist confirms that the cumulative impact remains the same as per the previous amendments and EIA.

There have been numerous advances in wind turbine technology since the authorisation of the Brandvalley WEF. As such Brandvalley wishes to again amend the EA to update the turbine specification and overall capacity of the facility as well as some respective administrative changes. This Draft Amendment Report (DAR) documents the process and findings of the Brandvalley's application for amendment of the EA.

Due to the fact that the amendments result in a change of scope, a Part 2 Amendment Process in terms of Regulation 31 of the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) is applicable and required to be followed.

2 PROJECT DESCRIPTION

2.1 EIA PROCESS HISTORY

In 2016, Brandvalley Wind Farm (Pty) Ltd (Brandvalley) appointed EOH Coastal and Environmental Services (Pty) Ltd (EOH) to facilitate the Scoping and Environmental Impact Assessment (S&EIA) process for the construction and operation of the 140MW Brandvalley WEF. In November 2016, the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment – DFFE) issued the Environmental Authorisation (EA) (DEA Ref: 14/12/16/3/3/1/900). The EA authorised 58 wind turbines of a maximum generating capacity of 140MW in total, with a hub height of 120m and the rotor diameter of 140m.

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- Administrative changes with regards to the contact details for the Holder of EA
- Changes to the technical specifications of the turbines, including:
 - Increasing the Rotor diameter to up to 160m
 - Increasing the Hub height from ground level to up to 125m
 - Increasing the Generation capacity per Turbine to up to 5.5MW
- Amendment of the wording for the technical specifications of the wind measuring mast; and.
- The micro-siting of a single turbine (number 58) within the development layout).

An appeal was again received on 07 March 2019, however, this appeal was dismissed in a decision document dated 07 August 2019, and the issued EA amendment upheld.

As of the February 2019 EA amendment the following is authorised for the Brandvalley WEF:

- 58 wind turbines with a maximum generating capacity of 140MW in total;
- Concrete foundations approximately 25m in diameter and 4m deep per turbine;
- 690V/33kV transformer of 10m x 10m per hard standing area per turbine;
- Laydown areas of approximately 70m x 50m per turbine (total 20.3ha);
- Construction camp of 10ha and onsite batching plant of 1ha;
- 200m access road corridor to accommodate slight shift in alignments that are fully informed by the final detailed design of access road Alternative 1 and internal road network, up to 9m in width;
- Buildings;
- Overhead 33kV powerlines and underground cabling;
- Low voltage yard of the 33/132kV onsite substation Position Number 4. The total footprint of the 33/132kV onsite substation (including both high voltage (Eskom yard) and low voltage yards (IPP yard)) will be up to 200m x 200m;
- Lighting system;
- Fencing of the site construction camp; and
- 4x125 m tall wind measuring lattice masts strategically placed within the wind farm development footprint to collect data on wind conditions during the operational phase (final height shall be the same as the hub height).

Subsequently, a further amendment was issued in October 2021 (Ref No: 14/12/16/3/3/2/900/AM2) with regards to the extension of the EA validity period. During this appeal notification KarooPlan on behalf of the following appellants:

- Stephan Pienaar, Farm Aasvoegelbos, Laingsburg

- Steve Swanepoel, Farms Paalfontein & Keurkloof, Laingsburg
- Frans Hattingh, Farm De Rante, Laingsburg
- Gail Louw, Keurkloof Farm and Guest House, Laingsburg

The Appellants appealed on the following grounds:

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A responding statement was issued by Richard Summer Inc, on behalf of the IPP, Brandvalley Wind farm (Pty) Ltd. The Appeal was dismissed by the DFFE on 04 February 2022 and the amended EA was therefore withheld.

Outside of the Appeal, Brandvalley Wind Farm, through their Legal Representative, engaged with the Appellants so as to and better understand their concerns, and to advise how these concerns would be avoided or mitigated. The Appellants representative, KarooPlan, advised that they were yet to be provided with an opportunity to review the Final EMPr, and its mitigations and plans pertaining to their concerns. Further, they voiced their dissatisfaction regarding the cumulative visual impact of the wind turbines in the area. Through this AM Report and the appended Final EMPr, these concerns have been taken into account and addressed as best possible, and the visual specialist confirms that the cumulative impact remains the same as per the previous amendments and EIA.

The authorised infrastructure is outlined in **Table 2-1**.

Table 2-1: Authorised infrastructure in terms of the February 2019 EA

COMPONENT	DESCRIPTION / DIMENSIONS
Location of the site	~ 30km north of the town of Matjiesfontein along the R354
Farm Names and SG Codes	<ul style="list-style-type: none"> – The Remainder of Barendskraal 76: (00430000000007600000) – Portion 1 of Barendskraal 76: (00430000000007600001) – The Remainder of Brandvalley 75: (00430000000007500000) – Portion 1 of Brandvalley 75: (00430000000007500001) – The Remainder of Fortuin 74: (00430000000007400000) – Portion 3 Fortuin 74: (00430000000007400003) – The Remainder of Kabeltouw 160: (C01900000000016000000) – The Remainder of Muishond Rivier 161: (001900000000016100000) – Portion 1 of Muishond Rivier161: (001900000000016100001) – Portion 1 of Fortuin 74 (Cu Mure): (00430000000007400001) – The Farm Rietfontein 197: (007200000000019700000)
Site access	<ul style="list-style-type: none"> – Access road alternative 1 (including internal access roads) to connect the facility with the R354 – 200m access road corridor to accommodate slight shift in alignments that are fully informed by the final detailed design
Export capacity	Up to 140MW
Proposed technology	Wind turbines
Number of Turbines	58
Foundations	Concrete foundations approximately 25m in diameter and 4m deep per turbine
Hub height from ground level	Up to 125m

COMPONENT	DESCRIPTION / DIMENSIONS
Rotor diameter	Up to 160m
Width and length of internal roads	<ul style="list-style-type: none"> – Internal roads width: Up to 9m wide – Internal roads length: Approximately 92km of which approximately 34km are existing roads that would be upgraded
Construction Camp and Laydown Areas	<ul style="list-style-type: none"> – Construction camp of 10ha and onsite batching plant of 1ha – Laydown areas of approximately 70m x 50m per turbine (total 20.3ha)
Electricity infrastructure	<ul style="list-style-type: none"> – 690V133/kV transformer of 10m x 10m per hard standing area per turbine – Overhead 33kV powerlines and underground cabling; – - Low voltage yard of the 33/132kV onsite substation Position Number 4. The total footprint of the 33/132kV onsite substation (including both high voltage (Eskom yard) and low voltage yards (IPP yard)) will be up to 200m x 200m;
General infrastructure	<ul style="list-style-type: none"> – Buildings – Lighting system; – Fencing of the site construction camp; and – 4 x 120m tall wind measuring lattice masts strategically placed within the wind farm development footprint to collect data on wind conditions during the operational phase.

2.2 PROJECT AREA

The Brandvalley WEF falls within the Laingsburg, Witzenburg, and Karoo Hoogland Local Municipalities which are located in the Central Karoo, Winelands and Namakwa District Municipalities respectively. The closest town within the Western Cape Province is Matjiesfontein, situated approximately 30km south of the project area (**Figure 2-1**). Laingsburg is a further 30km east of Matjiesfontein, along the N1 national road in the Western Cape Province. The R354 is the main arterial road providing access to the project area, where there are a number of existing local, untarred roads providing access within the project area.

The Brandvalley WEF is currently authorised over 11 properties described in **Table 2-2** below. These land portions, collectively referred to as the project area for the Brandvalley WEF, are currently used for animal husbandry, game farming and agriculture, including grazing of sheep. It should be noted that some of the properties for the Brandvalley WEF overlap with the Rietkloof WEF properties (**Figure 2-2**). The project area can be accessed via the R354 that connects to the N1 between Matjiesfontein and Laingsburg.

Table 2-2: Farm portions on which the Brandvalley WEF is located

FARM NAME AND NUMBER	21 DIGIT SG CODE	MUNICIPALITY/PROVINCE	FARM SIZE (HA)
The Remainder of Barendskraal 76	C04300000000007600000	Laingsburg LM/ Central Karoo DM/ Western Cape	1,523.7
Portion 1 of Barendskraal 76	C04300000000007600001	Laingsburg LM / Central Karoo DM / Western Cape	2,828.6
The Remainder of Brandvalley 75	C04300000000007500000	Laingsburg LM / Central Karoo DM / Western Cape	1,981.9

Portion 1 of Brandvalley 75	C0430000000007500001	Laingsburg LM / Central Karoo DM / Western Cape	56.3
The Remainder of Fortuin 74	C0430000000007400000	Laingsburg LM / Central Karoo DM / Western Cape	2,454.98
Portion 3 Fortuin 74	C0430000000007400003	Laingsburg LM / Central Karoo DM / Western Cape	1,868.4
The Remainder of Kabeltouw 160	C0190000000001600000	Witzenberg (Ceres) LM/ Cape Winelands DM/ Western Cape	1,082.8
The Remainder of Muishond Rivier 161	C01900000000016100000	Witzenberg (Ceres) LM/ Cape Winelands DM/ Western Cape	4,051.8
Portion 1 of Muishond Rivier 161	C01900000000016100001	Witzenberg (Ceres) LM/ Cape Winelands DM/ Western Cape	3391
Portion 1 of Fortuin 74 (Ou Mure)	C0430000000007400001	Laingsburg LM / Central Karoo DM / Western Cape	408.9
The Farm Rietfontein 197	C07200000000019700000	Karoo Hoogland LM/ Namakwa DM/ Northern Cape	5,873.6
Total hectares			25,521.98

8 ENVIRONMENTAL IMPACT STATEMENT

This FAR is submitted in support of the application for amendment of the EA issued to Brandvalley for the operation of the 140MW WEF near Matjiesfontein in the Western Cape. Due to the fact that the proposed amendments constitute a change of scope, a Part 2 Amendment Process in terms of Regulation 31 of the EIA Regulations (2014), as amended is required.

WSP were appointed to undertake the amendment process in terms of Regulation 31 and 32 of the EIA Regulations (2014), as amended. In addition, various specialists were appointed to assess the proposed amendments to the EA.

The advantages and disadvantages for the proposed amendments are outlined in the table below. It can be noted that no disadvantages have been identified.

ASPECT TO BE AMENDED	PROPOSED AMENDMENT	ADVANTAGES/ DISADVANTAGES
Technical Aspects		
Number of Turbines	Up to 32 wind turbines with a maximum generating capacity of 140MW in total of up to 7MW capacity each	Wind turbine generators are constantly under development to increase the potential energy output per wind turbine. These amendments are proposed in order to increase the efficiency of the facility and consequently the economic competitiveness thereof, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large.
Generation capacity per turbine	Up to 7MW	The increase in generation capacity per turbine to a maximum of up to 7MW is as a result of the advances in turbine technology. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of generation capacity per turbine. The benefit of increasing the generation capacity of each turbine results in the need to utilise fewer turbine positions than original authorised.
Area Occupied by Each Turbine and hard standing area	laydown area of approximately 0.45ha per turbine	The increase in generation capacity per turbine to a maximum of up to 7MW will result in a reduced number of turbine positions being utilised on site. The exact orientation, position and dimensions of the hardstands will be subject to minor change pending the final selection of the TSA. The increased maximum allowable size of the hard standing will allow for these changes should they be required.
Turbine Hub Height	up to 125m	Wind shear refers to the variation in wind speed over vertical distances. Installing wind turbine generators with a higher hub height will increase the overall performance of the WEF. This amendment will increase the economic competitiveness of the WEF, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large.

ASPECT TO BE AMENDED

PROPOSED AMENDMENT

ADVANTAGES/ DISADVANTAGES

		As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of the turbine hub height.
Rotor Diameter	up to 180m	<p>The power output of a wind turbine is directly related to the swept area of the blades. The larger the diameter of swept area / rotor diameter of the blades, the more power it is capable of extracting from the wind. By potentially installing wind turbine generators with a larger rotor diameter, it will increase the energy output per turbine. This will result in increasing the overall performance of the WEF. This amendment will increase the economic competitiveness of the WEF, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large.</p> <p>As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of the rotor diameter</p>
Width of Internal Roads	Internal Roads width: up to 12m wide	<p>The final layout makes provision for roads with a maximum width of between 9 and 12m to ensure suitable access to site for all required vehicles and equipment.</p> <p>As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of increasing the maximum allowable road width.</p>
Construction Camp	The existing Roggeveld Wind Project construction camp will be retained for use by Brandvalley.	The construction camp has been shifted to the existing construction camp previously utilised by the Roggeveld WEF. The new location has been included in the final layout.
Construction ordinates	Co- 32°57'20.14"S 20°30'50.60"E	<p>The location of construction camp, was identified by considering the following aspects:</p> <ul style="list-style-type: none"> — Landowner preference and support; — Ease of access to R354; — Selecting a flat area requiring little to no blasting; — An area where the site is currently disturbed, thus limiting the need for additional vegetation clearance — The approved construction camp traversed a watercourse and therefore the relocation of the construction camp to the existing Roggeveld site will eliminate the potential negative impact on this watercourse. <p>As confirmed by the EAP, there are no disadvantages associated with the amendment of the EA in terms of moving the construction camp.</p>
Administrative Aspects		
Amend the name of the Holder of the EA	Brandvalley Wind Farm (RF) (Pty) Ltd	We request to amend the name of the Holder of the EA. This amendment request is administrative in nature and therefore no disadvantages are foreseen.

All of the specialists concluded that the proposed amendments are acceptable with limited additional mitigation required. Where specialists made recommendations these have been taken into account and accommodated where practically possible in the final layout and the final EMPr.

Additional mitigations as a result of the amendments and as a result of the specialist walkdowns of the Final layout have been included in the updated EMPr.

The updated EMPr is appended to this report (**Appendix O**). The updated EMPr, appended to this report **is the final EMPs which is being submitted to DFFE for approval in line with Condition 16 of the EA.**

It can be confirmed that public participation was undertaken in terms of Chapter 6 of the NEMA EIA Regulations 2014, as amended.

This report was provided to potentially interested and affected parties for a 30-day review period from **19 May 2022** to **21 June 2022**. All comments received were used to update the FAR which will be submitted to the competent authority, the DFFE. The DFFE is tasked with making a decision on the amendment application.

Based on the findings of the specialists, the EAP recommends that DFFE amends the EA as follows:

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Technical Aspects			
Number of Turbines	58 wind turbines with a maximum generating capacity of 140MW in total	Up to 32 wind turbines with a maximum generating capacity of 140MW in total of up to 7MW capacity each	<ul style="list-style-type: none"> • Page 7 of EA (page 19 in full document) <ul style="list-style-type: none"> ○ First bullet of the list outlining the infrastructure associated with the facility
Generation capacity per turbine	1 – 5.5 MW	Up to 7MW	<ul style="list-style-type: none"> • Page 2 and the first Amendment
Area Occupied by Each Turbine and hard standing area	Laydown areas of approximately 70m x 50m per turbine (total 20.3ha);	laydown area of approximately 0.45ha per turbine	<ul style="list-style-type: none"> • Page 7 of EA (page 9 in full document) <ul style="list-style-type: none"> ○ Fourth bullet of the list outlining the infrastructure associated with the facility
Turbine Hub Height	120m	up to 125m	<ul style="list-style-type: none"> • Page 8 of EA (page 11 in full document) <ul style="list-style-type: none"> ○ Row 7 of the table outlining the technical details of the proposed facility
Rotor Diameter	140m	up to 180m	<ul style="list-style-type: none"> • Page 8 of EA (page 11 in full document) <ul style="list-style-type: none"> ○ Row 8 of the table outlining the technical details of the proposed facility
Width of Internal Roads	Internal Roads width: up to 9m wide	Internal Roads width: up to 12m wide	<ul style="list-style-type: none"> • Page 9 of EA (page 11 in full document) <ul style="list-style-type: none"> ○ Row 9 of the table outlining the technical details of the proposed facility
Construction Camp	Construction camp of 10ha and onsite batching plant of 1ha	The existing Roggeveld Wind Project construction camp will be retained for use by Brandvalley.	<ul style="list-style-type: none"> • Page 8 of EA (page 10 in full document) <ul style="list-style-type: none"> ○ Fifth bullet of the list outlining the infrastructure associated with the facility

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Construction Co-ordinates	32°57'09.78"S 20°32'41.52"E	32°57'20.14"S 20°30'50.60"E	<ul style="list-style-type: none"> • Page 7 of EA (page 9 in full document) <ul style="list-style-type: none"> ○ Sixth row of the table outlining the facility co-ordinates
Administrative Aspects			
Amend the Holder of the EA	Brandvalley Wind Farm (Pty) Ltd	Brandvalley Wind Farm (RF) (Pty) Ltd	<ul style="list-style-type: none"> • Page 1 – Contact Details • Page 2 and 3 of EA (Page 4 and 5 of full document) – Contact Details

8.1 EA AUTHORISATION PERIOD

The amended EA is required for a period of 5 years from the date of issuance of the EA to the commencement of the authorised activities on site. Thereafter, construction (including rehabilitation) must be completed within 5 years.