Earraghail Renewable Energy Development

EIA Scoping Report

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www.scottishpowerrenewables.com

SCOTTISHPOWER RENEWABLES

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1 Introduction

1.1 Overview

1. ScottishPower Renewables UK Ltd (SPR) intends to apply to the Scottish Government Energy and Consents Unit (ECU) for Section 36 consent under the Electricity Act 1989 ('the Act') for the development of Earraghail Renewable Energy Development (the 'proposed Development') located in the northern part of the Kintyre peninsula, approximately 1.2 km south west of Tarbert and 1.1 km north of Skipness (the "Site"). In addition, a request will also be made by SPR that planning permission is deemed to be granted under Section 57 of the Town and Country Planning (Scotland) Act 1997, as amended.

2. The application boundary of the proposed Development is shown on Figure 1.1, with an area of approximately 2430 ha. The application boundary encompasses the proposed wind turbines and associated infrastructure as part of the proposed Development.

3. The proposed Development is anticipated to comprise up to 13 wind turbines with tip heights of up to 200 m with associated infrastructure. The deployment of a Battery Energy Storage System (BESS) within the Site is also being proposed, and the potential for solar photovoltaic (PV) generation is being explored. Both of these ancillary renewable technologies will be explained further in Chapter 2: Project and Site Description. The predicted electricity generation of each turbine is up to 6 megawatts (MW). The total installed capacity of the proposed Development is expected to exceed 50 MW, which will require consent from the ECU. Argyll and Bute Council will be a consultation body in the consenting process.

4. The UK government is committed to ensuring that current coal fired power generation is phased out by 2024, meaning that 3% of the UK's energy generation needs to be replaced. ScottishPower has become the first major UK utility to completely switch from fossil fuels to renewables after selling its remaining gas and hydro power stations to Drax in 2018. It has also closed all of its coal fired power stations. As a result, the company is now freed up to invest more in UK renewable sources, such as solar, wind, tidal and wave energy. ScottishPower plans to invest £5.2 billion by 2022 which will double the company's renewable capacity.

5. The UK and Scotland's current climate change ambitions are amongst the highest in Europe. The UK government has pledged to reach net zero greenhouse gas emissions by 2050 and the Scottish government has set the same target by 2045. Scotland's Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 sets out plans for a 75% reduction in emissions by 2030, which is being supported by the Scottish Energy Strategy's[1] target of 50% of all energy (including transport, heat and electricity) being supplied from renewables by 2030. The Energy Strategy in combination with the Scottish Climate Change Plan (2018) forms the strategical framework for delivering the emissions reduction targets outlined in the Climate Change Act. The Scottish Climate Change Plan is currently being updated to reflect the new binding targets put forward in the Climate Change Act. The proposed Development, which proposes to pioneer both established and emerging renewable technologies, and provide a fully integrated renewable energy development solution, is a direct response to meeting this need. The UK government's official climate advisers, the Committee on Climate Change (CCC) has said the UK will need to increase the onshore wind capacity by at least 1 gigawatt (GW) per year to reach net zero by 2050[2]. With an onsite BESS, the project will be able to regulate output and provide clean power to people's homes when they need it the most. This will be a state-of-the-art development for Argyll and Bute.

6. SPR is committed to developing renewable energy responsibly. SPR strive to be good neighbours in all aspects of their work and are committed to Argyll and Bute and the surrounding area, and to maximising the opportunities for local communities to benefit from their projects. SPR aims to find the best balance of constraints; to confirm that no impact resulting from their development is unacceptable; and to demonstrate that the benefits of their projects are of real value, wide reaching and shared with the community.

7. To date, SPR's operational windfarms have contributed more than £32 million of support towards community initiatives across the UK, with their existing local windfarms (Cruach Mhor, Clachan Flats and Beinn an Tuirc) contributing over £1.5 million of support to Argyll and Bute communities. The approach adopted by SPR is to empower local communities to decide how they want the community benefit to be spent. This has resulted in a wide diversity of projects being delivered, including

[1] Scottish Government (May 2019) Annual energy statement 2019
[2] Committee on Climate Change (May 2019) Net Zero Technical Report

the improvement of local amenities such as village halls, cinemas and local youth clubs; supporting work experience places; educational workshops and much more.

8. Since 2015, 40% of the annual community benefit fund from SPR's Beinn an Tuirc 2 Windfarm has contributed towards two ALIenergy Education Officers. The Education Officers deliver a programme of 'STEM' (science, technology, engineering and maths) activities to primary and secondary school pupils across Argyll and Bute to raise awareness about further education and careers in these fields. SPR, in collaboration with Argyll and Bute Council, has currently agreed to fund these roles until March 2021.

9. SPR has a long history of working with local contractors on the Kintyre Peninsula and would seek to continue to do so during the construction and operation of the proposed Development by arranging 'Meet the Developer' days to encourage the engagement of local supply chains. Beinn an Tuirc Windfarm was completed in 2001, and has successfully operated since that time, consistently generating up to 30 MW of cleaner, greener energy per year. The construction of Beinn an Tuirc Windfarm Phase 2 increased the total number of turbines onsite to 64, and the total generating capacity of the combined wind development up to 73.4 MW. Beinn an Tuirc Windfarm Phase 3 was consented in February 2017 and will increase the operating capacity by up to a further 38 MW.

10. SPR also recognises the major benefits of local investment. Previously, on the Beinn an Tuirc Windfarm Phase 2 project, SPR used CS Wind (formerly Wind Towers (Scotland) Ltd), based in Campbeltown, to supply wind turbine components. SPR and CS Wind have formed a good working relationship and the preference would be to agree a similar arrangement for the proposed Development if practicable. Other options will be considered as a matter of contingency.

11. It is expected that the proposed Development would establish a community benefit arrangement with local communities. This package of benefits is likely to include a community benefit fund as well as an option for community investment in line with existing guidance[3]. As an active member of Argyll and Bute Renewable Alliance (ABRA), SPR is working with Argyll and Bute Council and local stakeholders to ensure that renewable energy boosts the local economy and creates opportunities for local people.

12. SPR acknowledge that there is uncertainty regarding the evolving Covid-19 situation and the impact that it might have on this project. First and foremost, SPR recognise that this is a public health issue and are committed to protecting the health and wellbeing of everyone involved. SPR and its supply chain will regularly review their processes and make adjustments to reflect the latest advice from the UK Government. Whenever it is not possible to proceed with the normal approach then SPR will consult with the relevant stakeholder or consenting authority to find a solution that all parties find agreeable. SPR, as the developer, takes its commitments under statutory provisions very seriously and will aim to comply with standard practice and guidance where practicable. SPR would like to thank all stakeholders and the consenting authority for their understanding and flexibility in dealing with this serious matter. Given the current restrictions on public events and social gatherings, SPR will consider innovative ways of engaging with communities and the public to inform them of the proposed Development. Further information is provided below in Section 3.7.3.

1.2 Purpose of the Scoping Report

13. SPR has appointed RSK to undertake an EIA scoping study for the proposed Development, and to prepare the Environmental Impact Assessment (EIA) Scoping Report to accompany a request to the ECU for an EIA Scoping Opinion under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2019 ('the EIA Regulations'). The EIA Scoping Opinion consultation responses and the findings of the EIA process will be used to inform the final design of the proposed Development and assess its predicted environmental effects. The results of the EIA will be presented in an EIA Report, which will be submitted in due course to the ECU in support of the Section 36 application for consent.

14. Undertaking a scoping exercise is not a statutory requirement under the EIA Regulations, but is considered good practice[4] and forms an important step in EIA.

[3] Scottish Government (2018) Good Practice Principles for Shared Ownership of Renewable Energy Developments
[4] SNH (2018) A Handbook on Environmental Impact Assessment 5th Edition

15. Scoping allows all parties involved in the EIA process to agree on key environmental issues relevant to a development, and to agree on the methodology used to assess and identify likely significant environmental effects. It also acts as a catalyst to engage bodies involved in the decision-making process at an early stage in the planning process, and ensures that key opinions, based on local understanding, are identified at the outset.

16. The specific aims of this Scoping Report are to:

- engage with the relevant statutory and non – statutory consultees and stakeholders (see Appendix A) at an early stage in the EIA process and ensure all parties are sufficiently informed about the proposed Development;
- present all relevant statutory and non-statutory consultees and stakeholders with the opportunity to comment on the proposed Development, and respond to key questions included throughout (and included in Appendix B);
- Identify sources of relevant baseline data;
- establish a robust assessment and survey framework from which a comprehensive assessment can be conducted and included within the EIA;
- identify all relevant technical and environmental issues which are likely to be significantly affected by the proposed Development, for consideration within the EIA;
- 'scope out' issues where significant effects are deemed unlikely;
- Set out broad measures focusing on minimising the environmental effects associated with the proposed Development; and
- define a clear structure for the EIA report.

17. Upon receipt of the Scoping Opinion, SPR will continue the EIA process that will culminate in the preparation of an EIA Report in accordance with the requirements of the EIA Regulations. The EIA Report will also reflect the advice and guidance provided in the Scoping Opinion, in accordance with Regulation 5(3).

1.3 The Applicant

18. The Applicant is ScottishPower Renewables (UK) Limited (SPR).

19. SPR is part of the ScottishPower group of companies operating in the UK under the Iberdrola Group, one of the world's largest integrated utility companies and a world leader in wind energy. ScottishPower now only produces 100% green electricity – focusing on wind energy, smart grids and driving the change to a cleaner, electric future.

20. SPR has a leading role in driving the transition to a renewable future. A cleaner electric future to power smarter homes and businesses and decarbonise the transport and heating systems.

21. SPR is at the forefront of the development of the renewables industry in the UK through pioneering ideas, forward thinking and outstanding innovation. SPR's ambitious growth plans include offshore windfarms in East Anglia with the team also leading the Group's international offshore development including in Germany, France and the USA.

22. With over 40 operational windfarms, SPR manage all sites through the world leading Control Centre at Whitelee Windfarm, near Glasgow.

1.4 RSK

23. Whilst RSK is a large and fast-growing company, renewable energy has formed a key and growing part of the business over the last 20 years. As a company involved in the delivery of EIA since inception in 1989, RSK is also committed to ensuring it remains at the forefront of developments in EIA practice, for example in the recent *Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017*. RSK possesses the Institute of Environmental Management and Assessment (IEMA)'s EIA Quality Mark and the team responsible for preparing this scoping report is also individually accredited by IEMA. RSK is also accredited with ISO 9001 and ISO 14001 and OHSAS 18001.

1.5 Scoping Report Structure

Section	Content
Chapter 2: Project and Site Description	Provides an outline of and rationale for the proposed Development, including the mixed technology approach and details of the Site and surrounding area.
Chapter 3: The Environmental Impact Assessment	Provides details on the approach to scoping the EIA, sets out the process of scoping consultation and describes the specialist studies that will be undertaken to assess the effects of the proposed Development on the environment.
Chapter 4: Planning and Renewable Energy Policy Context	Identifies the relevant national and local planning policies that are likely to be relevant when determining the application for consent, as well as the national renewable energy and climate change policy context and other material considerations.
Topic Chapters 5-13	Describe the specialist environmental studies that are proposed to be undertaken to assess the potential effects of the proposed Development on the environment and, where relevant, notes those aspects to be scoped out of the EIA.
Appendix A: Proposed Scoping Consultees	Lists the consultees, both statutory and non-statutory, who will be contacted by the ECU for input to the Scoping Opinion.
Appendix B: List of Scoping Questions	Provides a consolidated list of all questions included throughout the Scoping Report which are being used to seek clarification on key points

1.6 Invitation to Comment

24. You are invited to comment on the content of this Scoping Report. Please send all comments to the ECU at the following address:

Energy Consents Unit
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU
Econsents_admin@gov.uk

25. If you wish to discuss matters contained in this Scoping Report in greater detail before sending comments to the ECU, please contact:

Joe Somerville
RSK
65 Sussex Street
Glasgow
G41 1DX
jsomerville@rsk.co.uk

2 Project & Site Description

2.1 Site Location

26. The application boundary of the Site is located approximately 1.2 km south of the village of Tarbert and 1.1 km north of the village of Skipness, situated within the northern part of the Kintyre Peninsula in Argyll & Bute. The closest identified residential property located *c.* 1.6 km from the nearest proposed turbine location. The Site is located within the forestry regions of Skipness and Corranbuie. Skipness and Corranbuie are separate areas but both are owned by Forestry and Land Scotland (FLS) and therefore, considered one potential multiple technology development site. The Site is dominated by the Corranbuie Forest (1065ha) and the Skipness Forest (1165ha), and the land consists predominantly of commercial forestry.

27. The topography of the Site is variable and undulating and is dictated by the seven small hills within the forested areas: Cruach an t-Sorchain (343m AOD), Cnoc an Fhreacadain (237m), Cruach Bhreac (351m), Cruach Doire Leithe (377m), Cruach na Machrach (346m), Guallan Mhor (303m) and Meall Donn (276m). Between the hills, the land is generally below 14% slope, with the exception of some land in the north Corranbuie parcel and throughout the south west of the Skipness parcel.

28. The main transport routes within the immediate area include the A83 trunk road which serves the Kintyre peninsula between Tarbert and Campbeltown. The A83 passes the northern end of the Site. The B8001 runs along the western end of the Site and corresponds with National Cycle Route (NCN) 78. There are no roads on the eastern or western ends of the Site. Islay and Jura can be accessed by ferry at Kennacraig Ferry Terminal, approximately 6.2 km west of the Site. The Isle of Arran can be accessed by ferry at Claonaig Ferry Terminal, approximately 7 km south west of the Site.

29. The cumulative impacts, in terms of wind turbines, will also be important with regard to any nearby sites as well as the cumulative pattern of development along the Kintyre Peninsula and the capacity of this landscape to accommodate this change.

30. There are several Landscape designations near the Site, most prominent amongst them are the North Arran National Scenic Area (NSA) and Special Landscape Area (SLA), and the Argyll and Bute Council Areas of Panoramic Quality (APQ). Tarbert Woods is the closest natural heritage designation and is a Special Area of Conservation (SAC) (see Figure 6.1). The Local Nature Conservation Site West Loch Tarbert is c. 400 m to the west of the Site, while 1.3 km north west and 1.4 km to north is the Glen Ralloch to Baravalla Woods Site of Special Scientific Interest (SSSI). The nearest Special Protection Areas (SPAs) are Knapdale Lochs SPA & Kintyre Goose Roosts SPA, respectively 10 km and 14.5 km away.

31. SPR has applied for temporary planning permission to install a 90 m meteorological mast within the Site for a period of 60 months (application reference: 20/00586/PP).

2.2 Site Selection and EIA Design Approach

32. SPR is committed to the responsible development of renewable energy, with each project undergoing a thorough site selection process to determine whether it can be successfully delivered. The development of a renewables project is a complex process, with a wide range of factors being considered such as financial viability, capacity of the grid network, proximity to people and sensitive features, and the potential effects it may have on the environment.

33. From the outset, the aim of the site development process is to achieve a balance through the design process of a site that maximises renewable energy production while keeping any resultant environmental effects to an acceptable level, and minimised where possible.

34. The site for the proposed Development has been selected by SPR for numerous reasons:

- it has a good wind resource;
- it can accommodate wind turbines and associated infrastructure without affecting sites designated for their natural or heritage interests such as SSSI, SAC, Special Protection Area (SPA) and nationally and locally protected monuments;
- It can make use of the existing Timber Haulage Route to minimise environmental impacts and will seek to maximise the reuse of infrastructure and materials as far as possible including onsite forestry tracks;

- it is accessible for construction traffic and turbine deliveries;
- there are several areas of flat/gentle sloping south facing land that are suitable for ground mounted solar; and
- the grid network in the west coast of Scotland has been identified as requiring balancing services that would be suited to battery storage potential, which would complement the turbines and other co-located technologies such as solar PV.

2.3 EIA Design Evolution and Pioneering Best Industry Practice

35. The proposed Development will undergo significant review iterations prior to selecting the fixed design area and amendments will be made at each stage in response to the findings of environmental surveys in order to find the most appropriate location for the proposed Development.

36. SPR is confident that the design evolution of the proposed Development will result in an optimal design and location of renewable infrastructure during EIA and design, and the iterative process will seek to produce an optimal layout taking cognisance of the following key design factors:

- minimise prominence of the proposed Development in views from the North Arran NSA (and SLA) and Argyll & Bute Council areas of panoramic Quality;
- reduce the prominence of the proposed Development in views from Portavadie which is directly across East Loch Tarbert;
- reduce the prominence of the proposed Development in views from South Cowal; Isle of Bute; North Arran; channelled views down and within Loch Fyne; the Kintyre Way and upland areas of the Kintyre peninsula; upland areas within South Knapdale; and Skipness Castle;
- minimise potentially adverse cumulative effects of the Development in combination with other local windfarms in operation, construction, that have been approved, or that are awaiting determination;
- minimise the lateral extent of turbines;
- reduce visibility from surrounding roads and routes, including the A83, B8001, Kintyre Way and nearby ferry routes.
- avoid significant impacts upon habitats and ecological features;
- avoid siting infrastructure on areas of deep peat;
- minimise landscape and visual impacts while maximising the production of renewable energy;
- be in accordance with the Argyll and Bute Landscape Wind Energy Capacity Study (LWECS) and the current A&BC LDP;
- reduce the amount of felling and accommodate any Land Management Plan for the area;
- minimise and, where possible, avoid the loss of priority habitats and species, and create opportunity for habitat enhancement;
- protect watercourses from the potential impacts of constructing the Development;
- ensure the proposed Development can be engineered and constructed safely; and
- improving public access to the general area.

37. As a direct consequence of the results taken from one year of ornithological surveying in the area and following discussion with Scottish Natural Heritage (SNH) and Argyll and Bute Council, the proposed Development excludes the areas to the north deemed unsuitable for turbine development due to the presence of a range of species including Golden Eagle, Red Throated Diver and Hen Harrier.

38. The site selection process has resulted in improvements and importantly, SPR confidently believes the final design layout for the Earraghail Renewable Energy Development will represent a project that delivers a meaningful contribution to renewable energy targets and benefits to the local economy, whilst minimising the effects on the environment and surrounding area.

2.4 Project Description

39. The main elements of the proposed Development will comprise:

- up to 13 turbines up to 200 m to blade tip;
- ancillary grid technologies including battery storage;
- external transformers at the base of each turbine;
- crane hardstandings adjacent to each wind turbine;
- power cables laid in underground trenches, linking electricity generation sources to the control building;
- upgraded and new site access tracks, passing places and turning heads;

- permanent and temporary power performance assessment (PPA) anemometry masts;
- substation compound including a control building, parking and lighting columns;
- health and safety and other directional signage;
- close circuit television (CCTV) mast(s);
- temporary site construction compounds; and
- temporary borrow pits.

40. Further elements of the scheme are also being considered at present, primarily Solar PV and hydrogen production, and these are discussed further below.

2.4.1 Wind Turbines

41. A candidate turbine manufacturer and model will be selected for each technical and environmental discipline, as necessary, for the purposes of the EIA. A competitive procurement process will be undertaken, should consent be forthcoming and prior to construction, to select the final turbine that would be installed onsite. The final wind turbine selected would have dimensions that fit within the maximum parameters assessed in the EIA, i.e. up to 200m tip height.

42. The specification of a typical wind turbine would comprise a horizontal axis design, of three rotor blades, a hub and a nacelle. The tower would be tubular and tapered in design and finished in a light grey semi-matt colour. It is assumed for the purposes of assessment that each wind turbine would be served by its own external, electrical transformer so as to assess the worst-case scenario in the EIA. The transformers would be located close to the base of each wind turbine.

2.4.2 Battery Storage

43. There is a national requirement to balance the peaks and troughs associated with electricity supply and demand to avoid strains on transmission and distribution networks and to keep the electricity system stable. A battery storage facility is therefore proposed at the Site to support the flexible operation of the National Grid and decarbonisation of electricity supply.

44. The battery storage facility would store electrical energy through the use of batteries, contained alongside inverters within a self-contained building, adjacent to the onsite control building to allow easy connection to the grid. The batteries would be housed in a structure very similar to a shipping container. The battery storage containers would include the following elements: a battery storage room, a switchgear room, inverters, supervisory control and data acquisition (SCADA) equipment and a fire suppression room.

2.4.3 Potential Solar PV

45. SPR is investigating the feasibility of incorporating solar PV technology within the Site. The use of solar PV panels would improve the energy security as it would allow for the generation of energy through different means and under different conditions. Whilst the area does not have particularly high irradiance levels compared to other areas in the UK, there are advantages to including solar PV within the Site. The land is gently sloping south, and solar PV and wind are complementary renewable energy technologies. Including solar PV would maximise the efficiency and output of the site grid connection.

2.4.4 Potential Hydrogen Production

46. SPR is investigating the feasibility of incorporating a hydrogen production facility within the proposed Development in the future. This process would use electricity produced by the renewable technologies to produce hydrogen from water which is then compressed and stored. This hydrogen could then be used for transportation or converted back to electricity when there is demand from the National Grid. Any hydrogen facility would likely be located adjacent, or close, to the substation compound in structures very similar to shipping containers.

47. There are ongoing investigations into the feasibility of the use of hydrogen as fuel for transport throughout the west coast of Scotland, and the results of these feasibility studies will determine whether it will be feasible to include hydrogen production within the proposed Development. Consequently, hydrogen production is not included within the confirmed project description at this stage but will be assessed and consulted upon appropriately if proposed at a later date in the future.

2.4.5 Substation and Grid Connection

48. The proposed Development would include a new onsite substation and control building. The substation and control building would be a single storey building with a pitched roof and solar panels with the building also housing switchgear, metering,

protection and control equipment. Car parking and storage spaces would also be provided within the substation compound. The substation will be connected to the national grid transmission system.

49. Proposed wind turbines and battery storage would be connected to the onsite substation by underground cabling. The grid connection will be subject to a separate consenting regime and is the responsibility of the electricity grid network operator, Scottish and Southern Energy Networks (SSEN). Information on the route of the grid connection will be set out in the EIA Report, but this will not form part of the assessment or be included in the application for consent.

50. It is proposed that the wind turbine components will be delivered to Campbeltown Harbour. A preliminary Route Survey Report has determined that, based on the turbine components considered, transport loads will follow a predetermined route which turns right on Hall Street before following Kinloch Road. Transport loads would then turn left onto Aqualibrium Avenue then continue on to the A83. The abnormal loads will then continue north on the A83 past the existing Cour Windfarm access junction. Loads would continue north on A83 reaching the site access point at Corranbuie.

51. Should turbine towers be sourced from the CS Wind UK manufacturing factory in Machrihanish, transport loads would depart the factory and turn right before continuing east/north east to the junction with the A83. These loads would then travel north on the A83 until they reached the site access point. Should an alternative supplier be used then it is likely that the turbine tower components will be delivered to Campbeltown Harbour and follow the route to Site described above.

52. For the other technologies that will be installed onsite, it is likely that they will be delivered using standard articulated lorries utilising the road network between Glasgow and Kintyre.

2.4.6 Borrow Pits

53. The material required for the construction of onsite access tracks, foundations and hardstandings would largely be sourced from onsite borrow pits where possible. By employing this approach, the transportation of stone to site would be minimised, however this is dependent on the quality of stone found as it may be necessary to import stone into the Site for use as a capping material for the access tracks and hardstandings. The possibility of using material from existing Forestry and Land Scotland borrow pits onsite will be explored during the design process. Using existing borrow pits would be more efficient and has the potential reduce the impact of the construction works on the Site, subject to it being of sufficient quality.

54. The location and design of onsite borrow pits will be considered as part of the ongoing EIA and design process. The borrow pits will be reinstated after use, using the excess overburden and excavated material from the track building process where possible.

2.4.7 Forestry

55. The entire southern part of the Site and the majority of the northern part of the Site is covered in commercial forestry. Forestry will form an integral part of the proposed Development, and a detailed forest design and management plan will be optimised to enhance both the forestry and renewable energy development in collaboration with Forestry and Land Scotland (formerly Forestry Commission Scotland) and submitted with the application. The forest works will be subject to assessment through the integrated EIA process. Compensatory planting will be undertaken by SPR to account for forestry lost onsite to wind turbines and associated infrastructure, in accordance with the Scottish Government's Control of Woodland Removal policy.

2.5 Construction Works

56. It is expected that the construction of the proposed Development will be completed over a period of up to 20 months and will consist of the following principal activities:

- construction of the temporary construction compound(s);
- extraction of stone from the borrow pits for track and foundation construction;
- construction of site access junction, tracks and passing places and any watercourse crossings;
- construction of culverts under tracks to facilitate drainage and maintain existing hydrology;
- construction of all foundations, hardstandings and transformer plinths;
- construction of an onsite substation and battery storage facility (and hydrogen production facility if included as part of proposals);
- excavation of trenches and cable laying adjacent to site tracks;
- movement onto site and erection of wind turbines;

- commissioning of the site; and
- restoration of borrow pits and temporary construction compounds.
- Construction of ground mounted solar panels and associated infrastructure, if included as part of proposals

57. Many of these operations will be carried out concurrently, although predominantly in the order identified. This will reduce the overall length of the construction programme. In addition, development will be phased such that, at different parts of the Site, the civil engineering works will be continuing whilst generating technology is installed. Site restoration will be programmed and carried out to allow restoration of disturbed areas progressively and as early as possible.

2.6 Operational Maintenance

58. Maintenance work will involve visiting the site regularly to undertake scheduled maintenance and operational checks. Annual servicing will involve the undertaking of non-essential repairs on the equipment.

2.7 Proposed Development Life and Decommissioning

59. There is no proposal to limit the lifetime of the proposed Development. Therefore, the assessment of all technical areas considers the effects of the operational phase of the proposed Development in perpetuity. Should decommissioning of any of the proposed Development be required it is considered that any effects would be less than those resulting from construction of the proposed Development, and as such this potential for decommissioning has been scoped out of further assessment.

3 The Environmental Impact Assessment

3.1 The EIA Process

60. EIA is a systematic process which involves the consolidation, evaluation and presentation of all likely significant effects, both positive and negative, associated with a proposed Development. As mentioned above, the scoping exercise also provides clarification on key effects associated with the proposed Development, and clearly details which issues are to be "scoped in" or included within the EIA Report. This process is also important in determining the effects which are likely to be scoped out in order to ensure the EIA Report remains focussed on the likely significant environmental effects.

61. The EIA process enables the significance of positive and negative effects to be clearly understood and also provides clarity on the subsequent steps that should be taken to mitigate the negative and enhance the positive effects. The information collated throughout the EIA process is presented within the EIA Report in order to accompany the application for consent where it can aid and inform the relevant determining authorities. It also aids in the early engagement of planning authorities and other relevant stakeholders throughout the planning process. A list of proposed consultees that are being contacted as part of scoping is provided in Appendix A.

62. As part of an evolutionary and iterative process, EIA can provide insight that ultimately influences and enhances project design. This early information can lead to the avoidance, reduction and, where possible, offsetting of potentially significant and detrimental environmental effects.

63. The EIA will be conducted in accordance with current legislation and guidance, including:

- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017(as Amended);
- Scottish Government Web Based Guidance on wind turbines (updated in May 2014);
- SNH (2018) (Version 5), Environmental Impact Assessment Handbook;
- Institute of Environmental Management and Assessment (IEMA) (2004), Guidelines for Environmental Impact Assessment;
- Institute of Environmental Management and Assessment (IEMA) (2017), Delivering Proportionate EIA; and
- PAN 1/2013 Environmental Impact Assessment (updated June 2017).

3.2 Baseline Conditions

64. The EIA Regulations require that aspects of the environment, which are likely to be significantly affected by the proposed Development, are clearly defined within the EIA Report. To achieve this, it is necessary to gather environmental information on the current and existing status of each topic proposed for consideration as part of the EIA, i.e. 'baseline conditions'.

65. Baseline conditions are not static, and it is necessary to update them with further baseline surveys in order to ensure that the data upon which the EIA is based is up to date and accurately reflects the current situation of the receiving environment. For the purposes of the assessment, the baseline is considered to be the existing site which is currently undeveloped.

66. In accordance with best practice guidance[5] , and to inform the assessment of effects of the Development on a receptor's ability to adapt to climate change, each topic chapter of the EIA Report will also describe how projected climate change will alter current baseline conditions. This information will be drawn upon in the climate change assessment.

3.3 Assessment of Effects

67. The EIA Regulations (Regulation 4 (2), (3) and (4)) specify that the EIA must:

> *"(2) identify, describe and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of the proposed development (including, where the proposed development will have operational effects, such operational effects) on the factors specified in paragraph (3) and the interaction between those factors.*

[5] IEMA (2015), Climate Change Resilience and Adaptation

(3) The factors are—

(a)population and human health;
(b)biodiversity, and in particular species and habitats protected under Council Directive 92/43/EEC on the conservation of natural habits and wild flora(1) and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds(2);
(c)land, soil, water, air and climate; and
(d)material assets, cultural heritage and the landscape.

(4) The effects to be identified, described and assessed under paragraph (2) include the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters".

68. Preliminary discussions with key consultees, previous experience of other renewable energy developments in Argyll and Bute and across Scotland, combined with the EIA requirements, the knowledge of the Site and possible effects of the proposed Development, has led to the identification of the following topics for assessment in the EIA. A summary of known baseline conditions of relevance, predicted effects, any outline mitigation measures that can be recommended at this stage and the proposed scope for the EIA is provided for each of these topic areas in **Chapters 5 to 13** of this Scoping Report.

- Landscape and Visual Amenity;
- Ecology;
- Ornithology;
- Cultural Heritage;
- Hydrology, Hydrogeology, Geology and Soils;
- Noise;
- Traffic and Transport;
- Socio-Economics, Tourism and Recreation; and
- Other Issues.

69. To assess the potential effects associated with the proposed Development, a range of appropriate methodologies will be employed (as proposed in this Scoping Report) for each topic area to take into account the construction and operational phases of the proposed Development in relation to the Site and the surrounding environment, hereafter referred to as the study area.

70. An assessment will be made of the likely significant cumulative effects of the proposed Development in combination with other renewable energy developments, particularly windfarms including:

- schemes which have been submitted to the relevant authorities but not yet determined;
- schemes which are consented; and
- schemes which are under construction or operational.

71. The scope and methodology for the cumulative assessment will be agreed with the relevant statutory consultees, including Argyll and Bute Council and SNH. Study areas will be defined separately for each topic assessed in the EIA to reflect the likely extent of potential effects.

72. The technical assessments will each provide a detailed assessment of potential effects (direct and indirect, positive and negative, short term or long term), identify mitigation measures and determine the significance of the residual effects (those remaining after the mitigation measures have been implemented). Chapters will be accompanied by technical appendices and figures where relevant. All technical guidance and data sources used will be fully referenced, as required by Part 10 of Schedule 4 of the EIA Regulations.

73. A consolidated list of all significant effects before and after mitigation will be included in a final chapter of the EIA Report for ease of reference.

74. A standalone Non-Technical Summary (NTS) of the findings of the EIA Report will also be produced as required by Part 8 of Schedule 4 of the EIA Regulations.

3.4 Mitigation and Monitoring

75. Part 7 of Schedule 4 of the EIA Regulations notes that the EIA Report should include "*A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases*". These measures will be termed mitigation measures and will be included for each topic area, where appropriate.

76. The EIA will identify and assess potentially significant effects prior to mitigation, the subsequent effectiveness of mitigation measures put in place and the significance of residual effects identified thereafter. Good practice throughout the construction and operation phases and current regulatory contexts are not considered to be "mitigation" and form an inherent part of the design/ construction process. This information will be taken into consideration prior to the assessment of likely effects arising from the proposed Development. On the assumption that a number of good practice measures will be assumed to be in place, during both construction and operation, it may be appropriate to scope out a number of potential effects on this basis. This will be detailed in the relevant chapters of the EIA Report as appropriate.

77. More specific mitigation measures will then be proposed prior to determining the likely significance of residual effects with a mitigation schedule included as an appendix within the EIA Report.

78. The mitigation measures implemented will be subject to appropriate monitoring in order to assess effectiveness. Where monitoring is proposed, this will be "*proportionate to the nature, location and size of the proposed Development and the significance of its effects on the environment having regard in particular to the type of parameters to be monitored and the duration of the monitoring*" as stated in Part 7 (22) (2) (a) of the EIA Regulations.

3.5 Uncertainty

79. The EIA process is designed to enable good decision-making based on the best possible information about the environmental effects of a proposed Development. There will, however, always be an element of uncertainty as to the exact scale and nature of the effects. These may arise through shortcomings in available information or due to the limitations of the professional judgement process. As required in Schedule 4, Part 6 of the EIA Regulations, it is important that such uncertainty is explicitly recognised and that the EIA Report includes "*A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved*".

3.6 Competent Experts

80. As per Regulation 5(5), the EIA Report must be prepared by "competent experts" with a clear statement outlining the relevant competencies of those undertaking the EIA. This statement will be provided in the introductory sections of the EIA Report.

3.7 Consultation

3.7.1 Scoping Consultation

81. This Scoping Report is being issued to the ECU, who will then consult with key consultees and stakeholders before forming their Scoping Opinion. It is anticipated that the agencies and bodies to be consulted will include those listed in Appendix A. This list is not exhaustive and other agencies will be consulted by topic specialists on an informal basis for information to inform the EIA as and when required.

82. The EIA regulations (Regulation 5(3)) specify that:

> *"(3) Where a scoping opinion is adopted, the EIA report must be based on that scoping opinion and must include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment."*

3.7.2 Post Scoping Consultation with ECU

83. Consultation meetings are proposed to be held with ECU, and other key consultees, in order to identify and agree the key assessment issues. SPR will explain the proposed approach to design of the proposed Development and mitigation. Agreement will also be sought on the proposed methodology, study areas and preliminary list of viewpoint locations issued with this Report.

3.7.3 Public Consultation for planning applications in light of COVID-19

84. Public consultation will be arranged following the submission of the scoping report. This will be an opportunity for the public to learn about the proposed Development, including the range of proposed and potential technologies, through information panels and supporting visualisations. Discussion and feedback on the renewable energy development will be encouraged; and where received, feedback will be taken into account in development of the design as part of the EIA.

85. There are clear expectations for projects applying for consent under S36 of the Electricity Act 1989 for consultation to take place ahead of any submission for consent. Traditionally this is delivered by a combination of direct communication with regulators, landowners, local authorities and other interest groups during the EIA process, and through the delivery of a well-publicised public exhibition hosted by the client and their specialist consultants.

86. In light of the restrictions on public meetings coming from Scottish Government advisers as a result of COVID-19, both SPR and RSK have considered the implications for delivering inclusive and effective public consultation for those projects currently in mid-scoping phase, undergoing EIA surveys or close to planning consent submissions.

87. Where possible, proposals for a remote/virtual consultation will be discussed with the planning authority beforehand and will form part of the Statement of Community Consultation (SoCC) process. The exact consultation approach taken will vary depending on the project location, the number of residents and businesses nearby and the size of the project. It is key that we ensure that the consultation methods we adopt allow for proper engagement with local communities, and it is increasingly likely that our traditional venues of community centres and village halls will be shut until further notice. SPR and RSK respect that not all members of the public will have access to the same level technology, so it is likely that a multifaceted approach will be taken so that consultation is fully inclusive.

88. The details around public consultation will be discussed with Argyll and Bute Council and the ECU in due course.

89. They will also allow initial discussions on community investment in the proposed Development through shared ownership and the other ways that the community could benefit from the proposed Development.

3.8 EIA Report

90. Once the aforementioned stages in the EIA process have been completed then an EIA Report will be produced to accompany the application for planning permission. The EIA Regulations (Regulation 5(2)) specifies that the EIA Report must include the following:

> *(a)a description of the development comprising information on the site, design, size and other relevant features of the development;*
> *(b)a description of the likely significant effects of the development on the environment;*
> *(c)a description of the features of the development and any measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*
> *(d)a description of the reasonable alternatives studied by the developer, which are relevant to the development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;*
> *(e)a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and*
> *(f)any other information specified in schedule 4 relevant to the specific characteristics of the development and to the environmental features likely to be affected.*

91. Schedule 4 of the EIA regulations, which provides more detailed guidance on how the regulations will work in practice, describes the information required for inclusion in the EIA Report. By following the provisions outlined in sections 3.2-3.7 then the final EIA Report will satisfy the requirements of Regulation 5 (3) of the EIA regulations.

4 Planning & Renewable Energy Policy Context

92. The proposed Development will be considered under Section 36 ('S.36') of the Electricity Act 1989 ('the Act'). As part of the S.36 application process, SPR will request that the Scottish Ministers issue a Direction under Section 57(2) of the Town and Country Planning (Scotland) Act 1997 ('the 1997 Act') that deemed planning permission be granted for the proposed Development.

93. Where deemed permission is sought under Section 57 of the Town and Country Planning (Scotland) Act 1997 (as amended), it must be noted that Section 25 'Status of the Development Plan' is not engaged. It should be noted that in the case of a S.36 consent application, Scottish Ministers direct that planning permission for that development shall be deemed to be granted and is therefore not considered to be 'determined' rather, it is 'directed'.

94. At the time of this scoping submission, the LDP covering the Site is the Argyll and Bute Local Development Plan, which was formally adopted, by Argyll and Bute Council, in March 2015. Supplementary guidance has been prepared in accordance with Scottish Planning Policy ('SPP') and subsequently adopted in December 2016 in the form of Supplementary Guidance 2: Renewable Energy.

95. Environmental matters, which should be taken into account in formulating the proposals and in the decision-making process, are set out in Schedule 9 of the Act. The Act requires that the applicant should have regard to these in any design iterations and necessary mitigation measures as part of the proposed Development. In turn, it is for the decision maker to have regard to these environmental features and determine whether the applicant has suitably discharged the requirements placed upon them.

96. SPR hold a licence as set out within sub-paragraph 3 and as such the following is relevant:

"In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate, transmit, distribute or supply electricity
(a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and
(b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects"

97. Sub-paragraph 3(2) imposes duties upon the Scottish Ministers in considering relevant proposals and states as follows:

"In considering any relevant proposals for which his consent is required under section 36 or 37 of this Act, the Scottish Ministers shall have regard to -
(a) the desirability of the matters mentioned in paragraph (a) of sub-paragraph (1) above; and
(b) the extent to which the person by whom the proposals were formulated has complied with his duty under paragraph (b) of that sub-paragraph."

98. In sub-paragraph 3(3) there is a requirement for a licence holder "*to avoid, so far as possible, causing injury to fisheries or the stock of fish in any waters."*

99. The EIA Report, to be produced in support of the forthcoming S36 application, will not assess the proposed Development against the relevant national and local planning policy and renewable energy context nor consider planning policy in detail. These functions will be undertaken within a separate Planning Statement. The Planning Statement will consider the balance of effects of the proposed Development as set out in the EIA Report, in the context of national and local policy and other material considerations. It will also set out how the Applicant has discharged the requirements of Schedule 9.

4.1 National Planning Policy, Guidance and Advice

100. National planning policy, guidance and advice are material considerations which are relevant to the proposed Development and will be considered in the EIA Report. These will include, but are not limited to, the following documents:

- Scottish Planning Policy (Scottish Government, June 2014);
- The National Planning Framework 3 (Scottish Government, June 2014);
- Onshore Wind Turbines Specific Advice Sheet (Scottish Government, updated May 2014);
- Energy Storage Planning Advice (Scottish Government, December 2013);
- Scottish Climate Change Plan (Scottish Government, 2018);
- Scottish Energy Strategy (Scottish Government, 2017);
- Scottish Onshore Wind Policy Statement (Scottish Government, 2017);
- Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments (Scottish Government, 2019);
- Planning Advice Note (PAN) 1/2011 Planning and Noise (Scottish Government, March 2011);
- PAN 2/2011 Planning and Archaeology (Scottish Government, July 2011);
- PAN 1/2013 Environmental Impact Assessment (Scottish Government, August 2013);
- PAN 51: Planning, Environmental Protection and Regulation (Scottish Government, October 2006);
- PAN 60: Planning for Natural Heritage (Scottish Government, January 2008);
- PAN 69: Planning and Building Standards Advice on Flooding (Scottish Government, August 2004);
- PAN 75: Planning for Transport (Scottish Government, August 2005);
- PAN 79: Water and Drainage (Scottish Government, September 2006); and
- Micro Renewables and the Natural Heritage: Revised Guidance (SNH, 2016).

4.2 Scottish Government Climate Change and Renewable Energy Policy

101. International, UK and Scottish climate change and renewable energy policies, and targets set the context for the framework in which the proposed Development is to be brought forward and are material considerations which are relevant to the proposed Development and will be considered in the EIA Report. The following text sets out the key documents which are relevant to Scotland.

4.2.1 Climate Change Act (2019)

102. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 received Royal Assent on 31 October 2019. The Act amends the Climate Change (Scotland) Act 2009 setting targets for the reduction of greenhouse gases emissions and makes provision about advice, plans and reports in relation to those targets.

103. The net-zero emissions target has been set as follows:

- *"(1) Scottish Ministers must ensure that the net Scottish emissions account for the net-zero emissions target year is at least 100% lower than the baseline (the target is known as the "net-zero emissions target").*
- *(2) The "net-zero emissions target year" is 2045."*

104. The interim targets have also been set which requires that Scottish Ministers must ensure that the net Scottish emissions account for the year:

- *"(a) 2020 is at least 56% lower than the baseline,*
- *(b) 2030 is at least 75% lower than the baseline, and*
- *(c) 2040 is at least 90% lower than the baseline."*

4.2.2 Scottish Climate Change Plan (2018)

105. The Scottish Government published its updated Climate Change Plan (CCP) in February 2018. This sets out how Scotland can deliver its climate change target of 66% emissions reductions, relative to the baseline, for the period 2018-2032. The Plan includes emissions reduction trajectories for a range of sectors, in addition to indicators for monitoring progress.

106. The CCP confirms the Scottish Government support for the Paris Agreement, which sets the standard for the international response to climate change. In terms of the electricity sector, the CCP states that:

- *"By 2032, Scotland's electricity system will supply a growing share of Scotland's energy needs and by 2030, 50% of all Scotland's energy needs will come from renewables.*
- *By 2032, Scotland's electricity system will be largely decarbonised and be increasingly important as a power source for heat and transport.*
- *Electricity will be increasingly important as a power source for heat and in transport to charge Scotland's growing fleet of ultra-low emission vehicles."*

4.2.3 Climate Change (Scotland) Act 2009

107. Section 44 of the Climate Change (Scotland) Act 2009 imposes a statutory duty on public bodies when exercising its functions to act in a way best calculated:

- to contribute to the delivery of the targets;
- to help to delivery any programme laid before the Parliament under Section 53 (the Climate Change Plan); and
- in a way that it considers most sustainable.

4.2.4 Scottish Energy Strategy (2017)

108. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 sets out updated targets for reaching net-zero emissions which should be read in conjunction with the Scottish Energy Strategy.

109. The Strategy sets out onshore wind as a clear opportunity with an action to prioritise and deliver a route to market which continues to support development while protecting landscapes. Specifically, the Strategy determines that:

110. *"Our energy and climate change goals mean that onshore wind must continue to play a vital role in Scotland's future – helping to decarbonise our electricity, heat and transport systems, boosting our economy, and meeting local and national demand.*

111. *That means continuing to support development in the right places, and – increasingly – the extension and replacement of existing sites with new and larger turbines, all based on an appropriate, case by case assessment of their effects and impacts."*

112. In addition, the Strategy sets out:

"This can be done in a way which is compatible with Scotland's magnificent landscapes, including our areas of wild land. This means that the relevant planning and consenting processes will remain vitally important. A major review of the Scottish planning system is well under way, and will continue as now to fully reflect the important role of renewable energy and energy infrastructure, in the right places."

4.2.5 The Global Climate Emergency - Scotland's Response (2019)

113. On 28 April 2019 First Minister of the Scottish government Nicola Sturgeon declared a climate emergency at the annual Scottish National Party conference. The 2019 response to this determined that the evidence for this is irrefutable and that people expect action.

"The Intergovernmental Panel on Climate Change issued a stark warning last year: the world must act now. By 2030 it will be too late to limit warming to 1.5 degrees."

114. The next National Planning Framework and review of the Scottish Planning Policy are to focus considerably on how the planning system can support the climate change goals detailed within the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.

115. These targets require *"a fundamental change from the current piecemeal approach that focuses on specific actions in some sectors to an explicitly economy wide approach"*. To deliver the transformational change that is required, structural changes are required across the board including changes to the following planning, procurement, and financial policies, processes and assessments.

4.2.6 Onshore Wind Policy Statement (2017)

116. Published in December 2017, the Onshore Wind Policy Statement highlights in Chapter 1 that onshore wind's contribution must continue to grow in order for it to play a vital role in meeting Scotland's energy needs as well as materially growing the economy:

"The Scottish Government is determined to influence, enable and deliver a clean and integrated energy system, delivering reliable supplies at an affordable cost. Onshore wind, a mature and established technology, is now amongst the lowest cost forms of generating electricity, renewable or otherwise. We expect onshore wind to remain at the heart of a clean, reliable and low carbon energy future in Scotland."

117. This means that Scotland will continue to need more onshore wind development and capacity, in locations across landscapes where it can be accommodated.

118. The Statement also recognises the technology shift towards larger turbines and whilst this may present challenges when identifying landscapes with the capacity to accommodate larger scale development, as not all will be suitable; fewer but larger wind turbines may also present an opportunity for landscape improvement, as well as increasing the amount of electricity generated. It is further stated:

"The Scottish Government acknowledges the way in which wind turbine technology and design is evolving, and fully supports the delivery of large wind turbines in landscapes judged to be capable of accommodating them without significant adverse impacts."

Chapter 3 considers the suitability of the current consents process for determining appropriate onshore windfarm development:

119. "*We believe that the current system, as described in our consultation as "business as usual", continues to represent an effective and efficient process for considering applications for developments in excess of 50 MW. However, we still expect developers of such projects to make every effort to find opportunities to collaborate, and to reduce potential local landscape impacts."*

120. Chapter 5 looks at the protection for residents and the environment and determines that:

"The Scottish Government believes that our ambitious renewable energy goals are very much in the interests of Scotland's citizens and environment. We also believe that developments can and must strike the right balance between utilising Scotland's significant renewable energy resources whilst protecting our finest scenic landscapes and natural heritage."

121. In relation to Community Benefits, Chapter 6 highlights:

"Our expectation remains that developers should continue to offer meaningful community benefits in line with our Good Practice Principles."

122. These good practice principles are included within the Scottish Government Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments (2019).

4.2.7 Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments (2019)

123. It should be noted that the provision of community benefits is not a material consideration and has no bearing on the planning process, however community benefits packages can take many forms, and decisions on the details are best led locally based on consensus between the renewable energy business and the community/communities concerned.

124. Community benefits offer an opportunity for communities to benefit from their local renewable energy resource by engaging them in discussions to build a lasting relationship with the renewables industry that supports Scotland's transition to a low carbon future. The key Good Practice Principles are as follows:

- Lasting Legacy;
- Trust and Transparency;
- Flexible Approach;
- Develop a Community Action Plan;
- Decision best led locally; and
- Fair process between renewable industry and community.

4.3 The Development Plan

4.3.1 Argyll and Bute Local Development Plan 2015

125. Argyll and Bute Council adopted their current LDP in March 2015, and this will be a material consideration in determining the application for the proposed Development. The LDP is accompanied by Supplementary Guidance adopted in March 2016 and is a part of the Development Plan. This provides further detail and guidance on the policies within the LDP, and where necessary supplements these with additional policy requirements.

126. The LDP policy of primary relevance to the proposed Development is **Policy LDP 6 Supporting the Sustainable Growth of Renewables**, which states that:

"The Council will support renewable energy developments where these are consistent with the principals of sustainable development and it can be adequately demonstrated that there is no unacceptable significant adverse effect, whether individual or cumulative, including on local communities, natural and historic environments, landscape character, visual amenity and that proposals would be compatible with adjacent land uses."

127. The policy highlights that the Council will prepare a spatial framework for windfarms and wind turbine developments over 50m high as supplementary guidance, in accordance with SPP. This guidance was adopted in December 2016 in the form of Supplementary Guidance 2: Renewable Energy. The spatial framework identifies areas which have potential for windfarm development, and those which don't, including areas required significant protection in accordance with the criteria set out in Table 1 of SPP. According to the spatial framework map, the proposed Development lies partly in a Group 3 Area (area with potential for wind turbine development subject to other policy considerations).

128. Policy LDP 6 sets out the criteria against which new renewable energy development applications will be assessed, one of which is the ability to provide opportunities for incorporating energy storage.

129. Table 4.1 lists the policies within the current LDP and supplementary guidance of relevance to the proposed Development which will be considered during the design process and subsequent EIA.

Table 4.1: Relevant LDP and SG Policies

LDP Policies	SG Policies
Policy LDP STRAT 1 – Sustainable Development	SG LDP Sustainable – Sustainable Siting and Design Principles
Policy LDP 3 – Supporting the Protection, Conservation and Enhancement of our Environment	SG LDP ENV 9 – Development Impact on Areas of Wild Land

LDP Policies	SG Policies
Policy LDP 10 – Maximising our Resources and Reducing our Consumption	SG LDP ENV 12 – Development Impact on National Scenic Areas (NSAs)
Policy LDP 11 – Improving our Connectivity and Infrastructure	SG LDP ENV 13 – Development Impact on Areas of Panoramic Value (APQs)
Policy LDP 5 – Supporting the Sustainable Growth of our Economy	SG LDP ENV 14 – Landscape
Policy LDP 8 – Supporting the Strength of our Communities	SG LDP ENV 7 – Water Quality and the Environment
	SG LDP ENV 11 – Protection of Soil and Peat Resources
	SG LDP SERV 2 – Incorporation of Natural Features / Sustainable Drainage Systems (SuDS)
	SG LDP SERV 3 – Drainage Impact Assessment (DIA)
	SG LDP SERV 7 – Flooding and Land Erosion – The Risk Framework for Development
	SG LDP ENV 1 – Development Impact on Habitats, Species and our Biodiversity
	SG LDP ENV 2 – Development Impact on European Sites
	SG LDP ENV 4 – Development Impact on Sites of Special Scientific Interest (SSSIs) and National Nature Reserves
	SG LDP ENV 5 – Development Impact on Local Nature Conservation Sites (LNCS)
	SG LDP ENV 6 – Development Impact on Trees / Woodland
	SG LDP ENV 15 – Development Impact on Historic Gardens and Designed Landscapes
	SG LDP ENV 16(a) – Development Impact on Listed Buildings
	SG LDP ENV 19 – Development Impact on Scheduled Ancient Monuments
	SG LDP ENV 20 – Development Impact on Sites of Archaeological Importance
	SG LDP TRAN 2 – Development and Public Transport Accessibility
	SG LDP TRAN 5 – Off-Site Highways Improvements
	SG LDP REC/COM 1 – Safeguarding and Promotion of Sport. Leisure, Recreation, Open Space and Key Rural Services
	SG LDP TRAN 1 – Access to the Outdoors
	SG LDP TRAN 7 – Safeguarding of Airports

130. SPR and RSK acknowledge that Argyll and Bute Council are currently in the process of preparing their new Local Development Plan (LDP2). Consultation on this has ended and the next stage will be examination. The LDP2 is planned to be adopted in October 2021, which is beyond the scope of the planning application process for the proposed Development. Until LDP2 is adopted the statutory status of the current LDP remains.

4.4 Other Material Considerations

131. There are a number of other material considerations that are relevant to the consideration of the proposed Development. These include the documents considered in the following text.

4.4.1 Argyll and Bute Landscape Wind Energy Capacity Study Update (2017)

132. The previous Argyll and Bute Landscape Wind Energy Capacity Study (ABLWECS) 2012 assessed the sensitivity of Landscape Character Areas (LCAs) within Argyll and Bute to accommodating wind turbines with a tip height of up to 130 m.

133. The Argyll and Bute Landscape Wind Energy Capacity Study 2017 is an update to the 2012 study and has been prepared in response to cumulative baseline changes in Argyll and Bute during the intervening period, as well as emerging trends in the onshore wind industry, whereby larger turbines are commonly being proposed to maximise output efficiencies.

134. Following on from the findings of the 2012 study, which identified a few landscape character areas (LCAs) with some scope for larger turbines, or landscapes which already accommodate operational windfarms, the 2017 study considers the sensitivity of these LCAs to accommodating 'very large' turbines i.e. turbines of a tip height greater than 130 m.

135. The 2017 study also provides an updated landscape strategy for Argyll and Bute, which is similar to that set out in the 2012 study. Nine objectives are proposed, and these include:

- protecting the most scenic of Argyll and Bute's landscapes;
- maintaining the wild land qualities of the mountainous landscapes;
- protecting the special qualities of the coastal landscapes, islands and wider seascape;
- conserving the character and integrity of inner Loch Fyne;
- conserving the rich scenic character found at the northern and southern end of Loch Awe;
- following the established pattern of larger windfarm development associated with less sensitive upland landscapes;
- avoiding exacerbating intrusion on Arran, Gigha and surrounding seascapes;
- directing larger typologies away from settled coastal and loch fringes; and
- on-going review of cumulative landscape.

136. The proposed Development is within LCT6: Upland Forest Moor Mosaic. The ABLWECS states the following in relation to this LCT:

"There is very limited scope for the Very Large typology (turbines >130m) to be accommodated. The narrow extent of this peninsula and its relatively low relief (especially in the northern part of this LCT) inhibits opportunities for turbine >150m high. Very large turbines in many locations would be likely to significantly intrude on views from both Gigha and Arran, considerably extending effects and potentially affecting the 'space and cluster' spatial patterns of existing wind farm development evident in the northern part of the peninsula in views from Arran. Turbines <150m may be able to be accommodated provided they are set well into the centre of the peninsula and occupy more contained sites which would minimise the effects of turbines of this size on the coastal fringes of Kintyre and on views from Arran and Gigha."

137. In terms of the applicability of the 2017 ABLWECS's findings to individual sites, the study states that:

"The purposes of assessing sensitivity in the wider arena landscape planning is different to that undertaken as landscape and visual impact assessment which is specific to a particular project or development and its location."

138. Therefore, it should be reinforced that whilst the findings of the ABLWECS will be considered in the design of the proposed Development, it just gives a general view on the acceptability of wind turbine development in the area, which should not be a substitute for individual and detailed landscape and visual assessment.

4.4.2 Argyll and Bute Renewable Energy Action Plan

139. The Renewable Energy Action Plan has been developed to assist Argyll and Bute realise its vision for the development of the renewable energy sector. The vision is:

"Argyll and Bute will be at the heart of renewable energy development in Scotland by taking full advantage of its unique and significant mix of indigenous renewable resources and maximising the opportunities for sustainable economic growth for the benefit of its communities and Scotland."

140. Key actions of the REAP fall into the following categories: Transport and Connectivity, Supply Chain, Business Land and Skills and Recruitment. Those of relevance to renewable energy developers mainly relate to enhancing supply chain opportunities and skills development to support the growth of the industry in Argyll and Bute.

4.4.3 Argyll and Bute Renewable Energy Action Plan (2018/19)

141. ABRA (Argyll and Bute Renewable Alliance) is a strategic public/private sector alliance led by Argyll & Bute Council with a vision and an action plan for working together and aligning partner resources to power Scotland's future. ABRA developed the Renewable Energy Action Plan to guide activities.

142. It is recognised within the Renewable Energy Action Plan that the region has access to a unique and significant mix of indigenous renewable energy resources in hydro, wind, wave, tidal, biomass and solar. It is also noted that the region's eastern borders are close to Scotland's central belt, while its Western Seaboard is close to Ireland, creating power supply opportunities to large urban areas and rural communities on both sides of the Irish Sea.

143. In light of the above, the Renewable Energy Action Plan set out the vision of Argyll and Bute as follows:

"Argyll and Bute will be at the heart of renewable energy development in Scotland by taking full advantage of its unique and significant mix of indigenous renewable resources and maximising the opportunities for sustainable economic growth for the benefit of its communities and Scotland."

144. Argyll and Bute is considered to be well placed to take advantage of the economic opportunities offered by renewable energy to build on the existing track record of pioneering and delivering renewables.

145. The key actions include:

- TC1: Ensure the grid is fit for purpose to meet renewable energy opportunities;
- BL2: Consider future renewables business accommodation and land requirements and feed into Local Development Plan preparation and any relevant national policies;
- ABRA 2: Support community benefits from renewables development and respond to future Scottish Government consultations; and
- ABRA 4: Influence legislation and policy development to ensure delivery of overarching ABRA vision and to assist in securing a successful route to market.

4.4.4 Shared Ownership and Community Benefit

146. The Scottish Government is keen to see developers share the benefits of renewable energy with local communities through opportunities to invest in renewable energy projects and to receive community benefit funds from them. The two benefits can be summarised as follows:

- shared ownership is a structure which involves a community group as a financial partner in a renewable energy project; and
- community benefit is a voluntary fund provided to the local community which is usually linked to the installed MW capacity of the operational windfarm.

147. The Scottish Government reiterated its commitment to shared ownership in the Energy Strategy and Onshore Wind Policy Statement, by stating:

"Our ambition remains to ensure that, by 2020, at least half of newly consented renewable energy projects will have an element of shared ownership. The Scottish Government continues to encourage all developers to engage with local communities early in the process, and to offer – as standard, in any new or repowered development – the opportunity for shared ownership.

Shared ownership will play a key part in helping to meet our targets of 1 GW of community and locally owned energy by 2020 and 2 GW by 2030. We expect community involvement in onshore wind developments to continue to play a vital role in reaching these targets."

148. These aims were further reiterated in the Scottish Government Good Practice Principles for Shared Ownership of Onshore Renewable Energy Developments (2019). This publication sets the key principles as follows:

"The Scottish Government would like to see shared ownership projects being considered, explored, and offered as standard on all new renewable energy projects including, repowering and extensions to existing projects. We welcome the progress made since the Good Practice Principles were published in 2015.

The Scottish Government would encourage communities themselves to make a direct approach to a renewable energy business to discuss any potential for shared ownership opportunities."

149. As mentioned in Chapter 1, SPR is already actively involved in providing community benefit in Argyll through its Cruach Mhor, Clachan Flats and Beinn an Tuirc Phase 1 and 2 windfarms. Community shared ownership is also being offered in relation to Beinn an Tuirc Phase 3. The Scottish Government promotes community involvement in renewable energy schemes through its suggested Good Practice Principles. In addition to promoting shared ownership and community benefit as good practice, the Scottish Government also promotes the development of community action plans which enable communities to collectively identify local initiatives which could be delivered by shared ownership and community benefit payments, thus enhancing the levels of benefit and meeting the local development needs of communities within areas hosting renewable energy developments. The EIA Report will consider the effects associated with shared ownership and community benefit.

4.5 Questions

Q4.1: Are the policies identified in Table 4.1 appropriate for inclusion in the Planning Statement policy appraisal or are there any others that should be considered?
Q4.2: Are there any other local material considerations of relevance to the proposed Development which should be considered?

5 Landscape & Visual Amenity

5.1 Introduction

150. The Landscape and Visual Impact Assessment (LVIA) will consider direct and indirect effects on landscape resources, landscape character, designated landscapes and wild land. It will examine the nature and extent of effects on existing views and visual amenity. The effects of the proposed Development, as well as the ancillary infrastructure (access track, masts, transformers etc.) will be assessed during the construction and operational phases of the proposed Development. The LVIA will also consider cumulative effects i.e. the incremental effects of the proposed Development in combination with other renewable energy developments. The effects of solar glint & glare will be assessed as a discrete topic in the EIA Report (see **Chapter 13**)

151. The LVIA will inform modifications and refinements to the layout design and will be undertaken following the approach set out in Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3). The assessment will also draw upon current good practice guidance issued by SNH.

5.2 Existing Conditions

5.2.1 Baseline Description

152. The Proposed Development lies within an area largely comprising commercial forestry and surrounded by more open moorland at the northern end of the Kintyre peninsula. The landform is defined by a series of low hills ranging between approximately 270-350m AOD forming a bowl with numerous minor watercourses draining into the Skipness River that flows through and out of the southern part of the Site. Access is relatively limited and confined to forestry tracks although the Kintyre Way long distance recreational route passes broadly north-south through the Site, running alongside the Skipness River and linking the two closest settlements of Skipness (1.2 km south) and Tarbert (1.1 km north).

5.2.2 Landscape Character

153. Local landscape character is described in the SNH Landscape Character Assessment in Scotland digital map-based character assessment (2019) and the Argyll and Bute Landscape Wind Energy Capacity Study (2017). The Proposed Development is located wholly within Upland Forest Moor Mosaic (A&BC 2017) landscape character type (LCT) or LCT 39 Plateau Moor and Forest – Argyll (SNH 2019).

154. This LCT is extensive, covering the majority of the northern Kintyre peninsula. It is broadly described as an upland plateau with an extensive, large scale mosaic of open moorland and forestry occasionally cut through by narrow glens. There are few buildings, limited access and there is little in the way of enclosure or field boundaries except for some small pastures associated with farms and houses on lower hill slopes at the transition with adjacent character types or within the narrow glens.

5.2.3 Visual Amenity

155. As shown on **Figure 5.1**, the Site is located on the northern end of the Kintyre peninsula and around 5 km north east of the operational Freasdail Windfarm. It is located south of Tarbert, east of the A83 (between Tarbert and Whitehouse), north east of the B8001 and north of the village of Skipness. The Site itself is within commercial forestry on the upland plateau which encompasses seven small hills: Cruach an t-Sorchain (343m AOD), Cnoc an Fhreacadain (237m) Cruach Bhreac (351m), Cruach Doire Leithe (377m), Cruach na Machrach (346m), Guallan Mhor (303m) and Meall Donn (276m).

156. There is limited visual connection with the settled coastal margin on the western side of the Kintyre peninsula and visibility is limited due to the steepness of the slopes and intervening forestry. The majority of settlement is located on the coasts with limited access to the central part of the peninsula although there is some dispersed settlement along the B8001 which follows a glen dissecting the plateau to the south west of the Site. The location at the end of the of the peninsula give the Site a strong visual relationship with surrounding waterways, lochs, peninsulas and islands within the Firth of Clyde.

157. The Kintryre Way long-distance recreational route passes through the Site on forest tracks as it runs between Tarbert and Skipness before crossing the peninsula and plateau core as it heads south. National Cycle Network (NCN) Route 78 follows the B842 along the eastern side of the Kintyre peninsula before crossing it on the B8001, passing to the west of the Site, and joining the A83 before heading further west around the coast of the Knapdale peninsula.

158. There are other renewable energy developments located along the core of the peninsula, including operational, consented and proposed in planning.

5.2.4 Designations:

159. The Site is not covered by any known international, national, regional or local landscape-related planning designations. However, landscape designations and other areas of varying landscape importance are present in the wider area (see **Figure 5.1**). This includes a number of National Scenic Areas (NSAs), Areas of Panoramic Quality (APQs) and Special Landscape Areas (SLAs).

160. Wild Land is considered separately.

5.3 Scope of the Assessment

161. The proposed Development has the potential for significant effects upon landscape character and the visual receptors. A Landscape and Visual Impact Assessment (LVIA) will be undertaken to establish potential significant effects of the proposed Development on the landscape resource and visual amenity in accordance with the 3rd Edition of the Guidelines for Landscape and Visual Impact Assessment (2013).

162. A Zone of Theoretical Visibility (ZTV) will be used to inform the LVIA. For the purpose of this scoping process, ZTVs have been based on initial design options.

163. The key aspects of the LVIA are set out below.

5.3.1 Study Area

164. An initial study area of 45 km from the outer turbines is proposed to assess the relationship between the proposed Development and the wider area in terms of potential significant effects on landscape character and visual amenity. The initial study area would be determined once turbine height is known and would be in line with SNH Guidance 'Visual Representation of Wind Farms Version 2.2, (SNH, 2017). For the purpose of identifying, mapping and assessing the likely significant effects of the proposed Development on the landscape of the Site and its immediate surroundings, a 'detailed study area' from the outer turbines will be defined. This detailed study area will be informed through on-going assessment work but is likely to be between 15 km and 20 km.

5.3.2 Landscape and Seascape Assessment

165. The landscape assessment will use the Argyll and Bute Landscape Wind Energy Capacity Study (2017) as the baseline for landscape character within the A&BC area but will also draw on the latest, more recent SNH online National Landscape Character Assessment. The SNH assessment will be used as the baseline for those areas outside of A&BC.

166. As stated in the SNH Guidance Note: Coastal Character Assessment (version 1a, July 2018), the focus of seascape assessment in Scotland is on the coast and its interaction with sea and hinterland; relationships that are quite distinctive in the Scottish context, especially on the west coast. The seascape assessment will use the SNH Coastal Character Map (2010) as the baseline for coastal/seascape character.

167. When the extent of mitigation for the proposed Development is known, further consultation will take place regarding refining which landscape and seascape receptors should be included in the assessment and those which can be scoped out as the impact is unlikely to be significant.

5.3.3 Visual Assessment

168. The assessment will be a receptor-based assessment. The assessment will include potential effects on settlement areas and routes, including roads, railway lines, cycle routes and ferry routes, within the detailed study area, where potential visibility is indicated by the ZTV. The assessment will focus on those receptors where there may be the potential for significant effects, which is likely to be those within 15-20 km of the proposed Development.

5.3.4 Designated Landscapes

169. The assessment of effects on designated landscapes would be based on the potential impact on its special qualities. The following table includes the designations that fall within the study area and a preliminary assessment regarding which would be included within the assessment and which are proposed to be scoped out, as significant effects would be unlikely.

Table 7.1: Designated Landscapes with the Study Area

Name	Designation	Approximate Distance from the Site (Scoping)	Assessment to be included within the LVIA?
North Arran NSA	National Scenic Area	7 km	Yes, due to proximity and potential impacts.
Kyles of Bute NSA	National Scenic Area	13 km	No, due to separation distance; limited extent of theoretical intervisibility with or around this area; and the limited potential effect on the Special Qualities. The proposed Development is unlikely to have a significant effect on the "*Ever-changing vista"* which notes views to "*Arran, or east to the hilly moorland and coastal settlements of North Ayrshire"* or "*to the undeveloped moorland of northern Bute and beyond*".
Knapdale NSA	National Scenic Area	14 km	No, there is no theoretical intervisibility within this area.
Jura NSA	National Scenic Area	30 km	No, due to separation distance and limited effect on the Special Qualities at this distance.
Loch Lomond and the Trossachs National Park	National Park	28 km	No, due to separation distance; limited extent of theoretical intervisibility with or around this area; and therefore limited effect on the Special Qualities.
Bute and South Cowal APQ	Area of Panoramic Quality (Argyll and Bute Council)	5 km	Yes, due to proximity and potential impacts
Knapdale/Melfort APQ	Area of Panoramic Quality (Argyll and Bute Council)	9 km	Yes, due to proximity and potential impacts
West Kintyre (Coast) APQ	Area of Panoramic Quality (Argyll and Bute Council)	12 km	No, due to very limited locations where there would be intervisibility with this area, such as at Dun Skeig or small area on the A83 west of Clachan. However to due to the limited geographic extent effects, significant effects would be unlikely.
East Loch Fyne (Coast) APQ	Area of Panoramic Quality (Argyll and Bute Council)	19 km	No, due to lack of theoretical intervisibility with this area.

Name	Designation	Approximate Distance from the Site (Scoping)	Assessment to be included within the LVIA?
West Loch Fyne (Coast) APQ	Area of Panoramic Quality (Argyll and Bute Council)	20 km	No, due to separation distance and limited extent of actual intervisibility with this area due to tree cover.
East Kintyre (Coast) APQ	Area of Panoramic Quality (Argyll and Bute Council)	23 km	No, due to separation distance and limited extent of theoretical intervisibility with this area.
Jura APQ	Area of Panoramic Quality (Argyll and Bute Council)	33 km	No, due to separation distance and limited potential for significant effects.
South and East Islay APQ	Area of Panoramic Quality (Argyll and Bute Council)	41 km	No, due to separation distance and limited potential for significant effects.
Loch Long (Coast) APQ	Area of Panoramic Quality (Argyll and Bute Council)	44 km	No, due to due to lack of theoretical intervisibility with this area.
North Arran SLA	Special Landscape Area (North Ayrshire Council)	9 km	Yes, but likely to be covered under effects for the NSA.
Little Cumbrae SLA	Special Landscape Area (North Ayrshire Council)	25 km	No, due to separation distance and limited potential for significant effects.
Great Cumbrae SLA	Special Landscape Area (North Ayrshire Council)	25 km	No, due to separation distance and limited potential for significant effects.
Mainland SLA	Special Landscape Area (North Ayrshire Council)	28 km	No, due to separation distance and limited potential for significant effects.
Holy Island LSA	Special Landscape Area (North Ayrshire Council)	33 km	No, due to due to lack of theoretical intervisibility with this area.
Horse Isle SLA	Special Landscape Area (North Ayrshire Council)	35 km	No, due to separation distance and limited potential for significant effects.
Pladda	Special Landscape Area (North Ayrshire Council)	43 km	No, due to due to lack of theoretical intervisibility with this area.

170. There would be no theoretical visibility with any Gardens and Designed Landscapes and therefore these receptors are proposed to be scoped out the assessment.

5.3.5 Viewpoints

171. The list of viewpoint locations proposed to be used in the assessment of the proposed Development are detailed in **Table 7.2** below and illustrated on **Figure 5.2** and **Figure 5.3** Some viewpoints, particularly those more distant summits may be illustrated with wireframes only. Viewpoints have not been 'ground truthed', so grid refs are approximate and locations may be microsited to obtain the most representative view or greatest extent of views.

Table 7.2: Proposed Assessment Viewpoints

VP	Location	Grid Reference	Distance/ Direction	Reason for Inclusion
1	Kintyre Way at Skipness	190098, 657733	2.7 km S	Settlement, users of long distance route
2	B8001 south west of Site	185797, 658886	3.3 km SW	Road users, NCN 78
3	B842, Claonaig Bay	186812, 656125	5.0 km SW	Road users, dispersed settlement, NCN 78
4	Portavadie	192461, 669632	6.9 km N	Road/ferry users, APQ
5	Kintyre Way at Cruach nam Fiadh	182762, 655778	7.6 km SW	Users of long distance route
6	Ardlamont to Ardlamont Point	197256, 665848	7.8 km NE	Road users, dispersed settlement, APQ
7	Lochranza, Arran	192654, 651026	9.8 km S	Settlement, NSA/SLA
8	A83 at Meall Mhor	186302, 674013	11.4 km N	Road users
9	B842, Crossaig	182893, 649882	12.3 km SW	Road users, NCN 78
10	Meall Mhor	183621, 674686	12.7 km NW	Recreational users
11	Thundergay, Arran	175517, 655768	14.0 km S	Settlement, NSA/SLA
12	Ettrick Bay, Bute	204267, 665606	14.2 km E	Recreational users
13	Tarmore Hill, Bute	205097, 658793	14.4 km E	Recreational users, specific viewpoint
14	B8024, high point south of Kilberry	172368, 661628	15.2 km W	Road users, APQ
15	Goatfell, Arran	199139, 641544	21.1 km SE	Recreational users, specific viewpoint
16	Northern point of Gigha	166557, 654548	22.5 km SW	Recreational users, nearby ferry routes
17	Lochgilphead	186177, 687929	25.0 km N	Settlement, recreational users of Loch Fyne

172. A number of other potential viewpoints within the study area were considered in the initial review and subsequently excluded from consideration as follows:

- **Kintyre Way north of site** – the route runs over an area of more open land immediately north of the Site where proposed turbines are likely to be seen in open view. Views of large scale turbines at close proximity would result in Large scale visual changes however this can established without the need for a viewpoint here;
- **B8024 along West Loch Tarbet** – the ZTV indicates limited blade tip visibility here, combined with extensive localised vegetation along the road and lochside it is not anticipated that there would be any notable visibility here;
- **A83 north of Tarbert** – the ZTV indicates extremely limited blade tip visibility on the section immediately north of Tarbert. The extent of roadside vegetation and narrowness of the road corridor mean views out are limited and there would be little opportunity for visibility of the proposed Development, the closest point on the A83 north of Tarbert with notable views is represented by Viewpoint 8;
- **A83 south of Tarbert** – the ZTV indicates limited visibility along this stretch of the route and often only blade tips. The extent of roadside vegetation and relative narrowness of the road corridor mean views out are somewhat limited and there would be little opportunity for visibility of the proposed Development; and
- **Surrounding ferry routes** – due to limitations of accurately locating and photographing viewpoints from moving ferries these have been excluded from the selection of viewpoints, however, a number of the ferry ports or other nearby positions are included as viewpoints and other visual material will be provided to support the assessment of ferry route users (see below).

5.3.6 Visualisations

173. The assessment will be supported by a series of photomontages and wireframes from agreed viewpoint locations. Visualisations from each viewpoint will be prepared in accordance with SNH, Visual Representation of Windfarms: Version 2.2, 2017.

174. Photomontages will be prepared for viewpoints within a 20 km radius. Solar arrays and ancillary elements will only be shown from close viewpoints where needed, as it is considered that from most viewpoints these ancillary elements would only form a minor element of the entire development.

175. Additional wirelines and photography will be provided to illustrate views from nearby ferry routes however these will not be included as viewpoints and full SNH standard visualisations will not be provided due to practical limitations of accurately locating and photographing viewpoints from moving ferries.

5.3.7 Wild Land Assessment

176. The closest Wild Land Area (WLA) to the Site is WLA 03: North Arran, approximately 12.5 km south of the Site. The ZTV illustrates that there would be limited potential intervisibility of the proposed Development within the WLA and this is largely confined to hill summits at its northern end.

Table 7.3: The Key Attributes and Qualities of the North Arran WLA

Key attributes and qualities	Potential effect of the proposed Development
A readily accessible area, but with strong wild land attributes, especially within the remote interior	There would be no effect on this attribute/quality, the accessibility of this area would remain unaffected.
The contrast in experience between the rugged east and smoother and more remote west mountain ranges	There would be no effect on this attribute/quality, this contrast of experience would remain as existing.
A landscape which is well-defined, whose rugged qualities are widely experienced from the surrounding areas	Given the separation distance of over 10 km, there would be no effect on this attribute/quality, as this landscape would remain well-defined and rugged as experience from surrounding areas.
A strong sense of naturalness, with unmodified catchment systems and little intensive land use within the wild land area	There would be no effect on this attribute/quality, this would remain as existing.

177. Views from here would feature other, closer operational and consented wind farms on the Kintyre peninsula as well other human influences associated with coastal settlement around the Firth of Clyde and Kilbrannan Sound and relatively heavy water traffic. There would be a clear separation between the North Arran WLA and the proposed Development on the Kintyre peninsula.

178. This WLA coincides with both the North Arran NSA and North Arran SLA designations and the effects on scenic qualities of the area will be included within the assessment of these. It is not anticipated however that the key attributes or wildness qualities of the WLA would be significantly affected and therefore no additional wild land assessment is proposed. Other areas of wild land are over 30 km from the proposed Development and would experience no effects.

5.3.8 Night Time Assessment

179. This is an emerging area of assessment, but at present turbines of 150m or greater tip height would require visible aviation lighting. A Lighting Strategy is currently being developed with an Aviation specialist in consultation with the CAA for this proposed Development. It is expected that the directional intensity / shielding of lights and reduced intensity of lights (from 2000 cd to 200 cd) would be included as mitigation. In additional to this, there is emerging acceptance of cardinal or perimeter lighting schemes on suitable sites. If this is acceptable on this site, this would reduce the overall number of turbines which require lighting and will likely form the basis of the Lighting Strategy. We will also be investigating other forms of mitigation such as radar or transponder activated lighting and siting/design considerations.

180. The agreed Lighting Strategy will form the basis of the assessment and visual material present. An assessment of night-time impacts on landscape and visual receptors will be carried out and presented as a separate appendix in the LVIA. Further

consultation will be undertaken to establish the scope and visual material to support this assessment, when more is known regarding the mitigation which might be included in the Lighting Strategy.

5.3.9 Cumulative Assessment

181. In line with SNH guidance 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (SNH, 2012) the assessment will consider other wind farms within the LVIA study area including those which are operational, consented and those for which an application has been submitted but which are yet to be determined. Schemes in scoping will only be included by exception where there is specific justification for doing so.

182. An initial cumulative search area of 45 km from the proposed Development will be undertaken and all other wind farm developments identified. These will include all operational schemes, those schemes under construction, consented schemes, those schemes in the planning system as valid applications (including schemes at appeal) and those at the scoping stage within this search area. Recently withdrawn sites will not be included, and those sites registered with a Proposal of Application Notice (PAN), are not finalised applications and will therefore not be included as a valid application but will be included as a pre-application/scoping scheme. Turbines below 50m and single turbine developments are only considered within a 5 km radius of the proposed Development and are scoped out of the initial assessment and the CLVIA beyond this distance.

183. The scope of the cumulative assessment will be agreed with consultees nearer the time of the submission, usually within 12 weeks of submission. The proposed scope of the cumulative assessment will focus on where there may be likely significant effects which may influence the outcome of the consenting process.

5.3.10 Residential Visual Amenity Assessment

184. It is proposed that a separate assessment of the effects on residential visual amenity will be undertaken as a standalone appendix/document. This will be undertaken in line with Landscape Institute Technical Guidance Note 2/19: Residential Visual Amenity Assessment (RVAA); for the purposes of the RVAA, we propose a 2 km study area from the outermost turbines.

5.3.11 Guidance

185. The LVIA will be prepared with reference to the following:

- Landscape Institute (LI) and the Institute for Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA 3);
- Landscape Institute (2019) Technical Guidance Note 2/19 Residential Visual Amenity Assessment;
- Landscape Institute (2019) Technical Guidance Note 6/19 Visual Representation of Development Proposals;
- Scottish Natural Heritage (2007, updated in 2014 and the Consultation Draft 2017) Assessing impacts on Wild Land Areas - Technical Guidance;
- Scottish Natural Heritage (2010) The special qualities of the National Scenic Areas, SNH Commissioned Report No. 374;
- Scottish Natural Heritage (2012) Assessing the Cumulative Impact of Onshore Wind turbine developments;
- Scottish Natural Heritage (2015) Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations;
- Scottish Natural Heritage (2017) Visual Representation of Wind Farms (Version 2.2);
- Scottish Natural Heritage (2017) Siting and Designing Wind Farms in the Landscape (Version 3);
- Scottish Natural Heritage (2019) Landscape Character Assessment in Scotland digital map based LCA;
- Natural England (2014) An Approach to Landscape Character Assessment;
- Natural England (2019) An Approach to Landscape Sensitivity Assessment; and
- Forestry Commission (2017) The UK Forestry Standard.
- Argyll and Bute Council (2017) Argyll and Bute Landscape Wind Energy Capacity Study.

5.4 Questions

Q5.1: Is this an acceptable baseline for assessment of landscape and seascape effects (para. 161-163)?
Q5.2: Is this an acceptable scope of assessment of designated areas (Table 7.1)?
Q5.3: Are the proposed viewpoints (Table 7.2) adequate?
Q5.4: Is the scope of visualisations (para. 169-171) adequate?
Q5.5: Is it acceptable for Wild Land Assessment to be scoped out of the EIA?
Q5.6: Is the search area and outline parameters (para. 177-179) for the cumulative assessment adequate?
Q5.7: Is the study area for the RVAA (para. 180) adequate?

6 Ecology

6.1 Introduction

186. This section of the EIA Scoping Report details the proposed approach to baseline ecological information gathering and assessment, in accordance with current best practice guidance. The Ecology Chapter of the EIA Report will assess the potential effects of the proposed Development on important ecological features and will detail the proposed mitigation and/or compensation measures required to avoid, minimise, restore or offset adverse effects and demonstrate net gain.

6.2 Preliminary Baseline Conditions

6.2.1 Designated Sites for Nature Conservation

187. **Table 6.1** and **Figure 6.1** identify statutory designated sites with ecological interests located within 10 km of the Site.

188. Sites with ornithological qualifying interests are detailed and discussed separately in Section 7 'Ornithology' of this EIA Scoping Report.

189. The eastern Loch Fyne coastal extent of the Site forms part of the Tarbet Wood Special Area of Conservation (SAC) and Tarbert to Skipness Coast Site of Special Scientific Interest (SSSI), designated by virtue of their upland oak woodland and bryophyte assemblage interests. No renewable energy development infrastructure is proposed within the designation boundaries.

Table 6.1: Designated sites for nature conservation with ecological interests located within 10 km of the Site.

Site Name	Designation	Distance and Direction from Site	Designated Ecological Features
Tarbert to Skipness Coast	SSSI	Onsite	Bryophyte assemblage Upland oak woodland
Tarbert Woods	SAC	Onsite	Western acidic oak woodland
Claonaig Wood	SSSI	4.2 south west	Upland oak woodland
Artilligan and Abhainn Strathain Burns	SSSI	6.1 north	Upland oak woodland
Ardpatrick and Dunmore Woods	SSSI	7 west	Upland oak woodland
Arran Northern Mountains	SSSI	8.2 south	Beetle assemblage Dragonfly assemblage Upland (habitat) assemblage Upland birch woodland Vascular plant assemblage

6.2.2 Habitats and Vegetation

190. Preliminary surveys to establish baseline terrestrial habitat conditions at the Site and identify vegetation communities of notable importance including potential habitats listed on Annex 1 of the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. Habitats Directive) and as UKBAP Priority Habitats, were undertaken in 2019 following industry standard survey guidance for Phase 1 habitat (JNCC, 2010) and National Vegetation Classification (NVC) survey (Rodwell, 2006).

191. In summary, the Site is known to primarily comprise the commercial coniferous plantation woodlands of the Corranbuie and Skipness Forests, interspersed with pockets wet and dry heathland and grasslands. The following predominant Phase 1 habitat types have been recorded:

- A1.1.1 – Broad-leaved woodland semi-natural;
- A1.2.2 – Coniferous plantation woodland;

- A1.2.1 – coniferous woodland semi-natural;
- A4 – Recently felled woodland;
- C1/C1.1 – Bracken/Continuous bracken;
- B1.2 – Acid grassland semi-improved;
- B5 - Marsh/marshy grassland;
- D2 - Wet dwarf shrub heath;
- D1 - Dry dwarf shrub heath;
- E1.7 - Wet modified bog;
- E1.8 - Dry modified bog;
- E2 - Flush and spring; and,
- G1 - Standing water.

192. Full details of baseline habitats and vegetation conditions will be presented within the EIA Report.

193. Where required, terrestrial habitat and vegetation surveys will be updated prior to assessment in response to changes in scheme design. This will seek to ensure compliance with current SNH guidance (2018a) and provision of sufficient information in accordance with Scottish Environmental Protection Agency (SEPA) guidance, with regards the identification of ground water dependent terrestrial ecosystems (GWDTE) for subsequent hydrological assessment.

6.2.3 Protected Species – Bats

194. Surveys to establish the bat species assemblage utilising the application boundary and the spatial and temporal distribution of activity, were undertaken during the 2019 summer and autumn activity periods, with reference to current SNH guidance (2019a) and employed the use of ground-level activity surveys.

195. A total of 20 automated monitoring stations were used during the survey period, focusing on areas of the application boundary where turbines were most likely to be located. Stations were positioned at preliminary turbine locations where known, with the remainder stratified across the application boundary based on the availability and variation of habitats and topographical features, including nearby open outwith the dominant woodland habitats, to provide an indication of how bats may adapt to and use new habitat features created as a result of the proposed Development (e.g. through felling or key-holing where required), in accordance with current SNH guidance (2019a).

196. In summary, surveys undertaken during the 2019 summer and autumn activity periods recorded activity characteristic of a narrow range of species including:

- Common pipistrelle;
- Soprano pipistrelle;
- Brown long-eared bat;
- Natter's bat;
- Noctule; and
- *Myotis* sp.

197. The majority of activity recorded was attributable to common and soprano pipistrelle.

198. Full details of baseline survey effort, bat activity levels including Ecobat analysis, will be presented within the EIA Report.

6.3 Proposed Baseline Survey and Assessment Methodologies

Full details of baseline studies, field surveys, consultation and the approach to assessment will be provided within the EIA Report.

6.3.1 Key Guidance

199. The following key pieces best practice guidance will be used to inform the scope and approach to baseline ecological information gathering, interpretation and assessment:

- Argyll and Bute Council (2017) A Biodiversity Technical Note for Planners and Developments. Argyll and Bute Planning Service;
- Chanin P (2003) Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No 10. English Nature, Peterborough;
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester;
- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London;
- Cresswell, W. J., Birks, J. D. S., Dean, M., Pacheco, M., Trewhella, W. J., Wells, D. and Wray, S. (2012) UK BAP Mammals Interim Guidance for Survey Methodologies, Impact Assessment and Mitigations. The Mammal Society, Southampton;
- Dean, M., Strachan, R., Gow, D. and Andrew, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London;
- Harris S, Cresswell P and Jefferies D (1989) Surveying Badgers, Mammal Society;
- JNCC (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit: Revised Re-print. Joint Nature Conservation Committee, Peterborough;
- McInerny, C. & Minting, P. (2016) The Amphibians & Reptiles of Scotland. The Glasgow Natural History Society, Glasgow;\
- Rodwell, J.S. (2006) National Vegetation Classification: Users' Handbook. Joint Nature Conservation Committee, Peterborough;
- Rodwell, J. S., (1991, 1992, 1998, 2000) British Plant Communities. Vol 1-5. JNCC, Cambridge;
- SEPA (2017) Land Use Planning System Guidance Note 4: Planning Guidance on On-shore Windfarm Developments. Scottish Environment Protection Agency;
- SEPA (2014) Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Windfarm Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosytems. Scottish Environment Protection Agency;
- SFCC (2007). Habitat Surveys Training Course Manual. Scottish Fisheries Co-ordination Centre, Pitlochry;
- SNH (2019a) Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation. Prepared jointly by Scottish Natural Heritage, Natural England, Natural Resources Wales, RenewableUK, ScottishPower Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (BCT) with input from other key stakeholders;
- SNH (2019b) Standard Advice for Planning Consultants: Protected Species. Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species;
- SNH (2018a) SNH General Pre-application/Scoping Advice to Developers of Onshore Wind Farms. Scottish Natural Heritage, Inverness;
- SNH (2018b) Wildcat Survey Methods. SNH, Inverness;
- SNH (2018c) Best Practice Badger Survey Guidance Note. SNH, Inverness;
- SNH (2016) Planning for development: What to consider and include in deer assessments and management at development sites. SNH, Inverness; and
- SNH (2012) Assessing the Cumulative Impact of Onshore Wind Energy Developments. Scottish Natural Heritage, Inverness.

6.3.2 Proposed Study Area

200. Study areas for baseline information gathering will be based upon the application boundary and established in accordance with best practice guidance for ecological features. Study areas adopted will be updated over the course of the EIA to account for changes in scheme design and where permitted land access allows.

6.3.3 Desk Study

201. A desk study will be undertaken to identify and review existing ecological information pertaining to the Site and surrounding area. The following key sources will be consulted to obtain existing information for non-statutory designated sites and protected and notable species out to 2 km of the Site (extended to 10 km for information relating to bat species):

- SNH Sitelink;
- SNH;
- Scotland's Environment Map https://map.environment.gov.scot/sewebmap/;
- Forestry and Land Scotland (FLS);
- Argyll Biological Records Centre;
- Argyll Fisheries Trust;
- Scottish Badgers;
- Scottish Wildcat Action; and
- Saving Scotland's Red Squirrels (Scottish Squirrels).

202. Publicly available EIA documentation for any relevant windfarm or hydro scheme developments, the Corranbuie and Skipness Land Management Plan (LMP) 2017-2016 (2016) together with additional peer reviewed literature and publicly available resources will also be reviewed where relevant.

6.3.4 Field Surveys

203. The potential to complete proposed field surveys in 2020 may be compromised by the Covid-19 virus outbreak, and, in that event alternative approaches to baseline information gathering to inform the design and assessment of the proposed Development will be identified in consultation with SNH and additional primary interest bodies. Any variation to the best practice guidance and survey methodologies detailed herein will be submitted in writing to SNH in advance of commencement. If field surveys can be completed as planned then the methods that will be used are outlined below.

6.3.4.1 Habitats and Vegetation

204. Where required to account for changes in scheme design and ensure the collection of sufficiently adequate data to inform the assessment of effects upon habitats and vegetation, baseline habitat and vegetation surveys shall be updated or otherwise validated prior to submission to ensure they remain representative of conditions at the Site in accordance with SNH guidance (2018).

205. Survey updates and validation shall be undertaken following industry standard guidance in relation to Phase 1 habitat (JNCC, 2000) and NVC survey methodologies (Rodwell, 2006; 1991, 1992, 1998 and 2000). Survey coverage shall include terrestrial habitats within the Site likely to be affected by the proposed Development, extended to include the potential for distant effects and micrositing out to at least 250m as access permissions allow. This will ensure compliance with SEPA guidance (2014) with respect to the identification of GWDTEs required for subsequent hydrological assessment detailed in Section 9 of this EIA Scoping Report.

6.3.4.2 Protected Species

206. The woodland habitats of the Site are likely to support an associated terrestrial mammal assemblage, including badger *Meles meles* and red squirrel *Sciurus vulgaris*, with the potential for pine marten *Martes marten*.

207. Watercourses within and intersecting the Site may provide suitable opportunities for otter *Lutra lutra* and water vole *Arvicola amphibius* and there is potential for fish spawning habitat also.

6.3.4.2.1 Pine Marten

208. The woodland plantations provide suitable opportunities for pine marten, with some use of open moorland habitats also possible.

209. A survey for pine marten will therefore be undertaken in accordance SNH guidance (2019b), with reference to good practice survey methodologies (e.g. Cresswell *et al*., 2012). The survey will comprise a walkover search for signs of pine marten presence and potential den sites within and out to 250m of the proposed Development as access allows.

6.3.4.2.2 Badger

210. Sett building opportunities for badger are likely to be present within woodland habitats of the Site and the Corranbuie and Skipness Land Management Plan (2017-2026) identifies the known presence of an active badger sett located within Corranbuie forest.

211. A survey for badger will therefore be undertaken in accordance with SNH guidance (SNH, 2019b) with reference to good practice survey methodologies (e.g. Harris *et al*., 1989; SNH, 2018c). The survey will comprise a walkover search for signs of badger presence and set locations within 100m of the proposed Development, as access allows.

6.3.4.2.3 Otter

212. The woodland and watercourses of the Site are likely to provide suitable foraging, commuting and holt opportunities for otter and the Corranbuie and Skipness Land Management Plan (2017-2026) identifies the species known presence locally.

213. A survey for otter will be undertaken in accordance with SNH guidance (2019b), with reference to good practice survey methodologies (e.g. Channin, 2003). The survey will comprise a walkover search along watercourse sections within 200m of the proposed Development for signs of otter presence and potential holt locations, as access allows.

214. Observations of possible holt locations made during badger surveys will also be recorded, with further targeted surveys of terrestrial habitats within the Site which may support inland holt locations, undertaken where identified.

6.3.4.2.4 Water Vole

215. The watercourses within the Site may provide suitable habitat for water vole. A survey for water voles will therefore be undertaken in accordance with SNH guidance (SNH, 2019b) with reference to good practice survey methodologies (e.g. Dean *et al*., 2016). The survey will comprise a walkover search of suitable watercourse sections within 50m of the proposed Development, for signs of water vole presence.

6.3.4.2.5 Wildcat

216. The Site is not located in proximity to any Wildcat Priority Area. Consultation will however, be undertaken with Scottish Wildcat Action to identify any existing species records within proximity to the Site and the requirement for any formal survey.

217. Should consultation identify the absence of recent records and establish the proposed Development is located outside the species current range, wildcat shall be scoped out from further consideration within the EIA.

6.3.4.2.6 Red Squirrel

218. The Corranbuie and Skipness Land Management Plan (2017-2026) details the known presence of red squirrel within Corranbuie Forest and within the coastal woodlands along West Loch Tarbert. A preliminary review of Saving Scotland's Red Squirrels species sighting records also identifies the known recent presence of the species within the coastal woodlands of West Loch Tarbert, to which the woodlands within the Site are connected.

219. On the basis of known presence, targeted surveys for red squirrel are not proposed, in line with SNH guidance (SNH, 2019). The EIA Report would detail the approach to appropriate mitigation and requirement for pre-construction surveys where necessary.

6.3.4.2.7 Fish

220. A fish habitat assessment will be undertaken of all watercourses intersecting the application boundary following industry standard guidance (SFCC, 2007) extended to include the suitability of habitats for freshwater pearl mussel *Margaritifera margaritifera* in accordance with SNH guidance (SNH, 2019b).

221. It is considered that the requirement for further detailed fish surveys to inform an assessment of effects upon fish need not be required providing the implementation of good practice scheme design and mitigation measures in consultation with SNH and other primary interest groups, to avoid and/or minimise the potential for pollutant impacts upon aquatic habitats and ensure the free passage of fish within the application site is maintained.

6.3.4.3 Protected Species - Bats

222. Where required, bat activity surveys shallbe updated prior to assessment in response to changes in project design and to capture a spring activity period, to allow a robust assessment of the potential impacts upon bats and compliance with the approach to baseline information gathering detailed within SNH guidance (2019a).

223. Survey timing and methodology may however, be varied in response to the Covid-19 virus outbreak (as detailed above).

224. The desk study shall include a review of existing available information on bats relevant to the Site including a review of aerial imagery to establish habitats and features of potential interest to bats and collation of relevant bat records within 10 km of the Site. The location of the Site in relation to known species ranges will also be established together with relevant information and the potential for interactions with other wind energy developments within 10 km.

225. Where required, updated bat surveys will seek to further establish the species assemblage using the Site, the locations of roosts, the spatial and temporal distribution of activity and the extent of commuting or foraging habitats used by bats, which may be affected by the proposed Development:

- Bat Roost Suitability Surveys – a ground-level survey for features that could support bat roosts within 200m, plus rotor radius, of the application boundary will be undertaken to inform the requirement for further surveys (i.e. presence/absence surveys) in consultation with SNH; and
- Ground-level Static Surveys – ground-level automated surveys have been undertaken to establish the bat species assemblage using the Site and the distribution of activity within the Site during a summer and autumn activity period in 2019. Where required, further survey will therefore be undertaken during the next appropriate spring activity period in accordance with the methodology and required effort in accordance with SNH guidance (2019a). The same number of static detectors (20) will be used as during the summer and autumn surveys, and the same locations will be used, to ensure consistency. The static detectors will be deployed at ground-level and left out for a period of at least 20 nights to increase the probability of achieving 10 suitable nights. A weather station will be deployed with the detectors to monitor 'suitable weather conditions'. All bat data will be analysed through Kaleidoscope (Wildlife Acoustics) software and manually checked by an experienced ecologist. The data will be uploaded onto EcoBat and the output from this will form the basis of the impact assessment concerning bats.

226. Supplementary survey methods including walked transects, vantage point surveys and monitoring at height are not proposed.

6.3.4.4 Additional Surveys

227. The use of additional survey techniques (e.g. camera trapping) to further establish the presence of protected species (e.g. occupancy of den sites) and inform mitigation requirements are not currently proposed, but would be discussed with SNH and relevant primary interest groups, should the requirement for such be identified.

228. In accordance with SNH guidance (2018a) there are some species groups which, providing the implementation of suitable mitigation measures, are unlikely to be subject to significant effects as a result of windfarm developments. As such, they do not require surveys to inform an EIA. This includes invertebrates, reptiles and amphibians but excludes additional European Protected Species (EPS).

229. The only additional EPS with some potential to be present within the Site is great-crested newt *Triturus cristatus*, which is known to be present on the Kintyre peninsular (McInerny & Minting, 2016). Formal survey is not currently proposed however, in the event suitable breeding water bodies are identified and may be impacted by the proposed Development, the requirement for survey to establish species presence will be discussed in consultation with SNH.

230. As of the 1 May 2019 beavers are also included on the list of EPS afforded protection under the provisions of The Conservation (Natural Habitats, &c.) Regulations (1994) (as amended), with the populations at Knapdale and Tayside being allowed to expand naturally. The presence of individuals from the Knapdale populations within the Site is considered highly

unlikely however, consultation will be undertaken with the SNH Beaver Project Manager to identify the potential for the species to occur locally, the requirement for survey or any requirement for consideration within the EIA Report.

231. No additional surveys are proposed.

6.3.5 Assessment

232. Impact assessment presented within the EIA report for ecological and ornithological features will be based on current Chartered Institute of Ecological and Environmental Management (CIEEM) guidance (2018).

233. The assessment of potential effects of bats as a result of the proposed Development will be undertaken in accordance with SNH (2019) guidelines.

234. The process assessment process will include the following stages:

- determination and evaluation of important ecological features;
- identification and characterisation of impacts;
- outline of mitigating measures to avoid and reduce significant impacts;
- assessment of the significance of any residual effects after such measures;
- identification of appropriate compensation measures to offset significant residual effects; and
- identification of opportunities for ecological enhancement.

6.3.5.1 Determining Importance

235. The assessment within the EIA Report will only assess in detail impacts upon important ecological features i.e. those that are considered important and potentially significantly affected by the proposed Development. A detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts will not be undertaken and justification for 'scoping out' provided.

236. Relevant European, national and local legislation, policy and guidance will be referred to in order to determine the importance (or 'sensitivity') of ecological features. In addition, importance will also be determined using professional judgement, specialist consultation advice and the results of baseline surveys and the importance of features within the context of the geographical area.

237. Importance will not necessarily relate solely to the level of legal protection that a feature receives and ecological features may be important for a variety of reasons, such as their connectivity to a designated site and the rarity of species or the geographical location of species relative to their known range.

238. The importance of an ecological feature will be defined in a geographical context from 'Local' to 'International'.

6.3.5.2 Identification and Characterisation of Impacts

239. The identification and characterisation of impacts on important ecological features will be undertaken in accordance with CIEEM guidelines (2018) with reference made to magnitude (e.g. area or number of individuals to be impacted), extent, duration and reversibility as appropriate.

240. Impacts will be considered during the construction, operational and decommissioning phases of the proposed Development and will be assessed on the basis that a clearly defined range of avoidance and standard good practice measures are implemented.

6.3.5.2.1 Potential Impacts

241. The assessment will consider the following main impacts on ecological features as a result of the construction, operation and decommissioning of the proposed Development:

- designated sites: including direct and indirect impacts to qualifying habitat features;

- terrestrial habitats and vegetation: effects include direct (i.e. derived from land-take from all infrastructure) and indirect (i.e. changes caused by effects to supporting systems such as groundwater or overland flow);
- aquatic habitats: including ecological effects of changes in water conditions through potential pollution effects. Hydrological effects will be considered in the appropriate EIA Report Chapter; and
- protected species, bats and fish: effects considered will include direct (i.e. loss of life as a result of the proposed Development; loss of key habitat; barrier effects preventing movement to/from key habitats; and general disturbance) and indirect (i.e. loss/changes of/to food resources; population fragmentation; degradation of key habitat, e.g. as a result of pollution).

242. The EIA Report will provide sufficient information to inform a Habitats Regulations Appraisal (HRA) of the proposed Development upon the Tarbert Woods SAC and assessment of impacts upon the Tarbert to Skipness Coast SSSI. The proposed Development is considered sufficiently distant from any other statutory designated site for nature conservation with ecological qualifying interests to preclude likely significant effects, in the absence of any obvious pathway for connectivity.

243. The potential for impacts upon any additional statutory and non-statutory designated sites will be reviewed over the course of the EIA and in consultation with SNH.

6.3.5.3 Significant Effects

244. CIEEM guidelines (2018) define a 'significant effect' as an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general and notes that "*a significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures*."

245. Potentially significant effects identified will be expressed with reference to an appropriate geographic scale. For example a significant effect on a nationally designated site is likely to be of national significance. However, the scale of significance does not necessarily always relate to the importance of an ecological feature. For example an effect on a species which is considered of national importance, may not have a significant effect upon its national population.

246. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect will be assumed as a precautionary approach. Where uncertainty exists, this will be acknowledged.

6.3.5.4 Residual Effects

247. Where the EIA proposes measures to mitigate potentially significant adverse effects on ecological features, a further assessment of residual ecological effects, taking into account any ecological mitigation recommended, will be undertaken.

6.3.5.5 Cumulative Impacts

248. The potential for cumulative impacts with other renewable energy developments proposals will be assessed in accordance with SNH guidance (2012) and include consideration of those such developments located within the same hydrological catchment(s) or within the regular range of mobile species (e.g. for bats) out to a maximum of 10 km from the application boundary.

249. The assessment will encompass the effects of the proposal in-combination with existing developments, either built or under construction; approved developments, awaiting implementation; and, proposals awaiting determination within the planning process with design information in the public domain.

250. The inclusion of additional non-windfarm proposals will also be included upon request from SNH and other primary interest bodies.

6.3.6 Approach to Mitigation

251. The adoption of embedded mitigation measures to avoid or minimise adverse impacts upon ecological features will be part of the iterative design process for the proposed Development.

252. Measures to avoid or otherwise and minimise potentially adverse impacts upon ecological features during scheme design will include:

- Land-take

  Development infrastructure will be designed to minimise the requirement for land-take and the number of watercourse crossings;

  The scheme design will also seek to minimise the requirements for tree felling, in so far as is possible having regard to other ecological and non-ecological constraints;

- Watercourse crossings

  New watercourse crossings required will be designed in accordance with best practice and enable the free passage of fish and other wildlife;

- Watercourse Buffers

  A minimum 50 m buffer between scheme infrastructure will be applied around all watercourses in so far as possible having regard to other ecological and non-ecological constraints;

- Construction Environmental Management Plan

  A Construction Environmental Management Plan (CEMP) (or similar) will be in place during the construction, operational and decommissioning phases of the development. The CEMP will include all good practice construction measures, pollution prevention controls and monitoring to be implemented over the course of the development in line with current guidance; and

- Bat Habitat Features

  A minimum 50 m buffer (from blade tip) will be applied to watercourses and woodland edges in so far as possible having regard to other ecological and non-ecological constraints.

253. Full details of embedded mitigation measures in relation to ecology will be detailed within the EIA report.

6.3.7 Approach to Enhancement

254. Suitable principles for biodiversity enhancement to be delivered as part of the proposed Development will be outlined within the EIA report. The appropriateness and feasibility of principles will be confirmed with SNH and relevant consultees as necessary over the course of the EIA, with view to prescriptive enhancement measures being detailed post-consent within a Habitat Management Plan (HMP) or similar.Opportunities for compensatory woodland planting and/or woodland habitat improvement will be outlined in conjunction with the Forestry section of the EIA report. The scope for enhancement of native broadleaved woodland within Tarbert Woods SAC and Tarbert to Skipness Coast SSSI will also be established in consultation with SNH.

6.3.8 Presentation of Sensitive Information

255. Ecological data considered sensitive (e.g. that pertaining to badger sett locations) will be included in a confidential appendix to the EIA Report. This will not be made publically available, but will be issued to SNH.

256. It will be ensured that sufficient information is presented within the EIA Report to allow an objective and robust assessment of potentially significant adverse impacts upon ecological features to take place.

6.4 Questions

Q6.1: Do consultees agree that the range of surveys carried out to date and proposed is sufficient and appropriate?
Q6.2: Do consultees agree with the approach to the proposed surveys to be undertaken?
Q6.3: Do consultees agree with those surveys which have been scoped out (e.g. those for red squirrel, wildcat, great crested newt, fish and beaver)?
Q6.4: Are there any other relevant consultees/key sources who should be contacted with respect to baseline ecological information gathering and assessment?
Q6.5: Do consultees agree with the proposed assessment of the potential effects as a result of the proposed Development, including the approach to cumulative assessment?
Q6.6: Are there any specific non-wind energy developments that consultees believe should be considered for inclusion within the cumulative impact assessment?
Q6.7: Do consultees agree that with the exception of Tarbert Woods SAC and Tarbert to Skipness Coast SSSI, potentially significant impacts upon statutory designated sites for nature conservation (with ecological features of interest) can be reasonably precluded?

D6.7 Do consultees consider that the scope for enhancement of woodland habitat interest features within the Tarbert Woods SAC and Tarbert to Skipness Coast SSSI should be explored?

7 Ornithology

7.1 Introduction

257. This section of the EIA Scoping Report details the proposed approach to baseline ornithological information gathering and assessment, in accordance with current best practice guidance. The Ornithology Chapter of the EIA Report will assess the potential effects of the proposed Development on important ornithological features and will detail the proposed mitigation and/or compensation measures required to avoid, minimise, restore or offset adverse effects and demonstrate net gain.

7.2 Preliminary Baseline Conditions

7.2.1 Designated Sites for Nature Conservation

258. The Site does not form part of any statutory designated site for nature conservation with qualifying ornithological interests.

259. **Table 7.1** and **Figure 6.1** identify statutory designated sites with qualifying ornithological interests located within 10 km of the application boundary, extended to 20 km for internationally designated sites with migratory geese qualifying interests.

260. Sites with ecological qualifying interests are detailed and discussed separately in Section 6 'Ecology' of this EIA Scoping Report.

Table 7.1: Designated sites for nature conservation with ornithological interests located within 10 km of the Site, extended to 20 km for internationally designated sites with migratory geese qualifying interests.

Site Name	Designation	Distance and Direction from Site	Designated Ecological Features
Knapdale Lochs	SSSI	7.6 north west	Black-throated diver *Gavia arctica* (breeding)
Knapdale Lochs	SPA	7.6 north west	Black-throated diver *Gavia arctica* (breeding)
Arran Northern Mountains	SSSI	8.2 south	Breeding bird assemblage (incl, golden plover, dunlin, hen harrier, raven, peregrine, golden eagle, red-throated diver, ptarmigan)
Kintyre Goose Roosts	SPA	14.4 south west	Greenland white-fronted goose *Anser albifrons flavirostris* (non-breeding)
Kintyre Goose Roosts	Ramsar Site	14.4 south west	Greenland white-fronted goose *Anser albifrons flavirostris* (non-breeding)

7.3 Proposed Baseline Survey and Assessment Methodologies

261. Full details of baseline studies, field surveys, consultations and the approach to assessment will be provided within the EIA Report.

262. All surveys will be completed by suitably experienced and, where necessary, licensed surveyors following current SNH guidance (2017). Full details will be provided within the EIA report.

7.3.1 Key Guidance

263. The following key pieces best practice guidance will be used to inform the scope and approach to baseline ornithological information gathering, interpretation and assessment:

- Argyll and Bute Council (2017) A Biodiversity Technical Note for Planners and Developments. Argyll and Bute Planning Service;
- Band, W., Madders, M. & Whitfield, D.P. (2007) Developing field and analytical methods to assess avian collision risk at wind farms. In de Lucas, M, Janss, G.F.E. and Ferrer, M. (Eds.) Birds and Wind Farms: Risk assessment and Mitigation, pp. 259 - 275. Quercus, Madrid;
- Brown, A.F. & Shepherd, K.B. (1993) A method for censusing upland breeding waders. *Bird Study*, **40**, pp. 189-195;

- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester;
- Forestry Commission Scotland[6] (2016) Corranbuie and Skipness: Land Management Plan (2017-2026). Forestry Commission Scotland;
- Gilbert, G., Gibbons, D. & Evans, J. (1998) *Bird Monitoring Methods*. RSPB, Sandy;
- Hardey, J., Crick, H., Wernham, C., Riley, H. & Thompson, D. (2009) *Raptors: a field guide to survey and monitoring* (2nd edn). The Stationery Office, Edinburgh;
- Mitchell, C. 2012. Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge;
- SNH (2018a) SNH General Pre-application/Scoping Advice to Developers of Onshore Wind Farms. Scottish Natural Heritage, Inverness;
- SNH (2018) Assessing the cumulative impacts of onshore wind farms on birds. SNH, Inverness;
- SNH (2018) Assessing the significance of impacts from onshore wind farms outwith designated areas. SNH, Inverness;
- SNH (2017) Recommended bird survey methods to inform impact assessment of onshore wind farms. SNH, Inverness;
- SNH (2016a) Assessing Connectivity with Special Protection Areas. SNH, Inverness;
- SNH (2016) Wind farm proposals on afforested sites – advice on reducing suitability for hen harrier, merlin and short-eared owl. SNH, Inverness;
- SNH (2016) Environmental Statements and Annexes of Environmentally Sensitive Bird Information. SNH, Inverness;
- SNH (2000) Calculating a theoretical collision risk assuming no avoiding action. SNH, Inverness; and
- Wilson, M. W., Austin, G. E., Gillings S. and Wernham, C. V. (2015) Natural Heritage Zone Bird Population Estimates. SWBSG Commissioned report number 1504.

7.3.2 Proposed Study Area

264. Study areas for baseline information gathering will be based upon the application boundary, extended to record flight activity, nest, roost and display sites for target species in accordance with SNH guidance (2018). Study areas adopted will be updated over the course of the EIA to account for changes in scheme design and where permitted land access allows.

7.3.3 Desk Study

265. A desk study will be undertaken to identify likely bird populations and target species at the Site, to inform the requirement and approach to baseline surveys in accordance with SNH guidance (2018). The following key sources will be consulted:

- SNH Sitelink;
- SNH;
- Forestry and Land Scotland;
- Argyll Biological Records Centre;
- Argyll Raptor Study Group;
- Argyll Bird Club; and
- RSPB (incl. the local black grouse *Tetrao tetrix* officer).

266. Publicly available EIA documentation for any relevant windfarm or hydro scheme developments, the Corranbuie and Skipness Land Management Plan (LMP) 2017-2016 (2016) together with additional peer reviewed literature and publicly available resources will also be reviewed.

[6] Now Forestry and Land Scotland.

267. Full details will be provided within the EIA report.

7.3.4 Target Species

268. Target species for survey and recording will be identified in accordance with SNH guidance (2017), through a review of existing information obtained from key sources (above) and supported by a reconnaissance survey visit by a suitably competent ornithologist where necessary to establish habitats and likely bird population associations.

269. In accordance with SNH guidance (2017 & 2018) target species will be identified as those which are afforded a higher level of legislative protection and are potentially sensitive to windfarm developments, drawn from the following lists:

- Annex 1 of the EC Birds Directive;
- Schedule 1 of the Wildlife & Countryside Act 1981;
- Red-listed Birds of Conservation Concern (Eaton *et al*., 2014); and
- Annex 1 'Priority bird species for assessment when considering the development of onshore windfarms in Scotland' (SNH, 2018).

270. Consideration will also be given to species which are identified locally as of conservation concern within the Local Biodiversity Action Plan, and those which are qualifying features of relevant designated sites.

271. The following likely target species are identified:

- All Annex 1/Schedule 1 raptors and owls;
- All swans, geese (excl. feral species), ducks (excl. feral species), waders;
- Red-throated and black-throated diver; and
- Black grouse.

7.3.5 Field Surveys

272. All surveys will be completed by suitably experienced and, where necessary, licensed surveyors following current SNH guidance (2017). Full details will be provided within the EIA report.

273. The potential to complete field surveys proposed in 2020 may be compromised by the Covid-19 virus outbreak and in that event alternative approaches to baseline information gathering to inform assessment will be identified in consultation with SNH and additional interest bodies. Any variation to the best practice guidance and survey methodologies detailed herein will be submitted in writing to SNH in advance of commencement.

274. The following scope of ornithology surveys is proposed on the basis of the above likely target species:

- Vantage Point (VP) Flight Activity Surveys;
- Moorland Breeding Bird Survey (MBBS);
- Breeding Raptor and Owl Searches;
- Woodland Grouse Survey; and
- Breeding Diver Surveys.

275. In accordance with SNH guidance (2017) two years of survey are proposed, unless it can be demonstrated that a shorter period of survey is sufficient to inform the design and robust assessment of the proposed Development. It is therefore proposed that following the completion Year 1 surveys SNH would be re-consulted on the requirement for a second year of surveys, on the basis of established levels of established and the availability of other adequate site-specific information obtained through desk study.

7.3.5.1 VP Flight Activity Surveys

276. Flight activity VP surveys to quantify the level and distribution of 'at collision risk' flight activity for target species and to provide data for Collision Risk Models (CRMs) will be undertaken in accordance SNH guidance (2017).

277. The study area will include the proposed turbine envelope, extended to 500m beyond the outermost proposed turbines in accordance with SNH guidance (2017). A preliminary review of the study area and topography suggests that five VP locations are required to provide maximum visual coverage of the required study area using the minimum number of points. Full details of VP locations and visible areas based on a 2 km viewshed radius and calculated using a Digital Elevation Model (DEM) and subsequent ground-truthing, will be provided within the EIA Report.

278. In accordance with SNH guidance (2017) a minimum survey effort of 72 hours per VP locations per year is proposed, divided between occupancy seasons for relevant target species (i.e. 36 hours breeding and 36 hours non-breeding).

279. VP survey times will be dispersed throughout the day and will be completed in a range of weather conditions conductive to survey. Each VP survey session will be no more than three hours in duration.

280. Target species flight activity will be recorded in accordance with SNH guidance (2017) and classified into height bands i.e. below, at or above collision risk height, based on the preferred candidate turbine specification.

281. Target species for flight activity VP surveys will include all divers, swans, geese (excl. feral species) and ducks, Annex 1/Schedule 1 raptors and owls, waders and black grouse *Tetrao tetrix*.

282. The activity of secondary species, including all commoner raptors (incl. common buzzard, kestrel, sparrowhawk), all gulls and any additional notable species as observed, will be recorded in approximately 15 minute summary intervals, noting the number of birds present and general behaviour in order to build an overall picture of activity within the study area.

7.3.5.1.1 Migratory Surveys

283. The Site is not located within the core foraging range distance for any internationally designated site for nature conservation, designated for the following:

- Whooper swan (5 km);
- Greenland white-fronted goose (8 km);
- Barnacle goose (15 km);
- Greylag goose (20 km); and
- Pink-footed goose (20 km).

284. The Site is also not located in an area of known importance for foraging migratory greylag or pink-footed geese (as per Mitchel, 2012) and is outwith any known important foraging sites on Kintyre for Greenland white-fronted geese[7].

285. Additional VP flight activity survey effort during the migratory periods for waterfowl (i.e. spring and autumn) is therefore not proposed.

7.3.5.2 Moorland Breeding Bird Survey

286. A moorland breeding bird survey (MBBS) will be undertaken following an adapted Brown & Shepherd (1993) method, as per SNH guidance (2017), and comprised four staggered visits between April and July. The survey methodology is suitable for moorland and open country species including waders and some wildfowl species.

287. The study area will comprise suitable open habitats within the Site and out to 500m.

288. A survey of moorland passerines will not be undertaken and is not required in accordance with SNH guidance (2017). Observations of any notable species (incl. Schedule 1 passerines) will however be noted.

[7] As per feeding sites detailed in South Argyll site inventories (greenlandwhitefront.org).

7.3.5.3 Breeding Raptor and Owl Searches

289. Searches for breeding Annex 1 and Schedule 1 raptors and owls will be undertaken following species-specific survey techniques detailed in Hardey *et al*., (2013) as per SNH guidance (2017) and informed through consultation with the Argyll Raptor Study Group.

290. The study area will comprise the Site extended to 2 km for all Annex 1 and Schedule 1 species, and 6 km for eagle species.

7.3.5.4 Woodland Grouse Survey

291. Searches for black grouse leks will be undertaken following species-specific survey techniques detailed within Gilbert *et al*. (1998), as per SNH guidance (2014), and conducted over several dates (to include preparatory visits) between the last week in March and mid-May.

292. The study area will include all suitable habitats within the Site and out to 1.5 km, with searches informed through consultation with the local RSPB black grouse officer to avoid disturbance to lekking birds.

7.3.5.5 Breeding Diver Survey

293. Searches for breeding divers will be undertaken at suitable waterbodies within and out to 1 km of the Site following species-specific survey methodologies detailed in Gilbert *et al*. (1998) as per SNH guidance (2017).

294. Searches will seek to establish occupancy by red-throated and black-throated diver and determine breeding outcomes.

7.3.5.5.1 Focal Breeding Loch Watches

295. In the event occupied breeding lochans are recorded within the study area, focal breeding loch watches over each occupied lochan will be undertaken to record incoming and outgoing flights of provisioning adult divers during the incubation and chick-rearing periods.

296. Survey effort will aim to record a total of 20-30 incoming and outgoing flights, or sufficient activity, to identify or discount any regular flight patterns occurring over the Site, between occupied breeding lochans and foraging areas.

7.3.5.6 Additional Surveys

297. As above, the Site is not located in area of known importance for foraging migratory greylag or pink-footed geese (as per Mitchel, 2012) and is outwith any known important foraging sites on Kintyre for Greenland white-fronted geese. The broad habitats within the Site are also considered to be unsuitable for wintering and migrant foraging waterfowl.Feeding distribution surveys for geese and swans are therefore not proposed.

298. Surveys of woodland passerines, particularly in Sites supporting commercial plantation woodland are not generally required and are not proposed. Observations of any notable species (incl. Schedule 1 species) will however be noted during the MBBS and/or other ornithological surveys where observed.

299. No additional surveys are proposed.

7.3.6 Assessment

300. Potential significant effects upon ornithological features may arise from direct habitat loss, displacement (indirect habitat loss), and mortality resulting from collision or interaction with development infrastructure.

301. Such effects will be assessed for the construction, operational and decommissioning phase of the proposed Development, and in-combination with other developments.

7.3.6.1 Construction

302. During construction of the proposed Development, in the absence of mitigation, it is anticipated that impacts upon ornithological features may arise from:

- habitat loss, fragmentation or change as a result of the delivery and installation of development infrastructure; and,
- disturbance to and loss of nest sites, eggs and/or dependent young.

303. Construction activities may be predicted to result in a temporary increase in noise, vibration and human presence within construction areas. This has the potential to displace birds from the vicinity of construction areas for the duration of construction works.

304. Effects would likely to be greatest during the breeding season (generally between March and August, depending upon the species), but are considerably variable between sites and species.

305. Overall construction disturbance would be considered temporary and would occur only when construction activities are taking place. Furthermore, construction would be not expected to take place over the whole project area, but within defined working areas, phased over small areas.

306. By virtue of spatial separation, there would be no direct impacts on ornithological interests within any designated site for nature conservation during the construction phase, by virtue of spatial separation.

7.3.6.2 Operation

307. The operation of turbines and maintenance activities has the potential to cause disturbance and displacement of birds throughout the proposed Development's operational lifetime. The extent of displacement is however, highly variable between species and species-group and therefore a species-specific assessment will take place on the basis of baseline studies.

308. The risk of avian mortality resulting from the collision of birds with the turbine blades (or additional windfarm infrastructure) is also acknowledged to be higher for some species due to their biometrics and flight behaviour. The likelihood of collision is also likely to be influenced by the nature habitats within the renewable energy development site and the surrounding environment.

309. Where flight activity data requires it Collision Risk Models following the Band Model in accordance with SNH guidance (Band et al., 2007; SNH, 2000) will be undertaken to quantify the likelihood of mortality for target species and impacts upon designated sites.

7.3.6.3 Method of Assessment

310. Impact assessment presented within the EIA report will be undertaken in accordance with CIEEM guidance (2016) as detailed in Section 6 above and SNH guidance 'Assessing Significance of Impacts from Onshore Wind Farms Outwith Designated Areas' (2018).

311. The assessment process will include the following stages:

- determination and evaluation of important ornithological features;
- identification and characterisation of impacts;
- outline of mitigating measures to avoid and reduce significant impacts;
- assessment of the significance of any residual effects after such measures;
- identification of appropriate compensation measures to offset significant residual effects; and,
- identification of opportunities for enhancement.

312. The approach to assessment will take account of existing guidance and published scientific literature in relation to birds and windfarm, together with professional judgement and experience of windfarm EIA.

313. The EIA report will provide a detailed description of the existing baseline ornithological features of the study area, along with the assessment of the potential impacts of the renewable energy development proposal on the identified important ornithological features. The assessment will conclude on the impact of the proposed Development on the maintenance (or recovery) of species' favourable conservation status.

7.3.6.4 Important Ornithological Features

314. The identification of important ornithological features for detailed assessment will be undertaken on the basis of baseline study results with reference to SNH guidance (2018) and will broadly include:

- qualifying features of the Knapdale Lochs SPA/SSSI;
- species listed on Annex 1 of the Birds Directive;
- species listed on Schedule 1 of the Wildlife and Countryside Act; and,
- species listed on Annex 1 'Priority bird species for assessment when considering the development of onshore wind farms in Scotland' (SNH, 2018).

315. In addition, red-listed Birds of Conservation Concern (BoCC) (Eaton *et al.*, 2014), will also be identified where the conservation status of such species may reasonably be adversely affected by the proposed Development.

7.3.6.5 Significant Effects

316. For the purposes of assessment, the significance of effects will primarily be expressed within the EIA report with reference to the regional, national or international scale (as relevant) in line with SNHs interests of bird species status at wider spatial levels. The significance of effects at a local scale may also be assessed where sufficient information allows a meaningful assessment.

317. The evaluations and effect assessments would be undertaken on the basis of the field survey information collated, augmented with information available from the desk study. Bird flight activity data will be collated and analysed to assess the potential risk to individual species of conservation concern from collision mortality, following the method described by Band *et al.* (2007).

318. In order to assess significance, population information will be collated on relevant regional and national scales where available and adopting a precautionary approach on the basis of uncertainty.

7.3.6.6 Cumulative Impacts

319. Cumulative impacts will be assessed with reference to SNH guidance (2012 and 2018) for all important ornithological features subject to a detailed assessment. The potential for significant cumulative effects due to habitat loss, disturbance/displacement and collision risk mortality will be assessed. The assessment will be based on the consideration of residual effects i.e. assuming that proposed mitigation and compensation measures (where relevant) are implemented.

320. The cumulative assessment will include consideration of:

- existing windfarm developments, either built or under construction;
- approved windfarm developments, awaiting implementation; and
- windfarm proposals awaiting determination within the planning process with design information in the public domain.

321. With regard to the spatial extent of the cumulative assessment, SNH guidance (2012 and 2018) stipulates that cumulative effects should typically be assessed at the relevant Regional NHZ scale, unless there is a reasonable alternative. The proposed Development is located within the Argyll West and Islands NHZ (Wilson et al., 2015). It is therefore proposed that where the availability of relevant information is sufficient enough to allow for a meaningful cumulative assessment at the Argyll West and Islands NHZ scale to be undertaken, this will be done.

322. SNH guidance (2012) does however recognise that access to relevant data for other developments may be limited and therefore a meaningful assessment of cumulative effects of such developments is not always possible. As such an alternative approach is primarily proposed, whereby the core foraging range for each species included will be used to determine the spatial extent of the cumulative assessment, adopting a precautionary approach as necessary.

323. Core foraging ranges will be primarily taken from SNH guidance on 'Assessing Connectivity with Special Protection Areas (SPAs)' (SNH, 2016).

7.3.6.7 Habitats Regulations Appraisal

324. The Site is located within the core foraging range for black-throated diver qualifying interests of the Knapdale Lochs SPA (<10 km). The EIA report will therefore provide sufficient information to allow the competent authority to undertake a Habitats Regulations Appraisal of the proposed Development in relation to the Knapdale Lochs SPA (and SSSI).

325. The Site is not located within the core foraging range for the qualifying interests of any other SPA (as per SNH, 2016) and as such, the potential for connectivity between the Site and any such designation has been discounted.

7.3.6.8 Mitigation

326. The adoption of embedded mitigation measures to avoid or minimise adverse impacts upon ecological features resulting from the proposed Development will be part of the iterative design process as detailed in Section 6.

327. Full details of the scheme design evolution and embedded mitigation measures in relation to ornithology will be detailed within the EIA report. This will include the specification of any species specific working buffers as necessary requirement for the production of a breeding bird protection plan to ensure legislative in accordance with current good practice guidance following the completion of baseline studies outlined.

328. Flight activity data will also be reviewed to identify any potentially problematic turbines likely to result in any significant collision risk mortality and measures to limit increased suitability of the Site to sensitive species (such as hen harrier, merlin and short-eared owl) will be outlined where required, with reference to SNH guidance (2017) .

7.3.6.9 Enhancement

329. Suitable principles for biodiversity enhancement to be delivered as part of the proposed Development will be outlined within the EIA report. The appropriateness and feasibility of principles will be confirmed with SNH and relevant consultees as necessary over the course of the EIA, with view to prescriptive enhancement measures being detailed post-consent within a Habitat Management Plan (HMP), updated Land Management Plan (LMP) or similar.

7.3.6.10 Presentation of Sensitive Information

330. Information pertaining to the locations of sensitive breeding species will be included in a confidential appendix to the EIA Report which will not be made publicly available, but will be issued to SNH.

331. Suitable principles for biodiversity enhancement to be delivered as part of the proposed Development will be outlined within the EIA report. The appropriateness and feasibility of principles will be confirmed with SNH and relevant consultees as necessary over the course of the EIA, with view to prescriptive enhancement measures being detailed post-consent within a Habitat Management Plan (HMP) or similar.

7.4 Questions

Q7.1: Do consultees agree with the range of surveys proposed on the basis of the preliminary list of likely target species identified?
Q7.2: Do consultees agree with the approach to the proposed surveys to be undertaken?
Q7.3: Do consultees agree with those surveys which have been scoped out (e.g. migratory VP watches, foraging geese distribution surveys, targeted surveys of woodland and moorland passerines)?
G7.4: Do consultees expect to see additional VP flight activity survey effort (hours) above that proposed?
Q7.5: Are there any other relevant consultees/key sources who should be contacted with respect to baseline ornithological information gathering and assessment?
Q7.6: Do consultees agree with the proposed assessment of the potential effects as a result of the proposed Development, including the alternative approach to cumulative assessment on the basis of species core foraging ranges?
Q7.7: Are there any non-wind energy developments that consultees should be considered for inclusion within the cumulative impact assessment?
Q7.8: Do consultees agree that with the exception of the Knapdale Lochs SPA (and SSSI), potentially significant impacts upon statutory designated sites for nature conservation (with ornithological features of interest)?

8 Cultural Heritage

8.1 Introduction

332. The 'cultural heritage' of an area comprises archaeological sites, historic buildings, gardens and designed landscapes, historic battlefields and other sites, features or places in the landscape that have the capacity to provide information about past human activity, or which have cultural relevance due to associations with folklore or historic events. Sites of cultural heritage interest may also derive some, or all of that interest, from their 'setting' within the wider landscape.

333. Historic landscape is not treated as a heritage asset for the purposes of this assessment except where a defined area of landscape has been designated for its heritage interest (including Conservation Areas and areas included in the Inventory of Gardens and Designed Landscapes). It is recognised that all landscapes have an historic dimension, and this will be considered as part of the assessment of Landscape Character (covered in Chapter 5: Landscape and Visual Amenity Assessment (LVAA)).

334. It is important to note that, although any effects on the significance of heritage assets due to change in their setting are likely to be visual in nature, the assessment of these visual effects is distinct from the assessment of visual change in the LVAA. The assessment of effects on setting may be informed by visualisations prepared as part of the LVAA but the conclusions reached regarding visual change in the setting of a heritage asset are distinct.

335. The Cultural Heritage scoping report is intended to identify potential effects of the proposed Development upon the physical fabric and settings of heritage assets within the Site, and potential effects on the settings of assets within the wider landscape.

336. The Cultural Heritage section of the EIA-R will characterise the historic environment within the Site and in the wider study area. It will use the results of consultation, desk-based research, walkover surveys and setting visits to define a study area and to assemble a baseline of heritage assets within it, and then to assess the potential effects of the proposed Development on that baseline. Where potential effects are identified, mitigation measures will be suggested.

8.2 Baseline

337. The Baseline used for this scoping section has been compiled using existing data on the historic environment available online from Historic Environment Scotland (HES) via the Canmore database and the Pastmap website, and designations data available as GIS datasets from the HES website.

338. Two study areas have been used for the identification of heritage assets that may be affected by the proposed Development:

339. The Inner Study Area (ISA) corresponds to the extent of the application boundary.

340. The Outer Study Area (OSA) extends to 20 km from the proposed turbines, which is taken as the maximum extent of potentially significant effects on the settings of heritage assets. Within the OSA, assets will be included in the assessment based on the level of importance assigned to the asset (defined in the EIA-R Methodology), to ensure that all significant effects are recognised:

- up to 2 km from proposed turbines: Category C Listed Buildings, and any undesignated asset of local importance which has a wider landscape setting that contributes substantially to its cultural significance;
- up to 5 km from proposed turbines: all assets of national or regional importance, including Scheduled Monuments, Category A and B Listed Buildings, Conservation Areas, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields and undesignated assets of more than local importance; and
- up to 20 km from proposed turbines: any asset which is considered exceptionally important, and where long-distance views from or towards the asset are thought to be particularly sensitive, in the opinion of the assessor or consultees. Between 5km and 20km, the baseline will be screened (and agreed with consultees) in order to identify any assets of particular sensitivity or importance.

8.2.1 The Inner Study Area

341. There are no designated heritage assets recorded within the ISA (**Figure 8.1**). A study of the Pastmap website and the Canmore database has identified at least 13 undesignated heritage assets recorded within the ISA. These mostly comprise

features and structures associated with post-medieval crofting and animal husbandry including field boundaries, relic field systems, farmsteads and other buildings, and shieling huts. There are also some remains of possible prehistoric date including cup-marked stones and house platforms. The heritage assets recorded within the ISA form two loose geographical clusters. One is in the north eastern corner of the ISA and the second is across the southern end of the ISA. There are six known heritage assets within the construction footprint of the proposed turbines.

342. The baseline of the assessment will be informed by reference to designations data maintained by Historic Environment Scotland (HES) and to the Argyll & Bute Historic Environment Record (HER) maintained by the West of Scotland Archaeology Service (WoSAS). A digital extract will be obtained from the HER to ensure that the most up-to-date version of the data is used, and a walkover survey will be undertaken to confirm the presence of known features within the ISA once the layout has progressed and likely infrastructure locations have been identified. Previous investigations within and around the ISA recorded in the Canmore database include an early twentieth century survey of the hills south of Tarbert (published in the Proceedings of the Society of Antiquaries of Scotland), three pre-afforestation surveys undertaken in the late 1970s and the First Edition Survey Project of the late 1990s, which identified several features depicted on historic OS mapping.

343. The distribution of known archaeology in the surrounding area indicates that previously unidentified archaeological remains are more likely to be found at lower elevations and/or close to the principal watercourses. Areas of gentle gradient and/or below 300m are considered of low potential while areas of steep land, and areas above 300m are considered of negligible potential.

8.2.2 The Outer Study Area

344. There are several designated heritage assets within 5 km of the Scoping layout (**Figure 8.2**). These include four Scheduled Monuments and five Listed Buildings. The Scheduled Monuments include two prehistoric cairns and a prehistoric enclosure. The fourth Scheduled Monument (SM13225, Skipness Castle and Chapel) is also a Property in Care of Scottish Ministers (PiC). The five Listed Buildings comprise one Category B and four Category C Listed Buildings.

345. Within 20 km of the turbines, there are 63 Scheduled Monuments; ten Category A Listed Buildings; three Conservation Areas, and three Inventory Garden and Designed Landscapes (IGDL).

346. There are no World Heritage Sites or Inventory Historic Battlefields in the OSA.

347. The 63 Scheduled Monuments between 5 km and 20 km from the turbines comprise 15 prehistoric ritual or funerary monuments; 18 prehistoric forts and/or settlements; three medieval castles; six medieval crosses and/ or carved stones; seven medieval ecclesiastical sites, eight post-medieval industrial features and six medieval and post-medieval secular structures and settlements. One of these Scheduled Monuments (SM90206, Lochranza Castle) is also a PiC.

348. The Listed Buildings comprise a mixture of country houses and estate buildings, monuments and memorials, churches, and urban domestic and commercial buildings. Five of the Listed Buildings are within Conservation Areas and will be assessed as part of those assets. None of the Category A Listed Buildings are within 10 km of the proposed Development.

349. The three CAs comprise Kerrycroy (CA470), Rothesay (CA478), and Tarbert (CA479). Tarbert is the closest, approximately 5.5 km north west of the proposed Development, whilst Kerrycroy and Rothesay are both 20 km away on the eastern side of the Isle of Bute.

350. The three IGDLs comprise the estates and grounds of Ballimore (GDL41), Mount Stuart (Kirrieniven) (GDL291), and Stonefield Castle Hotel (GDL350). Of these, only Stonefield Castle Hotel (GDL350) is within 10 km of the proposed Development.

8.3 Assessment Methodology & Consultation

351. The assessment will be carried out with reference to the following policy and guidance:

- Planning Advice Note (PAN) 2/2011: Planning and Archaeology;
- Scottish Planning Policy (SPP) 2014;
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA 2014);

- Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (CIfA 2014);
- Our Place in Time: The Historic Environment Strategy for Scotland (2015);
- Managing Change in the Historic Environment: Setting (Historic Environment Scotland (HES) 2016);
- Historic Environment Policy Scotland (HES, 2019);
- Historic Environment Scotland Circular (HES, 2019); and
- Designation Policy and Selection Guidance (HES 2019).

352. Effects on the historic environment can arise through direct physical impacts, impacts on setting or indirect impacts:

- direct physical impacts describe those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works and will only occur within the application site;
- an impact on the setting of a heritage asset occurs when the presence of a development changes the surroundings of a heritage asset in such a way that it affects (positively or negatively) the cultural significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning but they are only likely to lead to significant effects during the prolonged operational life of the development; and
- indirect impacts describe secondary processes, triggered by the development, that lead to the degradation or preservation of heritage assets. For example, changes to hydrology may affect archaeological preservation; or changes to the setting of a building may affect the viability of its current use and thus lead to dereliction.

353. Cultural heritage constraint areas will, where necessary, be defined to include an appropriate buffer around known heritage assets. Constraint areas can be treated as a 'trigger' for the identification of potential direct impacts: they represent areas within which works *may* lead to direct impacts of more than negligible significance on known heritage assets.

354. Potential impacts on unknown heritage assets will be discussed in terms of the *risk* that a significant effect could occur. The level of risk depends on the level of archaeological potential combined with the nature and scale of disturbance associated with construction activities and may vary between high and negligible for different elements or activities associated with a development, or for the development as a whole.

355. Potential impacts on the settings of heritage assets will be identified from an initial desk-based appraisal of data from HES and the HER and consideration of current maps and aerial images available on the internet. Where this initial appraisal identifies the potential for a significant effect, the asset will be visited to define baseline conditions and identify key viewpoints. Visualisations will be prepared to illustrate changes to key views, where potentially significant effects are identified.

356. Where potentially significant effects are identified, mitigation measures will be proposed. The preferred mitigation option is always to avoid or reduce impacts through design, or through precautionary measures such as fencing off heritage assets during construction works. Impacts which cannot be eliminated in these ways will lead to residual effects.

357. Adverse effects may be mitigated by an appropriate level of survey, excavation, recording, analysis and publication of the results, in accordance with a written scheme of investigation (SPP paragraph 150 and PAN2/2011, sections 25-27). Archaeological investigation can have a beneficial effect of increasing knowledge and understanding of an asset, thereby enhancing its archaeological and historical interest and offsetting adverse effects.

358. The consultees below will be approached for information to inform the EIA. These consultees may also be contacted by the Scottish Government regarding the scope of the EIA:

- The West of Scotland Archaeology Service;
- Historic Environment Scotland; and
- Local archaeological interest groups (as appropriate).

8.4 Questions

Q8.1: Are there any other relevant consultees who should be contacted with respect to the Cultural Heritage assessment?

Q8.2: Do consultees have any particular viewpoints or visualisations that they would like to see included in the assessment?

9 Hydrology, Hydrogeology, Geology and Soils

9.1 Introduction

359. This chapter of the EIA report will consider the potential effects on the hydrology, hydrogeology, geology and soils that may occur from the proposed Development during the construction phase.

9.2 Existing Conditions

360. The Site lies mainly on afforested terrain, with the central part of the Site on unforested terrain. Slope angles are variable, characterised by undulating terrain across the main part of the Site and steeper slopes in some marginal areas. The majority of the proposed Development area is located within Class 5 soil (no peatland habitat recorded), with a small area of Class 3 soil (most soils are carbon-rich, some areas of deep peat) in the south western part. The central unforested section consists of Class 1 and Class 2 peatland, as shown on the SNH Carbon and Peatland Map 2016; both Classes 1 and 2 are described as nationally important carbon-rich soils,deep peat and priority peatland habitat.

361. Peat depths are expected to be locally deep within the central unforested section, but variable and possibly thin over the northern and southern afforested areas. These afforested areas of the proposed Development are not anticipated to be problematic from a peat stability perspective. An assessment into the age, planting orientation and drainage, as well as the proposed approach to forest management, will need to be carried out in the afforested areas of the Site.

362. The presence of numerous drains across the Site, mainly within the afforested areas, may afford opportunities to re-use peat in drain restoration and elevation of water tables. Similarly, the presence of peat hagging within the open area may provide opportunities for peatland restoration through channel blocking. If deep peat is localised, the most appropriate form of peat management may be to avoid siting infrastructure in the deeper peat areas through careful and iterative infrastructure design.

363. The Site is located across the catchment areas for three main watercourses which provide drainage for around 75% of the Site area. These watercourses are the Skipness River in the southern part, the Bardaravine River in the north western part and the Abhainn Achachoish in the northernmost part of the Site. The entire eastern side of the Site is drained by a large number of small watercourses which drain to sea. A number of small lochs and lochans are located within the central part of the Site area. The lower reaches of the Skipness River and Abhainn Achachoish within the Site are shown to be at high risk of surface water flooding, as are the two main lochs Loch na Machradh Mòire and Loch na Machradh Bige. The Site is outwith any national or international designated areas for hydrology, and is not within a Drinking Water Protection Zone.

364. Groundwater-dependent terrestrial ecosystems (GWDTE) may be present, and initial habitat mapping identifies some potential GWDTE within the open central part of the Site. These, and other areas identified as potential GWDTE, will require evaluation in conjunction with the team's ecology specialists to minimise the potential effects and to identify appropriate mitigation measures if necessary.

9.3 Proposed Surveys and Assessment Methodologies

9.3.1 Guidance

365. The following guidance documents will be used to inform the assessment of effects of the proposed Development on hydrology, hydrogeology, geology and soils including peat:

- Engineering in the Water Environment: Good Practice Guide, River Crossings (SEPA, 2010);
- Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater-Dependent Terrestrial Ecosystems (SEPA, 2017);
- Natural Heritage Considerations for Solar Photovoltaic Installations: Version 3 (SNH, 2017);
- Guidance on Developments on Peatland – Site Surveys (The Scottish Government, 2017);
- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, 2nd Edition (The Scottish Government, 2017);
- Managing Geotechnical Risk: Improving Productivity in UK Building and Construction (Clayton, 2001);

- Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables & SEPA, 2014);
- Good Practice during Windfarm Construction (SNH, SEPA, Forestry Commission Scotland & HES, 2015); and
- Constructed Tracks in the Scottish Uplands, 2nd Edition (SNH, 2013)

9.3.2 Proposed Study Area

366. The study area will be based upon the application boundary (including the main development area and the main Site access track), with a wider study area of up to 5 km downstream of the Site for hydrologically relevant designations and water supply related receptors, and 1 km beyond the application boundary for groundwater receptors.

9.3.3 Desk and Field Survey Method

367. It is anticipated that initial desk studies will be undertaken to determine and verify the baseline conditions through the review and collation of available and relevant information relating to hydrology, hydrogeology, geology and soils. This will include a review of published mapping, including OS topographical mapping, BGS geological mapping and Scotland's Soils soil and peatland mapping, aerial photographs and site-specific data such as available site investigation data, geological and hydrogeological reports, digital terrain models (DTM; to provide slope data) and geological literature.

368. Private water supply (PWS) data will be requested from Argyll and Bute Council's Environmental Health Officer. Potential PWS located downstream of the Site will be verified by DTM data and questionnaires issued to the relevant properties to determine exact locations of infrastructure relative to the Site.

369. A detailed site visit and walkover survey will be undertaken to:

- verify the information collected during the baseline desk study;
- undertake a visual assessment of the main surface waters and verify private water supplies, including intakes that could be affected by the proposed Development;
- identify drainage patterns, areas vulnerable to erosion or sediment deposition, and any pollution risks;
- visit any identified GWDTE (in consultation with the project ecology team);
- prepare a schedule of potential watercourse crossings and existing crossings that would require upgrading;
- inspect rock exposures and establish by probing an estimate of overburden thickness and confirmation of likely substrate;
- allow appreciation of the Site including awareness of gradients, possible borrow pit sites, access route options and prevailing ground conditions, and to assess the relative location of all the components of the proposed Development; and
- collection of peat and substrate information where exposures are present e.g. in watercourse channels and alongside existing track cuttings

370. In parallel with the Site visit and walkover survey, a peat probing exercise will be undertaken. This will involve undertaking a peat depth survey with a hand-held probe on a 100 m grid across the proposed Development area, to identify areas of deeper peat and natural variation in the peat substrate across the Site area.

371. Following the field surveys, a limited geomorphological mapping exercise will be undertaken to link the topographic features with the underlying geology, and to identify areas of the Site that may be potentially at risk from peat slide. This will make use of collected field data, DTM, topographical mapping and aerial photography.

372. Following finalisation of the infrastructure design, a second phase of peat survey work will be scheduled. This will include peat probing at 50 m centres along all proposed new access tracks and 10 m crosshair probing at turbine locations. Additional probing will be undertaken as required in areas where existing tracks require widening or modification to corners or junctions, and at all other infrastructure locations, to ensure that there is sufficient peat depth information to support related studies on peat instability and peat excavation and reuse.

9.4 Assessment Method

373. The information obtained from the review of existing data, site surveys and guidance documentation will form the basis of assessment of the potential effects associated with the proposed Development. Where potential likely significant effects are identified, mitigation measures will be proposed.

374. The assessment method will be based on the consideration of potential effects arising from the construction of the proposed Development on surface water and groundwater quality, modification of surface and groundwater flow paths and drainage patterns, private water supplies, and soils and peatland.

375. The EIA Report will include detailed hydrological and peat depth mapping, together with a photographic inventory of all new and upgraded watercourse crossings.

376. An assessment of groundwater-dependent terrestrial ecosystems (GWDTE) will be undertaken based on the NVC mapping undertaken by the ecology team. If significant areas of potentially moderate or highly groundwater-dependent wetlands are identified in proximity to proposed infrastructure, additional investigation would be undertaken to identify if the wetland areas are truly groundwater-dependent, refine their mapped extent, conceptualise the hydrogeology and assess if there may be any potential effects on them. Where possible, the design will be modified to avoid or minimise potential effects on GWDTE.

377. A peat slide risk assessment (PSRA) will be undertaken in accordance with the Scottish Government's Peat Landslide Hazard & Risk Assessments: Best Practice Guide for Proposed Electricity Developments (The Scottish Government, 2017). The PSRA will be informed by the peat depth model, site walkover and peat depth surveys, detailed geomorphological mapping and terrain classification. The assessment will use a combined qualitative (contributory factor) and quantitative (factor of safety) approach to determine the likelihood of peat landslides. Areas with the highest likelihoods will be compared with identified receptors to identify risks and determine appropriate mitigation measures.

378. A peat management plan (PMP) will be prepared in accordance with the Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables & SEPA, 2012). The PMP will be informed by the collated peat depth probing described above, combined with a full site appraisal of potential reuse opportunities e.g. reinstatement and landscaping requirements associated with infrastructure, mapping of drainage ditches and peat hagging. Where opportunities are identified to integrate the PMP with wider environmental enhancement measures, such as peatland restoration, the PMP will identify the volume and type of peat (acrotelm or catotelm) to be used for this activity.

9.5 Potential Effects

379. Potential effects associated with the construction and operation of the proposed Development, prior to implementation of any avoidance or mitigation measures, include:

- pollution of public/private drinking water supplies and surface watercourses from escape of sediment or sediment-rich runoff from stripped ground, excavations and stockpiled material during construction works;
- pollution of public/private drinking water supplies, surface water and groundwater through spillage of fuels or oils as a result of operation of plant during construction and/or through routine or emergency maintenance during construction or operation;
- modifications to natural overland drainage pathways, including changes to runoff rates and volumes and effects on downstream flood risk;
- modification to natural groundwater flow paths;
- loss of or disturbance to peat and carbon-rich soils;
- loss of or disturbance to GWDTE, including modification of water flow and changes in nutrients;
- changes to surface water flow resulting from water abstraction;
- erosion and compaction of soils as a result of excavation and reinstatement activity including stockpiling and traffic movement; and
- localised flooding and bank erosion as a result of impediments to flow and/or uncontrolled water discharge.

380. A key determinant for any decision regarding scoping effects out of further consideration will be the project design and associated adoption of project-wide good practice measures. These would require to be effective during construction and also maintained during the project's operational period. On the basis that construction effects are likely to be more pronounced during construction, it is proposed that all operational effects on hydrology and soils are scoped out of the assessment.

9.6 Approach to Mitigation

381. Given both SPR's commitment to, and prior experience of, implementing accepted good practice during construction and operation of windfarm sites, and taking into account the current regulatory context, any potential effects on soils, geology and

the water environment identified by the assessment will be addressed and mitigated by the conceptual site design and application of best practice guidance to prevent, reduce or offset effects.

382. In consequence, a number of measures are not considered to form mitigation as such, but are rather an integral part of the design and construction process. It is proposed that these will be taken into account prior to assessing the likely effects of the proposed Development. However, where appropriate, more tailored and location-specific mitigation measures will be identified prior to determining the likely significance of residual effects.

383. Specific measures will also be detailed within the draft Construction Environmental Management Plan (CEMP) and will include as a minimum:

- adoption of best practice pollution prevention, drainage management and waste management procedures;
- control of drainage and sediment runoff from excavation areas and access tracks;
- control of drainage and sediment runoff during the construction or upgrading of watercourse crossings;
- control of concrete pouring; and
- appropriate design of foundations and foundation installation, taking into account the presence of peat on the Site, the management of soil water levels and potential to generate volumes of collected water contaminated with suspended sediment.

384. Depending on the extent of peat across the Site, it may not be possible to avoid the placement of infrastructure on areas of deep peat. However, the use of a development-wide peat depth model will enable the areas of deeper peat to be considered during layout design and, where possible, avoided (subject to other key environmental constraints). Once the design is frozen, there may be opportunities to reduce the volume of peat excavated by assessing design considerations, e.g. use of floating versus excavated track, use of piled versus gravity turbine foundations. While some excavated peat will be used in landscaping, preferred options for peat re-use would be in reinstatement and in support of wider environmental enhancement measures where opportunities for this can be identified.

385. Both infrastructure-specific mitigation and site-wide good practice measures will be specified within the PSRA and PMP, as appropriate, and will be carried forward into the CEMP and Geotechnical Risk Register (GRR). In addition to mitigation through design of the layout, implementation of good practice construction measures and controls included within the CEMP, as noted above, it is envisaged that localised mitigation measures may be required, and these will be identified through the EIA process.

9.7 Questions

Q9.1: Are the survey methods for assessing likely effects on peat considered to be appropriate?
Q9.2: Confirmation is sought that the potential effects proposed to be scoped out of the assessment are considered appropriate?
Q9.3: Are there any other relevant consultees who should be consulted with respect to the assessment of effects on hydrology and peat?

10 Noise

10.1 Introduction

386. The proposed Development may have potential noise impacts that relate to its construction, decommissioning and operation.

387. Construction impacts can arise from the provision of access tracks, turbine foundations and the construction of the turbines themselves etc, together with potential impacts relating to traffic accessing the Site via local roads.

388. Operational noise impacts can occur from aerodynamic noise generated by the turbine blades travelling through the air and generated via internal components, such as the gearboxes and generators, which are contained within the nacelle of turbines.

389. The noise assessment supporting the planning application for the proposed Development will consider these impacts with reference to applicable planning policy and relevant guidance relating to each aspect. There will also be various discussions on topics such as vibration, low frequency noise and infrasound, essentially scoping these topics out of any detailed assessment.

10.2 Existing/Baseline Conditions & Study Focus

390. The proposed Development is located in an area of relatively low population with a small number of isolated properties surrounding the Site and located *c.* 1.6km from the nearest potential turbines..

391. In general, the noise environment is expected to be typically quiet and rural with varying influence from local roads and wind induced sound from trees and foliage. Other sources will become more apparent in Tarbert village.

392. The construction and operational noise assessment will focus on dwellings in the relative vicinity of the proposed Development.

10.3 Assessment Methodology

10.3.1 Construction

393. The potential impacts arising from the construction and decommissioning of the proposed Development will be discussed with reference to relevant guidance in the form of BS 5228 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

394. The construction and decommissioning of the proposed turbines would occur at distances that are highly unlikely to breach typical construction noise limits. This combined with the temporary nature of the works means that a detailed assessment of the construction noise impacts is not often considered necessary. However, possible upgrades to local roads and provision of additional tracks relating to construction access requirements could occur in close proximity to neighbouring dwellings. As a result, only these relatively minor aspects of the proposed Development will be considered in general terms and a detailed construction noise assessment is not considered to be required for this Site. However, this aspect will be kept under review throughout the assessment process.

10.3.2 Operation

395. The operational noise assessment will be undertaken in accordance with the requirements of ETSU-R-97, The Assessment and Rating of Noise from Wind Farms, as referred to in PAN1/2011, Planning and Noise, and the recommendations of the Institute of Acoustics (IoA) publication, A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (GPG), as endorsed by the Scottish Government.

396. The guidance referred to above generally requires that background noise measurements are undertaken at a number of dwellings surrounding a particular development and with the results being correlated with wind speed measurement data collected at the Site. This enables the prevailing background noise levels for ‘quiet daytime’ and ‘night-time’ periods at the monitoring locations to be derived over a range of wind speeds and corresponding daytime and night-time noise limits to be derived in relation to these.

397. The most important part of the assessment will comprise a comparison of the predicted noise levels resulting from the introduction of the proposed Development over a range of wind speeds with the noise limits mentioned above, at the neighbouring dwellings, and derived in accordance with ETSU-R-97.

398. The limits prescribed within ETSU-R-97 are in the range of 35-40 dB L_{A90}, or 5 dB above the amenity hours prevailing background levels, whichever is the greater, for the daytime periods; and 43 dB L_{A90}, or 5 dB above the prevailing night-time background levels, whichever is the greater, for night-time periods.

399. The actual daytime value within the 35-40 dB L_{A90} range depends on the number of dwellings in the study area; the effect of the limit on the number of kWh generated; and the duration of the level of exposure to windfarm noise. The Site has a large potential area for development and, as a result, it is considered that a value at the upper end of the range would be appropriate given the potential generating capacity of the proposed renewable energy development as compared with the relatively few dwellings affected, particularly where isolated dwellings are concerned. However, it may be the case that the proposed Development can meet stricter requirements.

400. The ETSU-R-97 guidance also allows for concessions in relation to noise where a dwelling/occupier has some form of financial involvement with the wind development.

401. Background noise measurements will be undertaken at a representative number of dwellings neighbouring the proposed Development. The specifics of which will depend on the results of initial operational noise predictions and consultation with representatives of Argyll & Bute Council.

402. The noise limits prescribed within ETSU-R-97 apply to the total noise generated by various turbine sites within a specific area. As a result, attention will be given the potential combined impact of the proposed Development operating at the same time as other existing, planned and consented development in the area which could result in a combined impact of any relevance.

10.4 Potential Effects

403. As previously discussed, possible effects in relation to noise generated by the proposed Development may arise from the construction/decommissioning and operation of the development.

10.5 Approach to Mitigation

404. In terms of construction noise, best practice measures to reduce noise levels would be put in place regardless of the potential impact. If necessary, further measures such as restricted hours of working, additional noise control measures (i.e. silencers, mufflers and acoustic hoods), barriers and other additional measures set-out within BS5228, may be applied. However, it is unlikely that this would be considered necessary.

405. Operational noise may be mitigated through appropriate design of the proposed Development with due regard to other planned, consented and existing turbine development in the area and taking into account the commercially available turbines at the time of the planning application. If necessary, a reduction in operational noise levels may also be achieved via curtailment of the turbines, with a corresponding reduction in generating capacity.

10.6 Questions

Q9.1: Confirmation is sought that the proposed scope of the assessment, as set out here, is adequate.
Q9.2: Are there any other relevant consultees who should be contacted with respect to the noise resulting from the proposed Development?

11 Traffic and Transport

11.1 Introduction

406. This chapter of the EIA Report will consider the potential environmental effects associated with increased road traffic generated during the construction phase of the proposed Development, including access routes and measures to minimise disruption to the local road network. Cumulative effects will also be assessed.

11.2 Existing Conditions

407. A Route Access Survey has been undertaken by SPR to determine the feasibility of transporting abnormal loads from Campbeltown harbour to the Site along the A83. Allowing for any necessary amendments at identified pinch points, the study has revealed that this route would be feasible for the delivery of turbine components to the Site.

408. The assessment study area has been determined on the basis of the routes likely to be used by construction traffic to reach the Site. This will therefore comprise a route from the south as far as Campbeltown via the A83 and a route from the north as far as the A82 via the A83 through Inverary and Lochgilphead. In addition, the A816 north of Lochgilphead has the potential to be used by construction traffic, although this is likely to be limited to local traffic as it not a convenient route from the primary road network. The Site access point is located on the A83, just east of Corranbuie, and follows existing forestry tracks to the application boundary.

409. The A83 generally operates at an urban speed limit of 30mph and a rural speed limit of up to 60mph. The A83 forms part of the primary road network and is designed as a long distance road carrying a wide range of vehicle types, including goods vehicles. It generally carries around 2,500 vehicles a day across the Kintyre Peninsula, increasing gradually to around 5,000 a day as it passes through towns to reach the A82.

410. The A83 passes through the nearby village of Tarbert, where it is likely that construction workers may reside, providing an accessible connection for those who may journey to the Site from the village. Furthermore, the A83 also connects to the A8015 east of Tarbert, providing a connection to Tarbert Harbour and offering access to potential construction materials. North of Tarbert, the A83 meets the A816, offering a connection for construction workers potentially accessing the Site from the north.

411. Construction materials and personnel are likely to travel from both north and south along the A83 due to the location of settlements, harbours and sources of concrete and aggregate.

11.2.1 Transport Network Users

412. A reasonable pedestrian network exists within Talbert along the A83. Street-lit footways with dropped kerbs at crossing points are available throughout the village, as well as several sections of single and double yellow line parking restrictions.

413. Several sections of bicycle friendly roads exist south of Tarbert, forming part of the NCN Route 78, via the A83 and the A8024. The route eventually reaches Campbeltown, providing a continuous and accessible route from Talbert. Within Talbert, the 30mph speed restriction along the A83 provides a comfortable cycling environment for users.

414. There are several bus services that run along the A83 corridor and through the various towns and villages the road intersects. Such routes include the 449, which journeys from Lochgilphead to Campbeltown, as well as passing through Tarbert via a morning southbound service (9:00) and an afternoon northbound service (12:45). The 448 also travels along the A83, traveling from Lochgilphead to Skipness via two southbound and two northbound services (each beginning late morning and late afternoon). A further bus service, the 926, originating from Glasgow and journeying to Campbeltown via Tarbert, offers several buses in either direction, approximately every 2-3 hours from morning to early evening.

11.3 Potential Impacts

415. The potential impacts of the proposed Development include the following:

- Temporary impacts on pedestrians and cyclists during the construction works, possibly requiring diversion of public footpaths, local or national trails and cycle routes, etc. This may include residents within Campbeltown and Tarbert specifically. For example:

- it is likely that the section of the A83 running through Tarbert and Campbeltown will have a reasonable level of pedestrian and cyclist activity, due to the various facilities and housing fronting onto the road. It is possible that pedestrian/cyclist safety along this road may be compromised due to an increase in HGV's during the construction phase of the development. Such an influx in traffic may also increase levels of noise, visual and air pollution.

- Temporary impacts to local road users, including public transport, during the construction activities due to an increase in vehicle movements on the local road network and slow moving abnormal loads. Temporary road works and road closures may also be required, increasing journey times. For example:
  - an increase in traffic due to construction activities may impact the reliability and frequency of bus services described above. This is due to potential congestion if there are high volumes of unprecedented construction traffic, impacting those who may use the local services.

416. Indirect impacts as described above (on noise, visual impacts on recreational walkers etc) are assessed elsewhere in the relevant chapters of the EIA Report.

11.4 Proposed Surveys and Assessment Methodologies

11.4.1 Guidance

417. The environmental effects of traffic will be assessed in accordance with the following principle sources:

- Institute of Environmental Management and Assessment (IEMA) (1993). Guidelines for the Environmental Assessment of Road Traffic;
- Highways Agency, (2011). Design Manual for Roads and Bridges (DMRB), Volume 11, Section 2 (Part 5, HA 205/08). Also published by: Transport Scotland, Transport Wales, The Department for Regional Development (Northern Ireland);
- Argyll and Bute Council National Transport Strategy (2018); and
- Transport Scotland (2012) Transport Assessment Guidance.

11.4.2 Desk and Field Survey Method

418. Investigations have shown that suitable traffic data for the roads within the study area is obtainable from the DfT to establish the baseline volumes, including proportions of goods vehicles. A summary of the relevant Annual Average Daily Flow (AADF) data is provided in Table 11.1.

Table 11.1: Summary of AADF Counts

Location	Year	AADF Counts	
		All vehicles	HGVs
A83 north of Campbeltown	2018	2,317	179
A83 north of Corranbuie	2018	2,260	220
A83 north of Tarbert	2018	2,820	258
A83 at Lochgilphead	2018	7,428	395
A816 north of Lochgilphead	2018	4,746	337
A83 at Minard	2018	2,848	278
A83 at Auchnabreac	2018	3,059	274
A83 east of B828	2018	4,122	384
A83 west of A82	2018	5,317	370

Source: DfT

419. Injury accident data for the roads within the study area will be obtained from the DfT to ensure that any road safety issues are identified.

11.5 Assessment Method

420. The assessment will consider the potential environmental effects related to increased traffic volumes within the study area. These are likely to be generated by a range of activities including:

- construction workers arriving and leaving site areas;
- supply of construction materials and plant including turbine components;
- movement of plant;
- removal of soil resources, spoil or waste; and
- service vehicles and visitors.

421. Once construction of the proposed Development is complete, the effect on the local road system will be minimal. There will be no permanent staffing needed at the proposed Development, but access will be required from time to time for routine maintenance.

422. On the above basis, it is proposed to scope out the operational phase of the proposed Development from the EIA Report and focus on the highest level of activity, which is represented by the construction phase.

423. The EIA chapter will include a brief construction works programme, a description of the type of vehicles used during the construction phase and an estimate of the number of trips anticipated to be generated by HGVs, LGVs and other vehicles. Once the likely volume of traffic has been identified, the traffic will be assigned to the road network based on the following assumptions given that it is currently unknown:

- 100% of construction traffic (HGVs and personnel) travelling from Campbeltown harbour to Site via the A83 to represent a maximum intensification of traffic along this route.
- 100% of general construction HGVs approaching the Site from the north and routing through Lochgilphead, Ardrishaig and Tarbert (using A83) to represent maximum intensification of traffic at these sensitive receptors.
- 50% of general construction HGVs being distributed over the A816 as this route could be another option for a proportion of construction traffic originating from the north.

424. The 'Guidelines for the Environmental Assessment of Road Traffic' suggest two broad rules can be used as a screening process to identify the appropriate extent of the assessment area. These are:

- "*Rule 1 - Include highway links where traffic flows would increase by more than 30% (or the number of HGVs would increase by more than 30%); and*
- *Rule 2 - Include any other specifically sensitive areas where traffic flows would increase by 10% or more*."

425. Where the predicted increase in traffic flow is lower than the thresholds, the guidelines suggest the significance of the effects can be stated to be low or insignificant and further detailed assessments are not warranted.

426. Where construction traffic flows do exceed these thresholds, the significance of traffic and transport effects (including cumulative) will be determined by assessing the sensitivity of receptors against the magnitude of change (as determined by the considerations outlined above) to categorise significance as Major, Moderate, Minor or Negligible. The environmental effects that may be assessed are namely:

- severance;
- driver delay;
- pedestrian delay and amenity; and
- accidents and safety.

427. 'Significant' traffic and transport effects will be those effects identified as either of Major or Major/Moderate significance. These levels of effect are considered to be equivalent to significant effects referred to in the EIA Scotland Regulations 2011.

11.6 Cumulative Impact

428. The anticipated cumulative effects of the potential for overlapping construction programmes for the proposed Development in addition to other proposed developments will be considered. The mechanism to mitigate any cumulative effects is the implementation of a TMP.

429. It is important to note that a cumulative assessment in respect of traffic, transport and access effects is dependent on the likelihood of more than one windfarm being under construction at the same time as the proposed Development. This is especially pertinent to the peak construction periods associated with the importation of stone which would be dependent on the outputs of local quarries.

11.7 Approach to Mitigation

430. Mitigation measures are not anticipated to be required. However, a Traffic Management Plan (TMP) would be produced prior to the commencement of the proposed Development. The implementation of TMPs and coordination of site construction works for windfarms on similar construction programmes is also considered to provide suitable mitigation to avoid significant cumulative effects.

11.8 Questions

Q11.1 Confirmation is sought on the acceptability of the proposed study area and assessment method

12 Socio-Economics, Tourism and Recreation

12.1 Introduction

431. This section will consider the socio-economic, tourism and recreation effects potentially arising from the proposed Development. It will involve: identifying the baseline socio-economic, tourism and recreation conditions and potential receptors; how these may be impacted by the proposed Development; proposed mitigation; and residual effects arising once mitigation is taken into account.

12.2 Existing Conditions

12.2.1 Socio-Economics

432. The population of Argyll and Bute was 86,300[8] in 2018, of which 59.4% are aged between 16 and 64. At 76.2%, the proportion of the population that is economically active is slightly lower than the Scottish and UK averages (77.8% and 78.9% respectively). In comparison to the rest of Scotland, the population of Argyll and Bute has dropped significantly (5.9% over the period 1998 – 2018, contrasting with an overall population increase in Scotland of 7.1% over the same period.[9] The National Records of Scotland anticipate the population will continue to fall between 2016 and 2026, by 3.4%, in contrast to an overall population increase for Scotland of 3.2%. Over the same period, in Argyll and Bute the 16 to 24 age group is projected to see the largest percentage decrease (-24.2%) and the 75 and over age group is projected to see the largest percentage increase (+30.0%).

433. As of 2017, onshore wind supported around 7,500 jobs in Scotland (or 58% of total onshore wind employment across the UK). At Machrihanish in Argyll and Bute, the CSWind UK turbine tower manufacturing facility currently supports 6 local jobs, down from a peak of 130 at its peak[10].

434. The total community benefit contribution from all windfarms in Argyll and Bute to community councils/trusts was £841,940 in 2019[11]. SPR's presence in Argyll and Bute has seen more than £1.5 million being contributed to local communities to date. This has been through the operation of Beinn an Tuirc 1 and 2 Windfarms, Cruach Mhor Windfarm and Clachan Flats Windfarm (the operation of the consented Beinn an Tuirc 3 Windfarm will contribute further to this as well as offering a shared ownership opportunity). SPR's flexible approach to community benefit empowers local communities as the decision makers about which projects and initiatives are of greatest value to them when deciding what the community benefit is spent on.

435. As an active member of Argyll and Bute Renewable Alliance (ABRA), SPR is also working with Argyll and Bute Council, local stakeholders and other industry representatives to ensure that renewable energy boosts the local economy and creates opportunities for local people.

12.2.2 Tourism

436. Between 2016 and 2018, an average of 861,000 overnight visits and 4.8 million day visits were made to Argyll and the Isles[12]. 2018 marked a decline in the volume and value of tourism in Argyll and the Isles. Both domestic and international visits decreased which led to lower number of bed nights and total expenditure. Comparing the 2015-2017 and the 2016-2018 periods, the net decline in figures was 8% in visits, 10% in nights and 14% in spend. It is uncertain whether the decline in tourism is a long-term trend, but tourism remains a significant contributor to the regional economy.

[8] NOMIS Web reports: https://www.nomisweb.co.uk/reports/lmp/la/1946157408/report.aspx?town=Argyll%20and%20Bute#tabrespop [Accessed April 2020]
[9] National Records of Scotland: https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/argyll-and-bute-council-profile.html [Accessed April 2020]
[10] Campbeltown Courier article of 13th March 2020: https://www.campbeltowncourier.co.uk/2020/03/13/is-there-hope-for-cs-wind/{Accessed April 2020]
[11]Argyll and Bute Council 2019. https://www.argyll-bute.gov.uk/sites/default/files/wind_farm_community_benefits_11.19.pdf. [Accessed April 2020]
[12] Visitscotland data 2019 https://www.visitscotland.org/research-insights/regions/argyll-isles

437. For day trips, surveys indicate that the most popular activities were as follows:

- meal in a restaurant, café, hotel or similar establishment;
- short walk or stroll (up to 2 miles);
- sightseeing on foot; and
- long walk or ramble.

438. Whilst equivalent local data is not available, it is considered that broadly similar reasons for visiting the local area will apply.

439. The closest tourist attractions in the surrounding area are largely in and around the village of Tarbert, including the Royal Castle of Tarbert (located on the southern shore of East Loch Tarbert, 1.6 km north of the Site and 6.2 km north of the nearest proposed turbine), Tarbert nine hole golf course (2.2 km northof the Site and 6.4 km north of the nearest turbine), Loch Fyne Gallery and the Tarbert Art Studio (both 1.6 km north of the Site and 6.2 km north of the nearest proposed turbine)). Skipness Castle is also located 1.4 km to the south of the Site, and 2.8 km from the nearest proposed turbine.

440. Tarbert also provides a range of accommodation types, including hotels and B&Bs. West Loch Shores Holiday Park, which offers self-catering lodges, is 1.2 km from the Site and 4.9 km -west of the nearest turbine.

12.2.3 Recreation

441. Earraghail Renewable Energy Development comprises two adjoining woodland areas, Skipness and Corranbuie, separated by an area of open moorland. The Kintyre Way runs north-south through the Site. Field surveys undertaken to date confirm that the Kintyre Way is frequently travelled by recreational walkers. There are also a number of core paths and forestry tracks located within the Site. Additionally, ferries run from Tarbert to Portavadie to the north-east and from Claonaig to Lochranza to the east. Kilbrannan Sound, Loch Fyne and the Firth of Clyde surround the Site and are commonly used by recreational watercraft.

442. The A83 trunk road extends along the north-western seaboard of Kintyre to the west of the Site and represents a popular tourist route for recreational visitors en route to Campbeltown / Machrihanish on the southern part of the Kintyre Peninsula.

12.3 Potential Effects

443. Potential effects which will be considered in the EIA are as follows:

- Direct employment and economic effects (positive): jobs and gross value added (GVA) wholly or largely related to construction, operation and maintenance of the proposed Development.
- Indirect employment and economic effects (positive): jobs and GVA generated in the study area economy in the chain of suppliers of goods and services to the direct activities during construction and operation.
- Induced employment and economic effects (positive): jobs and GVA created by direct and indirect employees' spending in the study area or in the wider economy.
- Effects on visitor infrastructure, including attractions, accommodation and other facilities and destinations, including visual amenity of tourists.
- Effects on recreational activities within the site and surrounding area, including enhanced recreational opportunities (positive) and potential effects on visual amenity (negative).
- Cumulative employment and economic effects, tourism effects and recreational effects.

12.4 Proposed Surveys and Assessment Methodologies

12.4.1 Guidance

444. There are no UK regulations or standards to guide a socio-economic, tourism and recreation impact assessment and therefore the assessment would be informed by professional experience and knowledge. Nevertheless, the predicted impacts will refer to guidance provided within 'Handbook for EIA' published by Scottish Natural Heritage in 2013. Reference to other technical assessments, where relevant to the proposed development will be made, e.g. landscape and visual assessment, noise, cultural heritage, and traffic and transportation assessment.

12.4.2 Desktop Review and Consultation

445. A desktop review will be undertaken on all appropriate published documents and web-based information available.

446. Consultations will be undertaken with a range of potential stakeholders. The purpose of consulting these stakeholders will be to gather additional baseline information relating to tourism, recreation and employment factors, and to seek opinions and standpoints on the proposed windfarm development.

447. The results of any community consultation would be fed into the assessment. Opinions expressed by the community on key impacts within the scope of the assessment can be used to inform the impact assessment and contribute towards the agreement of proportionate and appropriate mitigation measures.

12.4.3 Assessment Method

448. Criteria for determining the significance of socio-economic, tourism and recreation effects (both positive and negative) will consider the magnitude of effects (e.g. the number of people, recreational activities or economic activities affected). However, when applying the criteria, professional judgement will be used and consideration taken of receptor sensitivity on a case by case basis, where appropriate.

449. For socio-economics, the assessment will seek to assess the likely direct employment and economic benefits during construction and operation of the proposed Development and associated indirect employment and economic benefits, such as effects on local commerce and the wider supply chain.

450. For tourism, an assessment will be made as to the likely indirect effect that the proposed Development will have on tourism activities within 15km of the site during construction and operation, based on professional judgement and latest up-to-date evidence. Reference will be made to the expected effects upon viewpoints of relevance to tourism included in the LVIA. Reference will be made to the Scottish Tourism Strategy to inform the assessment.

451. Assessment of recreation will be undertaken as to the likely effect that the proposed Development will have both within the Site (direct effects) and in the surrounding area (up to 5km) in the form of visual amenity (indirect effects). Cognisance will also be had to the potential positive effects of enhanced recreational opportunities once the proposed Development is operational.

452. An assessment of the cumulative socio-economic, tourism and recreation effects will be provided. This will be largely qualitative, although consideration will be given to the cumulative economic benefits from community benefit payments to the local economy.

12.5 Approach to Mitigation and Enhancement

453. SPR is committed to implementing accepted good practice measures during construction and operation of the proposed Development, thereby ensuring that many potential adverse social and economic effects can be avoided or reduced

454. Possible mitigation and enhancement measures may include the following:

- Measures The programming of the transportation of abnormal loads wherever practicable to avoid peak visitor, or other busy periods to mitigate the effect of the proposed Development on particularly sensitive locations, tourist/visitor viewpoints, and road corridors.
- Local sourcing of construction materials where possible to reduce the importation or exportation of materials, limiting traffic movements on the surrounding road network and hence minimising related adverse effects upon visitors.

455. It is considered that there are opportunities to enhance positive effects resulting from the proposed Development, including:

- Local promotion of contract and supply chain opportunities in the construction and operation phases to maximise the use of local business and labour resources.
- Skills development and training programmes to increase local take up of training, apprenticeship and employment opportunities associated with the proposed Development.
- Establishing effective linkages with local job centres, employability programmes and partners.

- Promotion of the wider area and its opportunities as part of the marketing of the proposed Development.

12.6 Questions

Q12.1: Is the scope of the assessment appropriate?
Q12.2: Are the proposed study areas suitable?
Q12.3: Are there any particular sources of information that should be considered?

13 Other Issues

13.1 Introduction

456. A single EIA Report chapter will be prepared to draw together the implications of the proposed Development on other elements that are not dealt with within the other technical chapters of the EIA Report. It is anticipated that this chapter would include a discussion of the following issues:

- Aviation
- Telecommunications;
- Shadow flicker;
- Climate and carbon balance;
- Population and human health
- Dust and air quality;
- Vulnerability of the proposed Development to risks of major accidents and/or disasters (including climate change); and
- Solar Glint & Glare

457. Predicted effects for all topics will be judged as being either significant or not significant and will be determined through a standard method of assessment based on professional judgement.

13.2 Aviation

13.2.1 Aviation

458. The development of wind turbines has the potential to cause a variety of adverse effects on aviation during turbine operation. These include but are not limited to:

- Physical obstructions;
- Generation of unwanted returns on Primary Surveillance Radar (PSR); and
- Adverse effects on overall performance of Communication, Navigation and Surveillance (CNS) equipment.

459. Where line of sight exists between turbines and air traffic control radars it is possible that the turbines may be detected by the radar, dependent on atmospheric conditions, and appear as clutter on controllers' screens. Such clutter may have an adverse impact on air traffic control operations.

460. Tiree Primary Surveillance Radar (PSR) is approximately 120 km north west of the Site, and Lowther Hill PSR lies approximately 110 km to the south east. These are en-route radars operated by NATS. Preliminary online data from NATS shows the proposed Development would potentially be visible to these PSRs. Glasgow Airport is approximately 57 km to the east and Prestwick Airport is approximately 59 km to the south east, although the proposed Development is not within their statutory safeguarding areas. The Site is also in a low flying military aircraft zone safeguarded by the MoD.

461. An assessment of civil and military aviation issues will be undertaken. Input will be obtained from the specialist consultants should any issues be identified that require mitigation or detailed technical assessment, including line-of sight assessments.

13.3 Telecommunications

462. Wind turbines can potentially cause interference to telecommunication system signals such as terrestrial fixed microwave links, terrestrial radio telemetry links and television broadcasts through reflecting and shadowing telecommunication signals between transmitters and receivers.

463. The potential effects on telecommunications assets arising from the proposed Development will be undertaken as part of the EIA. This is will identify any issues requiring mitigation or detailed assessment, in consultation with telecommunications asset owners.

13.4 Shadow Flicker

464. This section considers shadow flicker, an effect caused by the rotation of the turbine blades when the sun is shining, which can create a flickering or strobe like effect. This can be a cause of annoyance at residences near wind developments.

13.4.1 Guidance

465. There are no formal guidelines currently available on what exposure would be acceptable in relation to shadow flicker. There is no standard for the assessment of shadow flicker. The Scottish Government's web based guide relating to onshore wind turbines (Scottish Government 2013) suggests that as a general rule shadow flicker should not pose problems beyond a distance of 10 rotor diameters from a wind turbine, which equates to 1420 m in this instance.

466. Department of Environment and Climate Change (DECC) studies have shown that in northern latitudes shadows from wind turbines can only be cast 130 degrees either side of north relative to the turbine due to the orientation of the earth's axis and the positioning of the sun.

467. This equates to a region of 50 degrees either side of due south where a wind turbine will never cast a shadow and therefore properties within this region will experience no effects from shadow flicker.

13.4.2 Method of Assessment

468. During the design process, buffer of 10 rotor diameters will be maintained between properties and proposed turbines forming part of the proposed Development, thereby eliminating shadow flicker impacts on nearby receptors. It is proposed that the potential effects of full shadow flicker from the proposed development be scoped out of further assessment.

13.5 Climate and Carbon Balance

469. A key benefit of renewable energy is the generation of zero carbon electricity. This contrasts with the majority of electricity distributed on the UK's national grid which is generated by fossil fuels such as gas which give rise to significant emissions of greenhouse gases (GHGs). Operating wind farms deliver GHG savings by offsetting the consumption of fossil fuel generated mains electricity. During their construction and decommissioning, however, renewable energy developments can themselves result in GHG emissions, for example from turbine manufacture and site preparation. This is particularly the case where natural carbon stores such as forestry or peat are present and potentially impacted by the development.

470. Peat surveys have established the presence of peat deposits within the Site. Where peat or carbon-rich soils are present, SEPA requires planning applications for onshore wind farms to include a systematic assessment of the likely effects to these features. This requirement accords with the EIA Directive (as amended) which sets out that direct and indirect effects of development projects on climate (Article 3) and climatic factors (Annex IV) are considered.

13.5.1 Potential Impacts

471. Anthropogenic climate change is predicted to result in severe, widespread, and irreversible impacts on people and the natural world unless GHG emissions are cut sharply and rapidly. Increasing atmospheric carbon dioxide (CO_2) is being absorbed by the oceans, increasing their acidification which damages coral reefs and marine life. Snow and ice cover is reducing across many areas of the planet and incidents of extreme weather are increasing, from flooding to tropical storms. The threat of species extinction is increasing from major changes to the global landscape, and pressure is also mounting on the availability of water and food resources as ecosystems change and global populations continue to increase.

13.5.2 Method of Assessment

472. A detailed desk-based assessment will be undertaken using the latest version of the Scottish Government's online Carbon Calculator Tool published in April 2017 (currently v1.4.0) to quantify GHG emissions and savings over the project lifecycle (construction, operation and decommissioning) and derive its net GHG effect and "carbon balance period", being the time following the start of wind farm operation at which point GHG emissions from construction and decommissioning activities are offset through GHG savings resulting from wind farm operation. The assessment will draw upon a range of detailed information regarding the project area and development proposals including:

- site characteristics (e.g. average temperature, wind speed etc);

- peat type and depth (from peat survey);
- water table depth before and after construction and decommissioning;
- development proposals (turbine number and output, access tracks, size of borrow pits, hardstanding and foundation areas etc);
- details of existing and new access tracks;
- forestry to be felled (types and areas); and
- post-decommissioning replanting / restoration / drainage proposals.

473. During the design process, the wind turbines will be sited to avoid the areas of deepest peat as far as practicable and measures to minimise disturbance to peat especially during excavation will be considered. To minimise peat disturbance during construction and decommissioning Best Practicable Measures will also be considered that will be provided as part of the Construction Environmental Management Plan.

474. The resulting Carbon Balance Assessment will be prepared in accordance with IEMA's guidance document Assessing Greenhouse Gas Emissions and Evaluating their Significance in EIA (2017), and presented in the Other Issues chapter of the EIA report.

13.6 Population and Human Health

475. As per the 2019 EIA Regulations, an assessment of population and human health should be considered during the EIA process. It is proposed that this requirement will be covered through the findings of other assessments undertaken as part of the EIA process and so no dedicated EIA chapter will be produced.

476. Limited interactions with human health are possible, and consideration will be given to the findings of the following assessments in the EIA Report:

- Noise;
- Residential Amenity;
- Traffic and Transportation;
- Telecommunications;
- Aviation and Radar;
- Health and Safety at Work including best practice;
- Ice build-up on turbine blades and risk of ice throw;
- Lightning strike; and
- Risk of turbine failure and consideration of in built emergency procedures and best practice.

477. Properly designed and maintained wind turbines are a safe technology. The site design and inbuilt buffers from sensitive receptors will minimise any risk to human health resulting from the operation of the turbines.

478. As risks associated with ice build-up and lightning strike are removed or reduced through inbuilt turbine mechanisms in modern machines it is proposed that this can be scoped out of the further assessment.

479. Effects on Traffic and Transportation; Noise; Residential Amenity will be assessed in full elsewhere within the EIA Report.

480. All other potential interactions with Human Health, building in Health and Safety best practice, and a sensitive approach to layout design, resulting from ice, lightning strike and structural failures are unlikely to occur and as a result potentially significant effects are not anticipated.

13.7 Dust and Air Quality

481. This section considers the scope of the required assessment of impacts that the proposed development might have on air quality.

482. The main source of impact on air quality would be increased traffic flows on local roads during construction and emissions from construction activities including exhaust fumes and dust generated from quarrying activities associated with borrow pits and unmade ground from borrow pits and access tracks in dry conditions.

483. It is considered that the air emissions associated with these activities will be transient, localised and highly unlikely to have a significant effect upon local air quality. In addition, there are well established best practice measures applied to construction that will form an integral part of the development process e.g. speed control, optimising deliveries to site, dust control, restrictions on idling plant/vehicles, etc. These controls and measures will form an intregral part of the Environmental Management Plan for the development and will be detailed within the relevant parts of the EIA report.

484. There would be no emissions to air during operation, with the only source being occasional vehicles accessing the site for maintenance purposes. For the reasons cited above, dust and Air Quality is therefore scoped out from further assessment.

13.8 Vulnerability of the proposed Development to risks of major accidents and/or disasters (including climate change)

485. None of the following climate trends identified in UKCP09[13] could affect the proposed Development with the exception of increased windstorms:

- Increased temperature;
- Changes in the frequency, intensity and distribution of rainfall events (e.g. an increase in the contribution to winter rainfall from heavy precipitation events and decreases in summer rainfall); and
- Increased windstorms; and
- Sea level rise.

486. Braking mechanisms installed on turbines allow them to be operated only under specific wind speeds and should severe windstorms be experienced, then the turbines would be shut down. In addition, given the elevated location of the project area, flooding will not pose a significant risk to the operation of the wind farm nor will the construction of the proposed development contribute to flooding elsewhere. Therefore, it is considered unlikely that significant effects will arise as a result of the proposed development, and this topic can be scoped out of the further assessment.

13.9 Solar Glint and Glare

487. This section describes the proposed methodology for assessing solar glint and glare during operation of the proposed Development should this be required.

488. Solar panels have varying reflectivity properties; however no solar panel absorbs 100% of incoming light. As a result, solar panels have the potential to produce solar reflection in the form of solar glint (a momentary flash of bright light) and solar glare (a continuous source of bright light). Solar glint will be witnessed by moderate to fast-moving receptors whilst solar glare will be encountered by static or slow-moving receptors with respect to a solar farm.

489. Guidance states that common receptors of solar glint and glare effects are residents, road users, railway users and aviation operations. In this way, local residents who have a view of solar panels may experience solar reflection which could impact upon residential amenity. The possibility of glint and glare effects from a proposed solar development can also lead to concerns with respect to the possible impact upon road and rail safety especially if the solar PV development is to be located next to a road with fast moving and/ or busy traffic or a railway line. In terms of aviation, concerns are most likely for aircraft that are approaching or departing an airport, where solar reflections could be mistaken for aviation lighting.

490. Based on a review of current studies and consultation responses, the following study areas for the above receptors:

- Dwellings (also taken to incorporate nearby recreational users) – all properties/public paths within 1km that could have a direct view of the solar panels;
- Road users – all roads within 1km that may have a view of the solar panels;

[13] http://ukclimateprojections.metoffice.gov.uk/

- Railway users – railway lines within 100m which may have a direct view of the solar panels; and
- Aviation (air traffic controllers and pilots) – Air Traffic Control (ATC) towers and approach paths out to 30km.

491. With reference to the site boundary (as shown in **Figure 1.1**), there are a number of properties within 1km to the north and west which could have views of the solar panels, however it is likely that the solar panels will be orientated to the south/south –west meaning that it is unlikely that there will be any residential properties with direct views of the solar panels, should these be confirmed as part of the proposed Development once the design is finalised. There are a number of routes within 1km of the Site also, including the Kintyre Way, which passes through the Site. There are no railway lines within 100m (the nearest being 28km away), however there are two aerodromes within 30km, namely Bute Airfield (approximately 17.5km to the east), and Gigha Airfield (27.8km to the south-west).

492. In general terms, and based on the above guidance, the broad approach to the assessment will be as follows:

1. Identify the receptors of concern. In this instance the concern is reflections of the sun from the solar panels toward road users, dwellings, public routes and ATC/flight paths, particularly to the south of the solar array;
2. Choose appropriate receptor locations for the assessed roads, dwellings, routes and ATC/flight paths;
3. Define the proposed solar farm area and choose an appropriate assessment resolution49;
4. Undertake geometric calculations to determine whether a solar reflection may occur at each receptor, and if so, when it will occur;
5. If a reflection will occur, determine whether the reflecting panels will be visible from the identified receptor locations or whether site topography or screening will limit visibility;
6. If it is calculated that a reflection will occur, consider the location of the solar reflection with respect to the location of the sun in the sky, its angle above the horizontal and the time of day at which a reflection could occur;
7. Determine whether the solar reflection is likely to be a significant hazard to safety;
8. Consider mitigation such as shielding of the site.

493. In relation to the guidance, a major effect is one where a solar reflection is geometrically possible and visible under conditions that will produce a significant impact.

494. Consultation will be undertaken with the relevant consultees (including licensed aerodromes and Transport Scotland) to determine the requirement for an assessment or mitigation should the assessment determine that solar reflection be geometrically possible and visible at the assessed receptors.

13.10 Forestry

13.10.1 Introduction

495. This section details the way in which potential effects of the proposed Development on the woodland/forestry areas within the Site will be assessed. It is not proposed to dedicate a specific assessment chapter within the EIA report to deal with this aspect; however, it will be assessed where relevant in other technical chapters, primarily ecology, LVIA and hydrology.

13.10.2 Baseline Description

496. The Site predominantly comprises commercial coniferous plantation in rotation, with areas open moorland habitat between the two FLS sites of Corranbuie to the north and Skipness to the south. Corranbuie Forest extends to 1065ha and Skipness Forest extends to 1165ha. The eastern coastal fringes are dominated by Atlantic oakwoods designated as the Tarbert to Skipness Coast SSSI and Tarbert Woods SAC, and no renewable energy development infrastructure is proposed for these areas. The northern part of Corranbuie backs onto Tarbert village. Much of Corranbuie is a diverse matrix of conifers and open space. Skipness has more productive plantations, but also a significant area of windblow to clear. Ancient semi-natural woodland has been recorded within the SSSI/SAC, adjacent riparian areas and in northwest Corranbuie.

497. The woodland is owned managed by FLS.

13.10.3 Policy and Guidance

498. Relevant policy and guidance which will be considered during the EIA include:

- Scotland's Forestry Strategy 2019-2029 v.05/02/19;
- Control of Woodland Removal, Forestry Commission Scotland, 2009;
- Climate Change (Scotland) Act 2009; ;
- Guidance to Forestry Commission Scotland Staff on implementing the Scottish Government Policy on control of woodland removal, March 2015; and
- The UK Forestry Strategy 2017.

13.10.4 Method of Assessment

499. Any areas of anticipated loss of woodland cover as a result of the proposed Development will be assessed within the EIA report but primarily within the relevant technical chapters. These will primarily relate to impacts upon habitat and related species, landscape character and visual amenity and hydrological regimes.

500. In addition to the assessment, the total area, age class and species composition of the woodland area will be further recorded to inform the assessment process as necessary.

501. Opportunities for compensatory planting and/or habitat improvement will be outlined in conjunction with the Ecology section of the EIA report. This will include consideration of potential effects upon other disciplines covered within the EIA report as a result of proposed planting.

13.10.5 Key issues for consideration in the EIA

502. Any woodland removal will be required to demonstrate compliance with the Scottish Government's policy on the control of woodland removal (FCS, 2012). Where felling is permitted but woodland removal is not supported, conditions conducive to woodland regeneration will be maintained through adherence to good forestry practice as defined in the UK Forestry Standard. Any areas identified for potential compensatory planting elsewhere within the Site will be assessed for potential impacts by relevant topic specialists.

503. Furthermore, the Scottish Government's Policy on "control of woodland removal" includes a number of situations where felling could be carried out without the need for compensatory planting. One of the listed criteria's is – "enhancing priority habitats and their connectivity". There are two potential opportunities for complying with this criteria:

504. Peat restoration. This will be investigated to establish if there are areas of peat that could potentially be restored and the best location to comply with the criteria within the Site.

505. Enhancing the native broadleaved woodland along the coastal SAC. Discussions will be held with Scottish National Heritage to establish what opportunities (if any) there may be to enhance the SSSI through the proposed Development, and the extent to which these will be accepted by Forestry Scotland as reducing the overall requirement for compensatory planting.

506. All these key issues will be taken account of in the development of an updated land management plan to be produced and submitted along with the EIA report and application.

13.11 Questions

Q13.1. Are the scopes of the proposed assessments appropriate?
Q13.2. Are there any particular consultees, in addition to those included in Appendix A or mentioned above, who should be contacted to inform the assessment of effects included in this chapter?
Q13.3: Do consultees have any initial comments to make in relation to potential effects arising from solar glint and glare?

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