



HIGH CONSTELLATION WIND FARM

Scoping Report for Proposed Turbine Tip Height Increase

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EXECUTIVE SUMMARY

Section 36 consent and deemed planning permission for High Constellation Wind Farm (ECU Reference: ECU00001857) was granted by the Scottish Ministers in June 2020. The consented High Constellation Wind Farm comprises 10 turbines with a tip height of 149.9 metres (m), electricity storage facility, and associated infrastructure at a site within Argyll and Bute for a period of 30 years (the "Consented Development"). The generation capacity exceeds 50 megawatts (MW).

The Consented Development is located on the Kintyre Peninsula approximately 4 kilometres (km) southeast of Clachan, 10 km north of Carradale and 18 km south of Tarbert, Argyll and Bute (the "Site"), as detailed on Figure 1.1 in Appendix A. The Site extent includes the existing Cour Wind Farm access track which connects to the A83, approximately 4 km north of Clachan, while the majority of infrastructure associated with the Consented Development is located in the south of the Site, as illustrated on Figure 1.2a-c in Appendix A. The Site lies wholly within the administrative boundary of Argyll and Bute Council (the Council).

High Constellation Windfarm Limited (the Applicant) intends to apply to the Scottish Government for consent under either Section 36 or Section 36C of the Electricity Act 1989 (as amended)¹ (the Electricity Act 1989), seeking permission for the construction and operation of a revised wind farm with a generating capacity in excess of 50MW on the Site of the Consented Development (the "Revised Development").

This Scoping Report forms the Applicant's written request to the Scottish Government, under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended² (the EIA Regulations), for its opinion as to the information to be provided in the Environmental Impact Assessment (EIA) Report (EIA Report) for the Revised Development (i.e. its 'Scoping Opinion').

The key aspect of the Revised Development is an increase in tip height from 149.9 m (as per the Consented Development) to up to 180 m. All other associated infrastructure may be subject to minor changes to accommodate larger turbines, however, the fundamental design will remain and any changes will be assessed, as appropriate.

As an EIA for the Consented Development has been completed, the EIA for the Revised Development will focus on **additional, significant** effects on the environment anticipated beyond those identified within the Consented Development's EIA Report. These are expected to be the **additional effects** occurring as a result of the turbine height increase.

The final form of the application, specifically whether consent is applied for under Section 36 or Section 36c of the Electricity Act will be agreed with the Scottish Government prior to submission.

The aim of this Scoping Report is to identify key environmental considerations associated with the Revised Development; specifically, if any **additional, significant** effects on the environment are anticipated beyond those identified within the Consented Development's EIA Report³, so that further assessment is required to support the Revised Development's application. Where there is no change to the findings within the Consented Development's EIA or where significant effects are not likely, these elements can be scoped out of further assessment, in line with the EIA Regulations.

Table A provides a summary of effects that are deemed to be not significant and are therefore scoped out and will not be considered further within the EIA Report for the

¹ UK Government, 1989, Electricity Act 1989 [Online] Available at: <http://www.legislation.gov.uk/ukpga/1989/29/contents> (Accessed 31/01/2022)

² The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 <http://www.legislation.gov.uk/ssi/2017/101/contents/made> (Accessed 31/01/2022)

³ High Constellation Environmental Impact Assessment Report 2019.

Revised Development. The evidence, on which these decisions have been based, is described within each technical section of this document.

Table A: Technical Aspects and Assessments to be Scoped Out

Technical Area	Elements to be Scoped out of EIA
Energy and Planning Policy (Section 4)	N/A
Landscape and Visual (Section 5)	Based on the ZTV, all Local Character Assessments outwith 20 km of the Revised Development where there is sufficient actual visibility for a significant effect to arise. Landscape designations where there is insufficient actual visibility for a significant effect to arise. Mapped interests where there is insufficient actual visibility for a significant effect to arise. All settlements, roads, core paths, and other recreational routes outwith 20 km.
Ecology (Section 6)	The following potential construction and operational effects: <ul style="list-style-type: none"> • Direct and indirect effects on designated sites; • Direct habitat loss and disturbance; • In-direct habitat disturbance; • Indirect and direct effects on protected fauna. • Indirect and direct effects on GWDTEs. Collision risk to bats and lighting effects during the operational period will be scoped in.
Ornithology (Section 7)	Habitat loss. Construction disturbance. Operational displacement. Barrier Effects.
Geology, Hydrology and Hydrogeology (Section 8)	Impacts on water quality and quantity to private water supplies. Chemical pollution effects on the hydrological environment; Potential erosion and sedimentation effects on the hydrological environment. Potential impediments to stream flow. Potential changes to soil and peat interflow patterns. Potential for the compaction of soils. Potential effects for the hydrological function on GWDTEs. Potential for increase in run-off and flood risk. Cumulative Impacts.
Cultural Heritage and Archaeology (Section 9)	Direct effects upon archaeology. All other heritage assets not included in Tables 9.2 and 9.3.
Noise (Section 10)	Low Frequency Noise and Infrasound. Amplitude Modulation. Ground Borne Vibration. Construction Noise.
Traffic and Transport (Section 11)	All Traffic and Transport impacts excluding updated Abnormal Load Route Assessment (ALRA).
Forestry (Section 12)	All Forestry impacts.
Socio-Economics, Tourism and Recreation (Section 13)	Changes in Land Use. The increase to socio-economic benefits as a result of larger turbines and higher capacity.
Climate Change and Carbon Balance (Section 14)	The vulnerability of the Revised Development to climate change and extreme climate events.

Technical Area	Elements to be Scoped out of EIA
Other Issues (Section 15)	Utilities. Health and Safety.

1 INTRODUCTION

1.1 Introduction

This Scoping Report has been prepared by Arcus Consultancy Services Ltd (Arcus) on behalf of High Constellation Windfarm Limited, hereafter referred to as 'the Applicant'.

Section 36 consent and deemed planning permission for High Constellation Wind Farm was granted by the Scottish Ministers in June 2020 (ECU Reference: ECU00001857) (the "Extant Consent"). The consented High Constellation Wind Farm comprises of 10 turbines with a tip height of 149.9 metres (m) and electricity storage facility, with a generation capacity exceeding 50 megawatts (MW), and associated infrastructure at a site within Argyll and Bute for a period of 30 years (the "Consented Development").

The Consented Development is located on the Kintyre Peninsula approximately 4 kilometres (km) southeast of Clachan, 10 km north of Carradale and 18 km south of Tarbert, Argyll and Bute (the "Site"), as detailed on Figure 1.1 in Appendix A. The Site includes the existing Cour Wind Farm access track which connects to the A83, approximately 4 km north of Clachan, while the majority of infrastructure associated with the Consented Development is located in the south of the Site, as illustrated on Figure 1.2a-c in Appendix A. The Site lies wholly within the administrative boundary of Argyll and Bute Council (the Council).

The of the Revised Development is an increase in tip height from 149.9 m (as per the Consented Development) to up to 180 m. All other associated infrastructure may be subject to minor changes to accommodate larger turbines, however, the fundamental design will remain and any changes will be assessed, as appropriate. Currently, the following minor changes to the Consented Development are proposed:

- An increase in turbine tip height of the Consented Development, specifically increasing the tip height from 149.9 m up to a maximum of 180 m;
- An increase to the Consented Development's crane hardstanding dimensions to accommodate the larger turbines;
- An additional temporary compound, approximately 800 m³ in size, located between T1 and T2;
- The use of the 'Laydown Area' proposed as part of the Consented Layout is being modified to a storage compound as noted on Figure 1.2a-c i.e. 'A – Storage Compound'.

As an EIA for the Consented Development has been completed, the EIA for the Revised Development will focus on **additional, significant** effects on the environment anticipated beyond those identified within the Consented Development's EIA Report. These are expected to be the **additional effects** occurring as a result of the turbine height increase.

The Applicant intends to apply to the Scottish Government for consent under either Section 36 or Section 36C of the Electricity Act 1989 (as amended)⁴, seeking permission for the construction and operation of a revised wind farm with a generating capacity in excess of 50 MW on the Site of the Consented Development (the "Revised Development").

The Scoping Report forms the Applicant's written request to the Scottish Government, under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended⁵ (the "EIA Regulations"), for its opinion as to the information to be provided in the Environmental Impact Assessment (EIA) Report (EIA Report) for the Revised Development (i.e. its 'Scoping Opinion'). The final form of the application, specifically whether consent is applied for under Section 36 or Section 36c of

⁴ UK Government, 1989, Electricity Act 1989 [Online] Available at: <http://www.legislation.gov.uk/ukpga/1989/29/contents> (Accessed 31/01/2022)

⁵ The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 <http://www.legislation.gov.uk/ssi/2017/101/contents/made> (Accessed 31/01/2022)

the Electricity Act will be agreed with the Scottish Government prior to submission. Further detail on the Scoping process can be found in Section 1.4.1.

The Scoping Report is supported by the following appendices:

- Appendix A: Scoping Figure List and Figures;
- Appendix B: List of Suggested Consultees;
- Appendix C: Consented Development Cultural Heritage Desk based Assessment.

1.2 The Applicant

The Applicant is High Constellation Windfarm Limited, a wholly owned subsidiary of BayWa r.e. UK Limited.

BayWa r.e. UK Ltd is a leading, international renewable energy project developer and service provider with offices in Glasgow, Edinburgh, Milton Keynes and Dublin. In the UK and Ireland, BayWa r.e. has installed over 650 MW of wind and solar renewable energy projects; including delivering over 150 MW of wind energy and is currently developing over 300 MW of onshore wind including the construction of 43 MW in Scotland. BayWa r.e. UK Ltd also provides technical and commercial services, and manages more than 1.5 Gigawatts (GW) of operational solar and wind assets for its clients.

BayWa r.e. UK Ltd is part of the leading global renewable energy company BayWa r.e. Established in 2009 BayWa r.e. is a leading global renewable energy developer, service supplier, wholesaler and energy solutions provider. Globally, BayWa r.e. has brought over 2.5 GW of energy online, while managing over 5 GW of assets.

1.3 Planning History

As detailed in Section 1.1, Section 36 consent and deemed planning permission for High Constellation Wind Farm was granted by the Scottish Ministers on 26th June 2020, under reference ECU00001857.

Since the Section 36 application submission for the Consented Development in June 2019, there have substantial advances in global turbine technology, making it necessary for onshore wind sites to be designed to maximise site yield and efficiency whilst minimising environmental impacts. Maximising site yield is often achieved through utilisation of the most modern wind turbine technology, including larger wind turbines. Every unit of electricity produced by a wind farm development displaces a unit of electricity which would otherwise have been produced by a conventional (coal or gas) power station, and therefore presents carbon savings.

Additionally, the European and Global wind turbine manufacturing markets are progressing rapidly to more efficient turbines, and as a result the manufacture of turbines smaller than 150 m is reducing meaning turbines at this scale are becoming increasingly challenging to procure.

Given these advances in technology and changes in manufacturing practices the Applicant is now looking to maximise the output from the project and intends to seek consent for taller turbines supported by a comprehensive proposal demonstrating the acceptability of larger, viable and more efficient turbines.

The Consented Development's Environmental Impact Assessment Report (EIA Report) as well as the decision notice are available to view and download from the Energy Consents Unit (ECU) website (Ref: ECU00001857). The consent is subject to 25 planning conditions. The decision notice provides a useful narrative of the issues that were most important for the Consented Development and it is anticipated that they will be similar for a Revised Development.

1.4 Environmental Impact Assessment & Scoping

With a potential overall generating capacity of over 50 MW, consent for the Revised Development is being sought from the Scottish Ministers under Section 36 or Section 36c of the Electricity Act 1989. The requirement for EIA in Scotland for wind farm generating stations with an electrical output capacity in excess of 50 MW is provided under Part 4 of the EIA Regulations.

Schedule 2 of the EIA Regulations lists developments for which an EIA is required for certain types of development where there are likely to be significant effects on the environment by virtue of factors such as the nature, size or locations of the development proposal. The Consented Development was subject to an EIA, therefore the Revised Development, as a variation of a previous EIA development, will also require an EIA.

The results of the EIA will be presented in an EIA Report which, as prescribed in the EIA Regulations, is required to include a “description of the likely significant effects” of the Revised Development; the effects which are not considered to be significant do not need to be described. It is therefore necessary for the scope of the EIA to be appropriately and clearly defined to ensure that any likely significant effects are defined, described and assessed.

1.4.1 Scoping Request

Following consideration of the characteristics of the Revised Development, the location of the Site and the characteristics of the potential impacts, as outlined within Schedule 3 of the EIA Regulations, the Applicant recognises that this is an ‘EIA Development’.

In line with Regulation 12 of the EIA Regulations, the Applicant is seeking to confirm the scope of the required assessment to be provided in the Environmental Impact Assessment Report (EIA Report), i.e. a “Scoping Opinion”. This Scoping Report provides supporting information to help the ECU to form a Scoping Opinion for the Revised Development. This is intended to guide the information to be included within the EIA Report, which will accompany the Section 36/ Section 36c application. The final form of the application, specifically whether consent is applied for under Section 36 or Section 36c of the Electricity Act 1989 will be agreed with the Scottish Government prior to submission.

To aid this process, this Scoping Report includes the following:

- A description of the location of the Revised Development including figures identifying the Site and the parameters of development;
- Figures identifying the designated and sensitive environmental receptors surrounding the Site; and
- A brief description of the nature and purpose of the Revised Development and its potential resultant effects.

The extensive environmental assessment work undertaken for the Consented Development provides a thorough understanding of the environmental issues and enables the scope of the forthcoming EIA for the Revised Development to be focussed on topics that are likely to experience **additional, significant** effects.

The aim of the Scoping process is therefore to identify key environmental considerations associated with the Revised Development; specifically, if any **additional, significant** effects on the environment are anticipated beyond those identified within the Consented Development’s EIA Report.

It is also possible to remove from the scope of the EIA those environmental topics where no significant effects were previously identified, and no additional significant effects are

likely to arise as a result of changes to the scheme. This is in line with paragraph 153 of Planning Circular 1/2017: Environmental Impact Assessment Regulations⁶ which states:

"Development which comprises a change or extension requires EIA only if the change or extension is likely to have significant environmental effects (determined through the screening process). However, the significance of any effects must be considered in the context of the existing development."

In addition, Paragraph 154 clarifies what aspects of the application should be assessed:

"It should be noted that the applicant can be asked to provide an EIA report only in respect of the specific application made. Therefore, where an application concerns a change or extension to an existing development, the applicant should be asked to provide an EIA report only in respect of the propose change or extension."

And concludes:

"the information provided in the EIA report should accord with the requirements of Regulation 5 and Schedule 4 (Annex B refers) of the EIA Regulations. A scoping report can assist in setting out those effects that should be addressed."

This document identifies the potential significant environmental effects associated with the Revised Development - beyond those already identified (and assessed) during the original Consented Development EIA. In short, the assessment will be confined to the assessment of any **additional, significant** potential effects. Proposed methodologies are outlined, and consultees are invited to provide comments on the approach to the EIA and the content of the EIA Report. As appropriate, and to aid consideration, the Scoping Report summarises survey work undertaken to date.

Given the iterative nature of the EIA process, the final design of the Revised Development will be led by the forthcoming EIA process. This Scoping Report includes illustrations of a preliminary turbine dimension associated with the Revised Development which represents an indicative design. The results of the Scoping process will feed into the iterative design of the Revised Development. For the purposes of the EIA, a precautionary approach will be taken and a worst case scenario will be identified and assessed for each receptor as appropriate.

⁶ Scottish Government (2017) Planning Circular 1/2017: Environmental Impact Assessment Regulations [online] Available at: [https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/pages/20/\(07/03/2022\)](https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/pages/20/(07/03/2022))

2 THE REVISED DEVELOPMENT

The Revised Development is located on the Kintyre Peninsula approximately 4 km southeast of Clachan, 10 km north of Carradale and 18 km south of Tarbert, Argyll and Bute (the Site), as detailed on Figure 1.1 in Appendix A. The Revised Development red line boundary is the same as the Consented Development and occupies an area of 1,317 hectares (ha) which includes some approximately 11 km of existing access wind farm track used for Cour Wind Farm, as shown on Figure 1.1 in Appendix A, and is centred on National Grid Reference (NGR) 180000, 650000. The Site lies wholly within the administrative boundary of the Council.

The topography of the Site and immediate vicinity is relatively complex, as shown on Figure 1.2a-c in Appendix A. The elevation of the Site ranges from 264 m Above Ordnance Survey Datum (AOD) on the summit of Cnoc a t-Samhlaidh in the southwest of the Site, and falls to around 30 m AOD where the eastern boundary runs adjacent to the B842 road. Including Cnoc a t-Samhlaidh, there are a number of notable hilltops across the Site.

There are a number of watercourses within the Site, as well a number of small lochs and lochans.

The predominant land use within the Site consists of commercial forestry plantation, however there are also extensive areas of rough upland moorland.

The operational Cour Wind Farm, consisting of ten turbines, is immediately to the south, while other operational wind farms are present at Deucheran Hil, 5 km to the south, and Freasdail, 6.3 km to the north. Additionally, there are a number of wind farm applications currently at scoping, application and consent stage, including:

- Cnoc Breacam Wind Farm, located 2.5 km north of the Site (Pre-Application Stage);
- Sheirdrim Hill, located 3.6 km north of the main area of the Site which is currently been referred to the Scottish Government's Planning and Environmental Appeals Division (DPEA), and;
- Eascairt Wind Farm, located approximately 5.5 km north (Consented via DPEA).

No public roads are located within the Site, although a number of existing forest roads, including the access track for the operational Cour Wind Farm are located within the Site. The Kintyre Way runs along and crosses a short section of the access track, north of the core area of the Site.

The nearest settlement is Clachan, 4 km to the northwest, and there are a number of dispersed properties surrounding the Site, predominantly to the east along the B842. No properties are within 1.5 km of the turbine locations or within the Site.

As detailed in Section 1.1, the Revised Development will comprise of an increase in tip height from 149.9 m, as per the Consented Development, to up to 180 m. The ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however, the fundamental design will remain and any changes will be assessed, as appropriate. At this stage, the following minor changes to the Consented Development are proposed:

- An increase in turbine tip height of the Consented Development, specifically increasing the tip height from 150 m up to a maximum of 180 m;
- An increase to the Consented Development's crane hardstanding dimensions to accommodate the larger turbines;
- An additional temporary compound, approximately 800 m³ in size, located between T1 and T2;
- The use of the 'Laydown Area' proposed as part of the Consented Layout is being modified to a storage compound as noted on Figure 1.2a-c i.e. 'A – Storage Compound'.

A summary of the key development characteristics of the Consented Development and those proposed as part of the Revised Development is provided in Table 2.1 below.

Table 2.1: The Revised Development Key Characteristics

Component	Consented Development	Changes proposed as part of the Revised Development
Wind Turbines	<p>No. of turbines: 10 Turbine Height (to tip): 149.9 m and a rotor diameter up to 136 m.</p> <p>Each turbine will have a foundation with a diameter of between 16 and 21 m, with a depth of up to 3.5 m</p>	<p>No. of turbines: 10 Turbine Height (to tip): 180 m and a rotor diameter up to 150 m.</p> <p>Each turbine will have a foundation with a diameter of between 16 and 21 m, with a depth of up to 3.5 m</p>
Access Tracks	<p>The access track to Cour Wind Farm currently runs through the Site, and the Consented Development will make use of this existing track and will act as a spine road serving the Consented Development. Up to an additional 4.7 km of new access track will require to be constructed, and 4.4 km of forestry track will require to be upgraded. In addition, approximately 4 km of existing track will be upgraded for the purposes of delivering the Habitat Management Plan (HMP).</p>	<p>No changes.</p>
Electrical Infrastructure including Battery Storage	<p>A substation and control building will be required at the Site. Currently the location of this has not been finalised, as it will depend somewhat on the nature of the grid connection (to the recently constructed Crossaig substation, which is also located on the Site). For this reason, two locations have been assessed, one located close to the turbine array (Substation A), the second located close to the Crossaig substation (Substation B). Only one of these locations will be built though if the location beside Crossaig substation is selected, then there may be a small welfare kiosk located near the turbine array. The substation / control building compound will measure up to 110 m x 80 m. The compound will also include any external electrical infrastructure and vehicle parking.</p> <p>The battery storage facility will also be located within the compound. It will comprise up to 30 storage units of 6 m x 2.45 m x 2.6 m. This is the size of a standard lorry container.</p> <p>Underground cabling, laid where possible alongside the access tracks, will link the turbine transformers to the onsite substation.</p>	<p>Two substation locations to be considered in the Revised Development EIA Report:</p> <ul style="list-style-type: none"> Final location of substation and control building selected – Substation Option B. Anticipated to be microsituated within 100 m of the existing Crossaig substation. <p>No other changes proposed.</p>

Component	Consented Development	Changes proposed as part of the Revised Development
Crane Hardstanding	<p>Crane hardstandings will be required adjacent to each turbine, this will consist of a main area of approximately 1250 m² at each turbine.</p> <p>In addition to the main hardstanding area there will be additional flattened areas for crane assembly and turbine blade storage, however these will be temporary and only include small areas of hardstandings.</p>	<p>As result of the increase in turbine height and different candidate turbine, the Applicant is proposing to alter the Consented Development's crane hardstanding dimensions (consented approximately 1,250 m³); however, the final design will be subject to the turbine engineer specifications.</p>
Temporary Construction Compound	<p>Two temporary construction compounds will be required during the construction of the Consented Development. One will utilise the area previously used during the construction of Cour windfarm close to the Site entrance off the A83 (approximate NGR 179210, 658900), which currently has full planning consent to be used as a laydown area for forestry operations. The second, close to the main turbine array (approximate NGR 179400, 648800), will comprise an area of hardstanding providing space for portacabins, parking and potentially temporary blade storage (i.e. the laydown area)</p>	<p>An additional temporary compound is proposed between T1 and T2 and will be approximately 800 m³.</p> <p>The use of the 'Laydown Area' proposed as part of the Consented Layout is being modified to a storage compound as noted on Figure 1.2a-c i.e. 'A – Storage Compound'.</p>
Borrow Pits	<p>Two onsite borrow pits are proposed with an additional proposal to win small amounts of stone from outcrops adjacent to the main access track to construct the spur roads to Turbine 1 and Turbine 2. Given that there is little new track, relatively little aggregate will be required when compared to a typical wind farm of this size, and the use of both borrow pits may not be required. It is estimated that these will have substantial additional capacity to that required for construction materials, which allows some flexibility and it is very likely that the final borrow pit dimensions will be smaller than those presented.</p>	<p>A planning application for an additional borrow pit was submitted to the Council in November 2021 for a new borrow pit with the following development description: <i>"Extraction of 25,000 tonnes of quality stone to construct a forestry track for use during the removal of timber from the Habitat Management Plan Area of the consented High Constellation Windfarm"</i> (Council Planning Ref: 21/02007/MIN).</p> <p>The additional borrow pit is proposed to be located adjacent to the existing HMP track. The application is still awaiting a decision.</p> <p>No other changes proposed.</p>
Anemometry Mast	<p>An anemometry mast will be constructed for the life span of the wind farm, of a height similar to the hub height of the proposed wind turbines, with a small foundation of approximately 6 x 6 m.</p>	<p>No changes.</p>

Component	Consented Development	Changes proposed as part of the Revised Development
Site Access	It is proposed to access the Site via an existing junction off the A83 which serves the operational Cour Wind Farm.	No changes anticipated; however, final design and width of the access junction will be subject to turbine and engineer specifications.

The Revised Development seeks to increase the maximum consented height of the turbines from 149.9 m to up to 180 m to tip above ground level and the indicative turbine coordinates currently remain unchanged from the Consented Development, as presented in Table 2.2, with the Site Layout shown on Figure 1.2a-c in Appendix A. It is noted that this layout may change following completion of the full EIA and consultation exercise.

Table 2.2: Consented/Revised Development Turbine Coordinates and Elevations

Turbine No.	Easting	Northing	Elevation (m) AOD
1	178192	649993	207
2	178499	649575	204
3	178721	649262	181
4	179028	648810	191
5	179688	648872	224
6	179394	649421	247
7	179284	649862	205
8	179821	649962	218
9	179967	649377	239
10	180381	649211	218

3 EIA METHODOLOGY

EIA is an iterative assessment process with the aim of avoiding or reducing the potential effects resulting from the Revised Development through the continual refinement of the design of the Revised Development. These effects can occur throughout all phases of the Revised Development from construction, through operation and during decommissioning. Any potential effects will be mitigated utilising the mitigation hierarchy of avoid, reduce, offset and compensate.

The results of the EIA will be presented in an EIA Report, which as prescribed in the EIA Regulations, is required to include a "*description of the likely significant effects*" of the Revised Development likewise effects which are not considered to be significant do not need to be described. It is therefore necessary for the scope of the EIA to be appropriately defined to ensure all significant effects are covered. Schedule 4 of the EIA Regulations details what information is required to be included within the EIA Report and states:

- A description of development, including location, characteristics, operational process, and estimate of residues and emissions;
- A description of reasonable alternatives (location, design etc.) with an indication of reasons for the chosen option;
- A description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution without implementation of the project on the basis of available and relevant information;
- A description of the factors likely to be significantly affected by the development e.g.), population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape;
- The description of the likely significant effects including both direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.
- 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.
- 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.
- A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.

As detailed in Section 1.4.1, the extensive environmental assessment work undertaken for the Consented Development provides a thorough understanding of the environmental issues and enables the scope of the forthcoming EIA to focus on topics that are likely to experience **additional, significant** effects.

The aim of the EIA Report for the Revised Development is therefore to identify any **additional, significant** effects on the environment are anticipated beyond those identified within the Consented Development's EIA Report.

This is in line with paragraph 153 of Planning Circular 1/2017: Environmental Impact Assessment Regulations⁷ which states:

“Development which comprises a change or extension requires EIA only if the change or extension is likely to have significant environmental effects (determined through the screening process). However, the significance of any effects must be considered in the context of the existing development.”

3.1 Scope of EIA

As detailed in Section 1.4.1, the aim of the Scoping process is to identify key environmental considerations associated with the Revised Development; specifically, if any **additional, significant** effects on the environment are anticipated beyond those identified within the Consented Development’s EIA Report. Where there is no change to the findings within the Consented Development’s EIA or where significant effects are not likely, these elements will be scoped out for further assessment, in lines with the EIA Regulations. The EIA Report will identify the assessment methodologies based on recognised good practice and guidelines specific to each of the relevant environmental topic areas where the proposed variation could result in significant effects. In general terms, the technical studies undertaken for each topic area and chapter included in the EIA Report to accompany the Revised Development’s application would include:

- Baseline information about the receiving environment, largely based on the baseline presented within the Consented Development’s EIA Report, together with identification of any relevant trends in, or evolution of, the baseline;
- Consultation with experts and relevant consultees as necessary;
- Consideration of the potential effects of the Revised Development on the baseline, followed by identification of any additional mitigation measures to seek to avoid or reduce any predicted adverse effects;
- Assessment and evaluation of any residual significant effects after mitigation measures have been implemented; and
- Compilation of the EIA Report chapter.

This Scoping Report considers the potential effects of the Revised Development, comparing it to the findings in the Consented Development’s EIA Report, and determines if further assessment is required. Full details are found within the following sections of this Scoping Report:

- Section 4: Energy and Planning Policy;
- Section 5: Landscape and Visual Impact Assessment;
- Section 6: Ecology;
- Section 7: Ornithology;
- Section 8: Geology, Hydrology and Hydrogeology;
- Section 9: Archaeology and Cultural Heritage;
- Section 10: Noise;
- Section 11: Traffic and Transportation;
- Section 12: Forestry;
- Section 13: Socio-Economics, Recreation and Land-use;
- Section 14: Climate Change;
- Section 15: Other Issues (Shadow Flicker, Telecommunications, Aviation and Health & Safety).

⁷ Scottish Government (2017) Planning Circular 1/2017: Environmental Impact Assessment Regulations [online] Available at: [https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/pages/20/\(07/03/2022\)](https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/pages/20/(07/03/2022))

3.2 Approach to the EIA

As stated previously, EIA is an iterative process aimed at identifying and assessing the potential effects arising as a result of a proposed development. Any effects identified will be used to inform and refine the design of the development. Where adverse effects are identified that cannot be avoided through embedded mitigation, suitable mitigation measures to reduce or offset effects will be proposed. In addition, the EIA will be used to identify potential enhancement measures that could be applied to maximise beneficial effects.

The main steps of the EIA process are broadly summarised as follows:

- **Scoping (Current Stage):** The Scoping Opinion from the Council will be used to inform and focus the scope of the EIA on likely **additional, significant** effects that could be anticipated to occur as a result of the Revised Development; **Baseline studies:** Desk-based assessment (DBA), updated baseline surveys and site visits will be undertaken, where appropriate, in order to determine the updated baseline conditions of the environment and area that may be affected by the Revised Development beyond those identified within the Consented Development's EIA Report. For the purposes of the Revised Development, preliminary baseline studies undertaken for the Consented Development's EIA Report have been used to inform this Scoping Report and will inform the EIA Report, where appropriate;
- **Predicting and assessing effects:** Potential **additional, significant** interactions on the environment beyond those identified within the Consented Development's EIA Report will be considered. The nature of effects, e.g. direct or indirect; positive or negative; long, medium or short term; temporary or permanent, will be predicted and assessed. Potential cumulative effects arising from Revised Development in conjunction with other proposed or consented developments will also be considered;
- **Mitigation and assessment of residual effects:** Potential **additional, significant** effects will be avoided or reduced wherever possible through embedded mitigation. Where this is not possible, additional operational mitigation or other measures to reduce and/or offset **additional, significant** effects will be proposed. The residual effects will then be assessed to determine any effects predicted to remain following implementation of the recommended mitigation measures; and
- **Production of the EIA Report:** The results of the EIA will be set out in the EIA Report.

3.2.1 Assessment Methodology

In order to assess the potential effects arising from the Revised Development, the significance of such effects will be determined, in accordance with the requirements of the EIA Regulations. The determination of significance is based on professional judgement; however, fundamentally, the overall effect on a receptor relates to the sensitivity of the resource or receptor being affected and the magnitude of change as a result of the effect.

The assessment of effects will combine professional judgement together with consideration of the following:

- The sensitivity of the resource or receptor under consideration;
- The magnitude of the potential effect in relation to the degree of change which occurs as a result of the Revised Development;
- The type of effect, i.e. adverse, beneficial, neutral or uncertain;
- The probability of the effect occurring, i.e. certain, likely or unlikely; and
- Whether the effect is temporary, permanent and/or reversible.

A generalised methodology for assessing significant effects is detailed below; however, each individual technical area will have a specific assessment methodology which may vary from that detailed in the following Sections.

3.2.1.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near the Site or the sensitivity of potentially affected receptors, will be assessed in line with best practice guidance, legislation, statutory designations and/or professional judgement.

Table 3.1 details a general framework for determining the sensitivity of receptors. Each technical assessment will specify their own appropriate sensitivity criteria that will be applied during the EIA and details will be provided in the relevant EIA Report Chapter.

Table 3.1: Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition
Very High	The receptor has little or no ability to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.
High	The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
Low	The receptor is tolerant of change without detriment to its character, is low environmental value, or is of regional importance.
Negligible	The receptor is resistant to change and is of little environmental value.

3.2.1.2 Magnitude of Change

The magnitude of potential change will be identified through consideration of the Revised Development, the degree of change to baseline conditions predicted as a result of the Revised Development, the duration and reversibility of an effect and professional judgement, best practice guidance and legislation

General criteria for assessing the magnitude of change are presented in Table 3.2. Each technical assessment will apply their own appropriate magnitude of change criteria during the EIA, with the details provided in the relevant EIA Report Chapter.

Table 3.2: Framework for Determining Magnitude of Change

Magnitude of Effects	Definition
High	A fundamental change to the baseline condition of the receptor, leading to total loss or major alteration of character.
Medium	A material, partial loss or alteration of character.
Low	A slight, detectable, alteration of the baseline condition of the receptor.
Negligible	A barely distinguishable change from baseline conditions.

If effects of zero magnitude (i.e. none / no change) are identified, this will be made clear in the assessment.

3.2.1.3 Significance of Effect

The sensitivity of the receptor and the magnitude of the predicted effects will be used as a guide, in addition to professional judgement, to identify whether an effect is considered to be "significant". Table 3.3 summarises guideline criteria for assessing effects and whether these would be considered to be significant.

Table 3.3: Framework for Assessment of Effects

Magnitude of Change	Sensitivity of Receptor				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

Effects predicted to be of major or moderate significance are considered to be 'significant' in the context of the EIA Regulations and are shaded in light grey in Table 3.3.

Zero magnitude effects upon a receptor will result in no effect, regardless of sensitivity.

3.2.2 Mitigation

Where the EIA identifies significant adverse environmental effects, mitigation measures will be proposed in order to avoid, reduce, offset or compensate those effects. These mitigation measures will likely include the design of the turbines e.g. rotor blade length (*i.e.* embedded mitigation); or the provision of specific measures during construction and operation phases of the Revised Development.

The extent to which mitigation or other measures are taken into account will depend on the facts of each case. In some cases, the measures may form part of the proposal, be modest in scope or so plainly and easily achievable that it will be possible to reach a conclusion that there is no likelihood of significant environmental effects. The planning authority must have regard to the information provided by the Applicant and should interpret this in both light of the precautionary principle and taking into account the degree of uncertainty in relation to the environmental impact, bearing in mind that there may be cases where the uncertainties are such that they need to be examined in the EIA.

In addition, enhancement measures may be incorporated into design of the Revised Development to maximise environmental benefits.

3.2.3 Residual Effects

Taking cognisance of the suggested mitigation (and enhancement) measures, the predicted effects will be assessed to determine whether any residual effects remain.

3.2.4 Cumulative Effects

In accordance with the EIA Regulations, the assessment has considered 'cumulative effects'. By definition, these are effects that result from changes caused by present or reasonably foreseeable developments together with the Revised Development being assessed. For the cumulative assessment, the combined effects of several developments that may on an individual basis be insignificant but cumulatively, have a significant effect, have been considered.

For cumulative assessment, two types of effects will be considered:

- The combined effects of individual effects, for example noise, airborne dust or traffic on a single receptor; and
- The combined effects of several developments that may on an individual basis be insignificant but, cumulatively, have a significant effect.

In line with good practice, the methodology to be adopted for assessing the cumulative effects of wind energy developments will be in accordance with advice from NatureScot (formerly Scottish Natural Heritage [SNH])^{8,9} and the Scottish Government^{10,11,12,13}. The extent of any cumulative assessment relative to each technical assessment will be agreed during the consultation process and can include both existing and proposed wind farm developments as well as other forms of development.

Wind energy development has been stimulated by the policy support shown by the UK and Scottish Governments. At the time of writing it is known that there are other operational wind farms and a number of wind energy proposals located in the vicinity of the Site. Known wind farm developments are shown on Figure 5.7 in Appendix A.

The extent of any cumulative assessment relative to each technical assessment will be agreed during the consultation process and can include both existing and proposed wind farm developments as well as other forms of development.

3.2.5 Site Selection, Alternatives and Design

Schedule 4, Part 2 of the EIA Regulations requires an outline of reasonable alternatives (such as technology, location, size and scale) considered and the main reasons why the Revised Development was chosen, taking into account the environmental effects. Details of this will be provided within the EIA Report.

Consideration of alternative designs has already begun. The parameters of the Revised Development will be based on a range of technical criteria, such as separation distances between the Consented Development's turbine locations, wind speed, prevailing wind direction, local environmental issues and landscape and visual effects.

3.3 Structure and Content of the EIA Report

The content of the EIA Report will broadly follow the specifications detailed within Schedule 4 of the EIA Regulations. The EIA Report will consist of four volumes:

- Volume 1 – Main EIA Report text;
- Volume 2 – EIA Report Figures:
 - Volume 2a – Figures excluding LVIA;
 - Volume 2b – LVIA Plan Figures;
 - Volume 2c – LVIA Visuals;
- Volume 3 – EIA Report Technical Appendices; and
- Volume 4 – EA Report Non-Technical Summary.

The main EIA Report text will include:

- An introduction, including a summary of the EIA process and methodology;
- Description of the Site and its surroundings;
- Details of alternative considered and description of the Revised Development;
- A summary of the relevant planning policy and environmental context; and
- Technical chapters.

⁸ Scottish Natural Heritage (2018) *A Handbook for Environmental Impact Assessment (Version 5)*

⁹ Scottish Natural Heritage (2012) *Assessing the Cumulative Impact of Onshore Renewable Energy Sites*

¹⁰ Scottish Government (2017) Onshore Wind Policy Statement [Online] Available at:

<https://www.gov.scot/publications/onshore-wind-policy-statement-9781788515283/> (Accessed 23/02/2022)

¹¹ Scottish Government (2015) Energy targets and Scottish planning policy: Chief Planner letter [Online] Available at:

<https://www.gov.scot/publications/energy-targets-and-scottish-planning-policy-chief-planner-letter/> (Accessed 23/02/2022)

¹² Scottish Government (2021) *Onshore wind – policy statement refresh 2021: consultative draft* [Online] Available at:

<https://www.gov.scot/publications/onshore-wind-policy-statement-refresh-2021-consultative-draft/documents/> (Accessed 23/02/2022)

¹³ Scottish Government (2021) *Scotland 2045 – Our Fourth National Planning Framework – Draft* [Online] Available at:

<https://www.gov.scot/publications/scotland-2045-fourth-national-planning-framework-draft/> (Accessed 23/02/2022)

The technical chapters of the EIA Report will present details of the assessments undertaken, including any cumulative effects, required mitigation and residual effects.

3.4 Additional Documents

A Planning Statement focussing on the changes will be prepared to accompany the application. The Planning Statement will set out an assessment of the Revised Development in the context of national planning, energy policy, the local development plan, and emerging planning policies. It will also consider the potential benefits and disadvantages which may arise and conclude the overall acceptability of the Revised Development in relation to the planning context.

The Planning Statement will not form part of the EIA Report.

4 ENERGY AND PLANNING POLICY

4.1 Overview

In recent years, European, United Kingdom (UK) and Scottish Government policies have all placed greater focus on concerns about climate change and have set numerous targets in order to try and curtail the effects of greenhouse gas emissions. In turn, each tier of Government has developed intermediate targets, policies and actions designed to achieve said targets.

The 26th UN Climate Change Conference of the Parties (COP26) which took place in Glasgow in November 2021, brought the world leaders of over 200 countries together to address climate change and seek to agree universal objectives and measures that can be enforced to over the next decade to further cut carbon emissions.

COP26 outcomes included the Glasgow Climate Pact, an agreement with the aim of keeping the rise in global temperature to within 1.5°C¹⁴. All participating countries agreed to revisit and strengthen their 2030 carbon emissions targets.

In May 2019 for instance, the Committee on Climate Change (the CCC) published its landmark report entitled 'Net Zero – the UK's Contribution to Stopping Global Warming'¹⁵ which responded to requests by the UK, Welsh and Scottish Governments for the CCC to reassess the long-term carbon emission targets for the UK. In relation to Scotland in particular, the report states that the nation *"has proportionately greater potential for emissions removal than the UK overall and can credibly adopt a more ambitious target. It should aim for net zero greenhouse gas emissions by 2045. Interim targets should be set for Scottish emissions reductions (relatively to 1990) of 70% by 2030 and 90% by 2040."*

On the 24th June 2021 the CCC published the 2021 report to Parliament¹⁶, assessing progress in reducing UK emissions over the past year. The report highlights those significant lessons have been learned as a result of the ongoing COVID-19 pandemic and that within testing times, the importance of activating change at Government level should continue to be a priority. The report once again indicates that reaching net zero emissions in the UK will require all energy to be delivered to consumers in zero-carbon form, for example - renewables and nuclear, bioenergy and fossil fuels combined with carbon capture and storage.

In December 2021, the CCC published its latest report to the Scottish Parliament on progress in reducing carbon emissions¹⁷ states that based on the greenhouse gas emissions inventory, the most recent emissions calculations were 51.5% below 1990 levels, meaning that Scotland missed its 2019 annual target for a 55% reduction.

Amongst the more detailed recommendations in the 2021 Report is the strong steer that the Scottish Government should focus on a 'green recovery' by *"investing in climate-resilient low-carbon infrastructure"*. This should provide a positive consenting regime for onshore wind and other renewables consistent with other land use policies and promote

¹⁴ UNCCC UK 2021 (2021) *COP26 Keeps 1.5C Alive and Finalises Paris Agreement* [Online] Available at: <https://ukcop26.org/cop26-keeps-1-5c-alive-and-finalises-paris-agreement/#:~:text=COP26%20has%20today%20concluded%20in,on%20urgently%20accelerating%20climate%20action.> (Accessed 23/02/2022)

¹⁵ Committee on Climate Change (2019) *Net Zero – The UK's contribution to stopping global warming* [Online] Available at: <https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf> (Accessed 23/02/2022).

¹⁶ Climate Change Committee (June 2021) *Progress in reducing emissions: 2021 Report to Parliament* [Online] Available at: <https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/> (Accessed 23/02/2022)

¹⁷ Climate Change Committee (December 2021) *Progress in reducing emissions in Scotland: 2021 Report to Parliament* [Online] Available at: <https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/> (Accessed 23/02/2022)

repowering and life extensions. The context of delivering a green recovery from the COVID-19 crisis creates a further imperative for action.

On 9th December 2020, the CCC released The Sixth Carbon Budget¹⁸ which updates intermediary targets for the UK's progress to net zero.

"Our recommended pathway requires a 78% reduction in UK territorial emissions between 1990 and 2035. In effect, it brings forward the UK's previous 80% target by nearly 15 years. There is no clearer indication of the increased ambition implied by the Net Zero target than this."

These targets must be considered as a factor in the determination of applications for viable wind energy projects. In establishing intermediary targets towards net zero, the context exists for Local Authorities and national Government to recognise the action that must be taken sooner rather than later. As concluded in the Sixth Carbon Budget:

"The implication of this path is clear: the utmost focus is required from government over the next ten years. If policy is not scaled up across every sector; if business is not encouraged to invest; if the people of the UK are not engaged in this challenge – the UK will not deliver Net Zero by 2050."

On 16th December 2020 the Scottish Government published an update to the 2018 Climate Change Plan¹⁹. The plan sets out the approach to delivering a green recovery, and a pathway to meeting world leading climate change targets for the period to 2032. By then, amongst other things Scotland's electricity system will be transformed, with over 100% of electricity demand being met from renewable sources. There will have been a substantial increase in renewable generation, particularly through offshore and onshore wind capacity.

Whilst much of Scotland's electricity generation has decarbonised over the last decade, there is a need for increased investment in renewable energy, particularly onshore and offshore wind. The energy consenting process will be reviewed to reduce determination timescales and enable projects awarded consent to proceed more quickly, benefitting onshore wind in particular. A new Energy Strategy and an updated Electricity Generation Policy Statement are expected to be published shortly.

The Renewable Energy Directive 2009/28/EC establishes an overall policy for the production and promotion of energy from renewable sources in the European Union (EU). In December 2018, the new revised Renewables Energy Directive (2018/2001) came into force – establishing a new binding renewable energy target for the EU for 2030 of at least 32%, with a clause of a possible upwards revision by 2023.

On 29th March 2017, the UK formally notified of its intention to leave the EU under Article 50 of the Treaty of the EU. On 31st January 2020, the UK officially left the EU as a member state. The European Union (Withdrawal Agreement) Act 2020 converts all EU laws, rules and targets into domestic governance. It is considered that the existing EU renewable energy targets for the UK, such as the requirements of the Renewable Energy Directive, will remain applicable despite the UK's departure from the EU.

The UK Government retains responsibility for the overall direction of energy policy, although some elements are devolved to the Scottish Government. The UK Government has published a series of policy documents setting out how the European targets can be achieved. Onshore wind generation, located in Scotland, is identified as an important component to achieve these various goals.

¹⁸ The CCC (2020) *The Sixth Carbon Budget: The UK's path to Net Zero* [Online] Available at: <https://www.theccc.org.uk/publication/sixth-carbon-budget/> (Accessed 23/02/2022)

¹⁹ Scottish Government (2020) *Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update* [Online] Available at: <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/> (Accessed 23/02/2022)

On 14th December 2020, Alok Sharma MO, then Secretary of State for Business, Energy and Industrial Strategy announced the launch of the Energy White Paper²⁰. The White Paper set out the UK Governments strategy to put net zero into practice and for fighting climate change, following the Prime Ministers Ten Point Plan for a Green Industrial Revolution²¹.

The White Paper reiterates the compelling case to urgently address climate change and avert the dangerous consequences of that will arise if global temperatures increase is not kept at well below 2% as per the Paris Agreement, if possible, not above 1.5%. The White Paper sets out the measures that need to be put in place to achieve the carbon emission targets for the UK. These entail a major shift in energy use from fossil fuels to electricity and hydrogen. Clean electricity is to become the predominant form of energy, with a consequent doubling of demand. This transition must be secured whilst retaining reliability, resilience and affordability. Delivering this will require billions of pounds of investment in clean energy infrastructure, including offshore wind farms and new nuclear plants.

The White Paper is clear that onshore wind (and solar) will be key building blocks in the energy mix, with the aim to deploy around 12 gigawatts (GW) of new low-cost renewable generation capacity.

The Scottish Government has published a number of policy documents and its own targets. The most relevant policy, legislative documents and recent Statements published by the Scottish Government include the following:

- The 2020 Routemap for Renewable Energy in Scotland (2011)²²;
- The Electricity Generation Policy Statement (2013)²³;
- 2020 Routemap for Renewable Energy in Scotland – Update 19 December 2013²⁴;
- Letter from Chief Planner to all Heads of Planning in relation to energy targets and Scottish Planning Policy (November 2015)²⁵;
- Scottish Energy Strategy (December 2017)²⁶;
- Onshore Wind Policy Statement (December 2017)²⁷;
- Onshore Wind Policy Statement Refresh 2021 Consultation Draft (October 2021)²⁸;
- Scotland 2045 – Our Fourth National Planning Policy Framework – Draft NPF4²⁹;
- The Scottish Climate Change Plan (2018)³⁰;

²⁰ HM Government (2020) *Energy White Paper – Powering our Net Zero Future* [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943807/201214_BEIS_EWP_Command_Paper_LR.pdf (Accessed 23/02/2022)

²¹ *Prime Minister Boris Johnson outlines his Ten Point Plan for a Green Industrial Revolution for 250,000 jobs*. 18 November 2018 [Online] Available at <https://www.gov.uk/government/news/pm-outlines-his-ten-point-plan-for-a-green-industrial-revolution-for-250000-jobs> (Accessed 23/02/2022)

²² Scottish Government (2011) 2020 Routemap for Renewable Energy in Scotland [Online] Available at: <https://www.webarchive.org.uk/wayback/archive/20150218121205/http://www.gov.scot/Publications/2011/08/04110353/0> (Accessed 23/02/2022)

²³ Scottish Government (2013) Electricity Generation Policy Statement – 2013 [Online] Available at: <https://www.gov.scot/publications/electricity-generation-policy-statement-2013/pages/3/#:~:text=This%20Electricity%20Generation%20Policy%20Statement,in%20Scotland's%20future%20energy%20mix.> (Accessed 23/02/2022)

²⁴ Scottish Government (2013) 2020 Routemap for Renewable Energy in Scotland – Update [Online] Available at: <https://www.webarchive.org.uk/wayback/archive/20170105044709/www.gov.scot/Topics/Business-Industry/Energy/RoutemapUpdate2013> (Accessed 23/02/2022)

²⁵ Scottish Government (2015) Energy targets and Scottish planning policy: Chief Planner letter [Online] Available at: <https://www.gov.scot/publications/energy-targets-and-scottish-planning-policy-chief-planner-letter/> (Accessed 23/02/2022)

²⁶ Scottish Government (2017) The future of energy in Scotland: Scottish Energy Strategy [Online] Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/> (Accessed 23/02/2022)

²⁷ Scottish Government (2017) Onshore Wind Policy Statement [Online] Available at: <https://www.gov.scot/publications/onshore-wind-policy-statement-9781788515283/> (Accessed 23/02/2022)

²⁸ Scottish Government (2021) *Onshore wind – policy statement refresh 2021: consultative draft* [Online] Available at: <https://www.gov.scot/publications/onshore-wind-policy-statement-refresh-2021-consultative-draft/documents/> (Accessed 23/02/2022)

²⁹ Scottish Government (2021) *Scotland 2045 – Our Fourth National Planning Framework – Draft* [Online] Available at: <https://www.gov.scot/publications/scotland-2045-fourth-national-planning-framework-draft/> (Accessed 23/02/2022)

³⁰ Scottish Government (2018) Climate Change Plan [Online] Available at: <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018-9781788516488/> (Accessed 23/02/2022)

- The Scottish Government’s declaration of a Climate Emergency (2019)³¹; and
- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019³² and the legally binding net zero target for 2045 and interim targets for 2020, 2030 and 2040.

4.2 Local Policy and Supplementary Guidance

4.2.1 Overview

In the case of the Revised Development, the Local Planning Authority is Argyll and Bute Council (‘the Council’). However, any planning application that proposes a renewable energy development that exceeds a generation capacity of 50 MW will be made to the Scottish Ministers for determination under Section 36 of the Electricity Act 1989.

The Council’s Renewable Energy Action Plan of 2010³³ set out the vision that: *“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.”*

This document provides the context for all renewable energy schemes in Argyll and Bute and identifies the substantial benefits of a positive action plan for the area.

Planning policies contained within the Local Development Plan that are relevant to the Revised Development are listed in Table 4.1 and will be described within the Revised Development’s EIA Report.

The current Local Development Plan comprises:

- The Argyll and Bute Local Development Plan³⁴ (“ABLDP”) (adopted March 2015) including Proposal Maps; and
- Supplementary Guidance applicable to the Development³⁵ (“the SG”).

³¹ Scottish Government (2019) The Global Climate Emergency – Scotland’s Response [Online] Available at <https://www.gov.scot/publications/global-climate-emergency-scotlands-response-climate-change-secretary-roseanna-cunninghams-statement/> (Accessed 23/02/2022)

³² Scottish Government (2019) The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 [Online] Available at: <http://www.legislation.gov.uk/asp/2019/15/enacted> (Accessed 23/02/2022)

³³ Argyll and Bute Council – Renewable Energy Action Plan [Online] Available at: <https://www.argyll-bute.gov.uk/planning-and-environment/renewable-energy-action-plan> (Accessed 04/02/2022)

³⁴ Argyll and Bute Council – Argyll and Bute Local Plan 2015 [Online] Available at: <https://www.argyll-bute.gov.uk/planning-and-environment/local-development-plan> (Accessed 04/02/2022)

³⁵ Argyll and Bute Council 2016 – Renewable Energy Supplementary Guidance [Online] Available at https://www.argyll-bute.gov.uk/sites/default/files/supplementary_guidance_2_document_adopted_december_2016.pdf (Accessed 04/02/2022)

Table 4.1: Key LDP policies

Document	Key Policies
Local Planning Policy	
ABLDP (adopted March 2015)	<p>Policy LDP DM1 – Development within the Development Management Zones specifically states that the building of developments in the Greenbelt may be permitted if they directly support the provision of essential infrastructure.</p> <p>Policy LDP 3 – Supporting the Protection, Conservation and Enhancement of our Environment – all development proposals will be assessed with the aim of protecting, conserving and where possible enhancing the built, human and natural environment.</p> <p>Policy LDP 5 – Supporting the Sustainable Growth of Our Economy – advises that the Council will support the development of new industries and businesses which help deliver sustainable economic growth.</p> <p>Policy LDP 6 – Supporting the sustainable Growth of Renewables outlines the criteria against which proposed windfarm developments will be assessed. All criteria will be considered at the development assessment stage.</p> <p>Policy LDP 9 – Development Setting, Layout and Design concerns the location and design of developments to ensure that they do not have a significant impact on the local amenity, environment and sensitive locations. The policy sets out criteria relating to the Development Setting, Development Layout and Density and Development Design which should be considered in proposals.</p> <p>Policy LDP 10 – Maximising our Resources and Reducing our Consumption proposes that development that seeks to maximise our resources and reduce consumption, and where they accord with the following matters such as contributing to renewable energy generation, minimising waste and adopting sustainable design principles.</p> <p>Policy LDP 11 – Improving our Connectivity and Infrastructure advises that development proposals should make the best use of the existing infrastructure, and the location and design of new infrastructure is appropriate.</p>
Supplementary Guidance	
ABLDP – Supplementary guidance (adopted March 2016), ('the SG');	<p>The Supplementary Guidance (SG) outlines the process by which the LDP 6 will be applied, and explains the details of the different classifications of land for wind development featuring turbines of over 50m more clearly. The SG also provides further guidance on technical matters such as turbine siting.</p> <p>Specific SG Policies that are applicable to the Revised Development include:</p> <p>Natural Environment:</p> <ul style="list-style-type: none"> SG LDP ENV 4 – Development Impact on Sites of Special Scientific Interest (SSSIs) SG LDP ENV 5 – Development Impact on Local Nature Conservation Sites SG LDP ENV 6 – Development Impact on Trees/Woodland SG LDP ENV 7 – Water Quality and the Environment SG LDP ENV 8 – Protection and Enhancement of Green Networks SG LDP ENV 9 – Development Impact on Areas of Wild Land SG LDP ENV 10 – Geodiversity SG LDP ENV 11 – Protection of Soil and Peat Resources

Document	Key Policies
	<p>Landscape and Design: SG LDP ENV 12 – Development Impact on National Scenic Areas (NSAs) SG LDP ENV 13 – Development Impact on Areas of Panoramic Quality (APQs) SG LDP ENV 14 – Landscape SG LDP ACE 1</p> <p>Historic Environment and Archaeology: 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</p> <p>Sustainable Siting and Design SG LDP Sustainable Siting and Design Principles</p> <p>Addressing Climate Change SG LDP Sustainability Check Sustainability Checklist</p>
<p>ABLDP - Supplementary Guidance 2 (adopted December 2016), (the 'SG 2')</p>	<p>Renewable Energy The SG 2 provides a map visualising the Spatial Framework for Wind Turbines over 50 metres to blade tip. According to this map the Revised Development Site appears to be predominantly within Group 3 – Areas where Wind Farms are likely to be acceptable, with a small part within Group 2 – Areas of Significant Protection. Furthermore, the SG2 advises that in the consideration of Wind Farm proposals regards should be given to the Argyll and Bute Landscape Capacity Study which sets out details on the landscape sensitivity across the Council area.</p>

4.2.2 Argyll and Bute Landscape Wind Energy Capacity Study³⁶ (September, 2017) (“The landscape capacity study”)

The Council, together with NatureScot commissioned Consultant Landscape Architects to update the Landscape Wind Energy Capacity Study 2012. The updated study was approved by the Council’s Planning Protective Services and Licensing Committee on 20 September 2017.

There are two parts to the report. The Main Study Report provides details of the background and methodology of the study, a description of the baseline landscape character, and summary sensitivity assessments for each landscape character type; whilst the Appendix Report provides detailed sensitivity assessments for each of the landscape character types.

The Revised Development falls in the Character Type 6 Upland Forest Moor Mosaic. This landscape comprises broad areas of undulating plateau lying within the interior of the Kintryre peninsula. The Capacity Study assessed Character Type 6 areas as having a high sensitivity to very large turbines (>130 m) and High-medium sensitivity to the large (80-130 m) and medium (50-80 m) turbine development typologies.

³⁶ Carol Anderson Landscape Associates (2017) Argyll and Bute Landscape Wind Energy Capacity Study 2017 [online] Available at: <https://www.argyll-bute.gov.uk/planning-and-environment/landscape-wind-energy-capacity-study> (Accessed 04/02/2022)

4.3 Emerging Policy

4.3.1 National Planning Framework 4 (NPF4)

In the ministerial foreword to Scotland 2045 – Our Fourth National Planning Framework (the Draft NPF4)³⁷ Tom Arthur MSP states, amongst other things, that the purpose of planning is to manage the development and use of land in the long-term public interest. The decisions made today will have implications for future generations, and Scotland in 2045 team will be different. It goes on to say that target has been set for Zero emissions by 2045, and significant progress towards this must be achieved by 2030. This will require new developments and infrastructure across Scotland.

Part 3 of the Draft NPF4 deals with National Developments. Of the 18 identified, number 12 deals with strategic renewable electricity generation and transmission infrastructure. This national development supports renewable electricity generation, repowering, and expansion of the electricity grid. It recognises that a large increase in electricity generation from renewable resources will be essential for Scotland to meet its net zero emission targets. All forms of electricity generation exceeding 50 MW capacity are defined as national development, in locations across all of Scotland. In terms of the need for such development the draft NPF4 states:

“Additional electricity generation from renewables and electricity transmission capacity of the scale is fundamental to achieving a net zero economy...”

Part 3 sets out the draft national Universal Policies necessary to achieve a net zero, nature positive Scotland. The planning system must be re-balanced to ensure that climate change and nature recovery of the primary guiding principles for all plans and decisions.

Draft Policy 2: Climate emergency states that when considering all development proposals significant weight should be given to the Global Climate Emergency.

The introduction to Draft Policy 19: Green Energy states that the Scottish Government wants to support the continued expansion of low carbon net zero energy technologies as a key contributor to net zero emissions by 2045. The policy recognises that Scotland's Energy sector has a significant role to play in reducing carbon emissions and contributing to a green, fair and a resilient economic recovery. Whilst a range of renewable technologies are capable of delivering these benefits, it is likely that onshore wind will play the greatest role in the coming years.

The proposed text of Policy 19 is broken down into eleven paragraphs, a) - k). Paragraph d) deals with proposals for new windfarms outwith National Parks and National Scenic Areas, stating:

‘Outwith National Parks and National Scenic Areas, and recognising the sensitivity of any other national or international designations, development proposals for new windfarms should be supported unless the impacts identified (including cumulative effects), are unacceptable...’

Paragraphs e) deals with development proposals to repower, extend and expand existing windfarms (and for extension of life proposals). It states that such proposals should be supported unless the impacts identified, including cumulative effects, are unacceptable.

Under paragraph k), specific considerations relevant to all development proposals for renewable energy are identified. The 17 matters covered are effectively the same as covered presently under paragraph 169 of SPP.

³⁷ Scottish Government (2021). Scotland 2045 – fourth National Planning Framework – draft: consultation [Online]. Available at: <https://www.gov.scot/publications/scotland-2045-fourth-national-planning-framework-draft/> (Accessed 04/02/2022)

4.3.2 Local Policy

Work is currently under way to prepare for the next Council Local Plan. The Proposed Local Development Plan 2 consultation ran from 14 November 2019 to 12 noon on 24 January 2020. The consultation has now closed and the Council has sent Proposed Local Development Plan 2 and all unresolved representations to the Scottish Government requesting an Examination into the issues raised. The Scottish Government will appoint a Reporter to conduct the independent Examination.

In the consultation draft of the Written Statement³⁸, renewables development including onshore wind is addressed at Policy 30. The Policy is accompanied by Diagram 7 which shows the proposed Spatial Framework according to Groups 1, 2 and 3 as required by SPP.

The supporting text to the Policy states that developers will be required to demonstrate how they have taken into account guidance contained in the Council's Landscape Capacity Study.

4.4 Summary

The above policies and plans reflect the current direction of the European/UK and Scottish Government's objectives for accommodating renewable energy and specifically in the case of the Revised Development, and wind turbine development. It will be noted that recent development in national energy policy recognise the need to accelerate the transition to a carbon neutral economy in order to tackle climate change. A Planning Statement would accompany the Application to undertake an in-depth appraisal of the proposed development and assess its compliance with relevant planning policies.

³⁸ Argyll and Bute Council – Proposed Local Development Plan 2 November 2019 [Online] Available at: https://www.argyll-bute.gov.uk/sites/default/files/finalpldp2writtenstatementdepositv2_ac.pdf (Accessed 23/02/2022)

5 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

5.1 Introduction

This section of the Scoping Report sets out the proposed methodology and approach to be applied in the production of the Landscape and Visual Impact Assessment (LVIA) for the application of the Revised Development and presents the suggested scope of the LVIA in terms of those landscape and visual receptors to be scoped in and scoped out of the assessment process. Justification of the scope is presented through an initial baseline assessment of the relevant receptors, and an initial assessment of their sensitivity to the Revised Development.

The purpose of the LVIA is to identify and record the potential effects that the Revised Development may have on physical elements of the landscape; landscape character; areas that have been designated for their scenic or landscape-related qualities; Wild Land Areas and views from various locations such as settlements, routes, hilltops and other sensitive locations. The potential cumulative effects that may arise from the addition of the Revised Development to other wind farms are also considered.

The LVIA will consider the potential effects of the Revised Development during the following development stages:

- Construction and decommissioning of the Revised Development; and
- Operation of the Revised Development.

Receptors may not be affected at all three development stages.

5.1.1 Comparison with Extant Consent

In respect of considerations relevant to the LVIA, the Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development, however, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur these will be assessed.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

The key difference in the LVIA is that the proposed turbines are larger in dimension with an increase from a blade tip height of 149.9 m to 180 m; as this will introduce the requirement of aviation lighting and may increase effects on visual receptors, an updated LVIA will be required.

A set of comparative wirelines are presented in Figures 5.8 to 5.30, which illustrate the Revised Development and the Consented Development from all 23 representative viewpoints.

The LVIA will assess the effects of the Revised Development against the baseline of an undeveloped Site, despite there being an Extant Consent. The LVIA will, however, include a comparative assessment of the Revised Development against the Consented Development, in order to highlight the extent of the changes between the two.

5.2 Relevant Guidance and Legislation

The LVIA will follow Optimised Environment Ltd.'s (OPEN) methodology devised specifically for the assessment of wind farm developments, and which generally accords with

'Guidelines for Landscape and Visual Impact Assessment: Third Edition' (Landscape Institute and IEMA, 2013)³⁹('GLVIA3'), the key source of guidance for LVIA.

Other sources of guidance that will be used and referenced in the LVIA include the following:

- Visual Representation of Wind Farms Version 2.2 (SNH, 2017)⁴⁰;
- Visual Representation of Development Proposals, Technical Guidance Note 06/19. Landscape Institute (2019)⁴¹;
- Assessing the Cumulative Impact of Onshore Wind Energy Developments. SNH (2012)⁴²;
- Assessing impacts on Wild Land Areas - Technical Guidance. NatureScot (2020)⁴³;
- Guidance for Assessing the Effects on Special Landscape Qualities. SNH (DRAFT 2018-2019 or as updated)⁴⁴;
- Technical Guidance Note 2/19 Residential Visual Amenity Assessment. Landscape Institute (2019)⁴⁵;
- Landscape Character Assessment Guidance for England and Scotland. SNH and TCA (2002)⁴⁶; and
- Siting and Designing of Windfarms in the Landscape: Version 3a. SNH (2017)⁴⁷.

5.3 Assessment Methodology

5.3.1 Study Area

The initial step in the LVIA is the establishment of the Study Area for the assessment. Guidance developed by NatureScot (Visual Representation of Wind Farms Version 2.2, February 2017) indicates that an area with a radius of 45 km from the nearest turbine is appropriate for the proposed size of the turbines at up to 180 m. This Study Area is shown in Figure 5.1 in Appendix A. Zone of Theoretical Visibility (ZTV) analysis has been carried out for this area, as has mapping of landscape character, landscape related designations, Wild Land Areas and principal visual receptors as shown in Figures 5.2 to 5.6 in Appendix A.

The Study Area is not intended to provide a boundary beyond which the Revised Development will not be seen, but rather to define the area within which it may have a significant landscape or visual effect. A significant effect is, in reality, very unlikely to occur towards the edges of the Study Area.

A review of the broad wind farm context within a 45 km radius has been undertaken, based on the latest NatureScot mapping of large-scale wind farm development. It is considered that any cumulative effects that would occur, would arise as a result of the pattern of development within the 45 km Study Area radius, rather than as a result of changes beyond this.

It is proposed that following a detailed review of the cumulative sites within the area, a plan will be produced showing the locations of wind farms within 45 km that are operational, under construction, consented or which are at application stage and where the turbines are greater than 50 m to blade tip, and would, therefore, be included within any cumulative assessment for the Revised Development. The Council and NatureScot will be

³⁹ Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment: Third Edition.

⁴⁰ Scottish Natural Heritage (2017). Visual Representation of Wind Farms Version 2.2.

⁴¹ Landscape Institute (2019). Visual Representation of Development Proposals, Technical Guidance Note 06/19.

⁴² Scottish Natural Heritage (2012). Assessing the Cumulative Impact of Onshore Wind Energy Developments.

⁴³ NatureScot (2020). Assessing impacts on Wild Land Areas - Technical Guidance.

⁴⁴ Scottish Natural Heritage (2018-2019). Draft Guidance for Assessing the Effects on Special Landscape Qualities.

⁴⁵ Landscape Institute (2019). Technical Guidance Note 2/19 Residential Visual Amenity Assessment.

⁴⁶ Scottish Natural Heritage and TCA (2002). Landscape Character Assessment Guidance for England and Scotland.

⁴⁷ Scottish Natural Heritage (2013). Siting and Designing of Windfarms in the Landscape: Version 3a.

consulted over the final list of sites to be considered within the detailed cumulative assessment. Exceptionally, scoping stage sites may also be included, at the request of the Council or NatureScot, where they are considered to be of specific relevance to the cumulative effect of the Revised Development. Known cumulative wind farms within a 45 km Study Area are shown for scoping purposes in Figure 5.7 in Appendix A.

5.3.2 Desk Study

The assessment has been initiated through a desk study of the Site and 45 km radius Study Area, combined with a good working knowledge of this area. This study has identified aspects of the landscape and visual resource that will need to be considered in the LVIA, including:

- Landscape character typology;
- Landscape-related planning designations;
- Wild Land Areas (WLA);
- Potential cumulative wind farms;
- Routes (including roads, National Cycle Routes and long-distance walking routes);
and
- Properties and settlements.

The desk study has also utilised Geographic Information System (GIS) software to explore the potential visibility of the scoping layout for the Revised Development. The resultant ZTV diagrams, in Figure 5.2 to 5.6 in Appendix A, have provided an indication of which landscape and visual receptors are likely to have key sensitivities to the Revised Development.

5.3.3 Categories of Effect

The LVIA is intended to determine the significant effects that the Revised Development would have on the landscape and visual resource. For the purpose of assessment, the potential effects on the landscape and visual resource are grouped into the following categories:

Physical effects: physical effects are restricted to the area within the Site and are the direct effects on the existing fabric of the Site. This category of effects is made up of landscape elements, which are the components of the landscape such as rough grassland and moorland that may be directly and physically affected by the Revised Development;

Effects on landscape character: landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape and the way that this pattern is perceived. Effects on landscape character arise either through the introduction of new elements that physically alter this pattern of elements or through visibility of the Revised Development that may alter the way in which the pattern of elements is perceived. This category of effects is made up of landscape character receptors, which fall into two groups; landscape character types and landscape-related designated areas;

Effects on the special qualities of the National Park (NP) and National Scenic Area (NSA): a Special Landscape Qualities Impact Assessment is carried out to cover the potential for significant effects on the landscape qualities as identified in the NatureScot published report for each NP or NSA, including in some cases, qualities such as a sense of wildness/seclusion/remoteness;

Effects on wild land: the assessment of the effects on the wild land qualities of the Wild Land Areas through consideration of the impacts on the physical attributes and perceptual responses identified as identified in NatureScot's WLA Descriptions;

Effects on views: the assessment of the effects on views is an assessment of how the introduction of the Revised Development would affect views throughout the Study Area. The assessment of effects on views is carried out in relation to representative viewpoints and principal visual receptors;

Effects on views from properties: Residential Visual Amenity Assessment (RVAA) is carried out for properties within 2 km in line with Landscape Institute (LI) technical guidance;

Effects of Turbine Lighting: should visible aviation lighting be required, a night-time visual impact assessment will be prepared to assess the potential visual impact of the turbine lights; and

Cumulative effects: cumulative effects arise where the study areas for two or more wind farms overlap so that both of the wind farms are experienced at a proximity where they may have a greater incremental effect, or where wind farms may combine to have a sequential effect. In accordance with guidance, the LVIA assesses the effect arising from the addition of the Revised Development to the cumulative situation.

5.3.4 Assessment Approach

The objective of the assessment of the Revised Development is to predict the likely significant effects on the landscape and visual resource. In line with the EIA Regulations, the LVIA effects are assessed to be either significant or not significant.

The significance of effects is assessed through a combination of two considerations: the sensitivity of the landscape receptor or view and the magnitude of change that would result from the addition of the Revised Development.

The geographic extent over which the landscape and visual effects would be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude but instead is used in determining the extent in which a particular magnitude of change is experienced and the extent of the significant and non-significant effects. The extent of the effects would vary depending on the specific nature of the development proposed and is principally assessed through analysis of the geographical extent of visibility of the Revised Development across the visual receptor.

The duration and reversibility of effects on views are based on the period over which the Revised Development is likely to exist and the extent to which the Revised Development will be removed, and its effects reversed at the end of that period. Duration and reversibility are not incorporated into the overall magnitude of change and may be stated separately in relation to the assessed effects.

The 'nature of effects' relates to whether the effects of the Revised Development are adverse, neutral or beneficial. Guidance provided in GLVIA3 states that "*thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity*" but does not provide an indication as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and reasoned professional opinion.

OPEN generally adopts a precautionary approach which assumes that significant landscape and visual effects will be weighed on the negative side of the planning balance, although positive or neutral effects may arise in certain situations.

5.4 Key Sensitivities and Baseline Conditions

5.4.1 Site Context

The Site is set back from the east coast of the Kintyre Peninsula in Argyll and Bute, immediately to the west of the B842/National Cycle Route (NCR) 78. The Site covers an undulating area of open grass moorland and commercial forestry plantation with a number of small lochs and forest roads. The landform rises from the coast to Cnoc na Buaille at 214 m AOD, from which a northerly extending ridgeline occurs. Further inland the highest point of the Site and the surrounding area is Cnoc an t-Samhlaidh at 264 m AOD. These hills are largely afforested and although relatively low, extend across an area of 3 to 4 km.

Settlement within the area around the Site is sparse, occurring mainly along the eastern coastal edge and inland where 'B' class and minor roads provide access. At Claonaig there is a small group of houses some 6.8 km to the north where there is also a slipway for the Lochranza-Arran Ferry. The nearest settlement is Clachan, 4 km northwest of the Site. The slightly larger settlement of Skipness is a short distance northeast along the coast, 9 km from the Site, and the hamlet of Grogport is located some 4.6 km to the south. The village of Carradale lies approximately 10 km to the south on the coast. The closest residential properties are located along the B842 near the eastern boundary of the Site at Cour and Crossaig. The Argyll and Bute Local Development Plan 2015 will be used to identify the settlements to be assessed within the LVIA as shown on Figure 5.6 in Appendix A.

The north-western coast of Arran lies at a distance of approximately 5.8 km to the east of the Site across the Kilbrannan Sound and as such, has a close association and notable influence on the character of the east coast of Kintyre. Arran is characterised by the dramatic skyline of its rugged mountains in the north of the island, which also form an impressive backdrop to the northern Kintyre peninsula. The settlements of Lochranza, Catacol and Pirnmill sit along the western coastal edge, with clear views west towards Kintyre.

The A83 runs to the north and west of the Site at a distance of approximately 4.2 km at its closest point near Clachan. The ZTV in Figure 5.6 in Appendix A indicates that the Revised Development is largely screened from the A83 due to intervening landform. Larger settlements of Tarbert, Ardrishaig and Lochgilphead to the north and Campbeltown and Machrihanish to the south are also shown on the ZTV to have no theoretical visibility of the Revised Development. To the north of West Loch Tarbert, a further area of heavily forested upland rises above a sparsely settled coastline where the B8024 runs along the shallower slopes either slightly inland or along the coast.

In addition to the Claonaig-Lochranza ferry and the Lochranza-Tarbert ferry to the east of the Site there are other ferry routes operating in the Sound of Gigha and Sound of Jura where they provide links to the numerous islands to the west of the Kintyre peninsula. These include Gigha (and Cara), Islay and Jura. To the northeast of the Revised Development, beyond where the Kilbrannan Sound and Loch Fyne meet, lies the Cowal Peninsula and the Isle of Bute (and Inchmarnock). Further east still, within the Firth of Clyde are the islands of Great Cumbrae and Little Cumbrae. The coastal areas of North Ayrshire lie on the edge of the Study Area. The waters around these islands and coastal areas are particularly popular for sailing and other recreational vessels.

The long-distance route (LDR) of the Kintyre Way runs approximately 160 km (100 miles) between Tarbert in the north and Machrihanish. It winds its way between the west and east coasts over the upland, forested spine of the peninsula. It lies to the north, west and south of the Site at various points along the route with the closest point being to the north near Loch Ciaran at a distance of approximately 2.7 km from the Site boundary.

The operational Cour Wind Farm is located to the immediate south of the Site and consists of ten turbines of 111.25 m to tip. The Deucheran Hill Wind Farm is located at

approximately 5 km to the south and consists of nine turbines of up to 93 m to tip. Approximately 6.3 km to the north of the Site is the operational Freasdail Wind Farm, with 11 turbines of 100 m to tip, and located within the intervening area, closer to the eastern Kintyre coast and approximately 3 km north of the Site is the location of the consented Eascairt Wind Farm, with 13 turbines of 100 m to tip.

5.4.2 Landscape Character

In early 2019, NatureScot published an update to the characterisation of Scotland's landscape as a digital resource. The information builds on the characterisation studies published in the 1990's. NatureScot describes the recent publication as now superseding the 1990s landscape character descriptions and mapping, adding that "Where there are topic-specific landscape capacity or sensitivity studies, they would take precedence for informing that development type, e.g. windfarms."

The 'topic specific' characterisation studies which covers the 45 km Study Area are:

- Argyll and Bute Wind Energy Capacity Study, 2017 (ABWECS)⁴⁸; and
- North Ayrshire Landscape Wind Capacity Study, 2018 (NALWCS)⁴⁹.

These two sources of information, therefore, form the most up to date characterisation studies across the 45 km Study Area and, as such, form the basis of character assessment that will be undertaken in the LVIA.

Landscape Character is shown in Figure 5.5 in Appendix A with the blade tip ZTV of the scoping layout overlaid. Where more than one area of a LCT occurs, these are distinguished as Landscape Character Units (LCUs) with a geographic name derived from that location used in the naming.

The Site is located within the Upland Forest Moor Mosaic LCT identified in both the NatureScot and the Council studies. While the character assessment will consider the effects of the Revised Development on the landscape character types and units that lie across the Study Area, the assessment will focus on areas within a 20 km radius, as significant effects on landscape character are unlikely to occur beyond this range. Therefore, it is proposed to scope out the assessment of effects on LCTs / LCUs that lie beyond a 20 km radius of the Revised Development.

5.4.3 Landscape Designations

The Site is not covered by either a national or local level landscape designation which would otherwise denote a special scenic value. There are, however, a number of different landscape designations occurring across the 45 km Study Area, which are shown in conjunction with the scoping layout ZTV in Figure 5.3 in Appendix A.

At the national level there are four NSAs and seven Gardens and Designed Landscapes (GDLs) within the Study Area. The North Arran NSA, set at approximately 6 km to the east of the Site, is the closest of the national level designations. Located at 19 km to the north is the Knapdale NSA, located at 27 km to the northwest is the Jura NSA, while located 29 km to the northeast is the Kyles of Bute NSA.

Local landscape designations are designated through the LDPs and denote the local value of these landscapes. In the Argyll and Bute Council's part of the 45 km Study Area, there are nine Areas of Panoramic Quality (APQs), while in the North Ayrshire Council part, there are six Special Landscape Areas (SLAs). The closest of these local designations to the Site are the West Kintyre Coast APQ at 5 km to the west and the Isle of Arran SLA at 7.5 km to the east.

⁴⁸ Carol Anderson Landscape Associates (2017). Argyll and Bute Wind Energy Capacity Study.

⁴⁹ Carol Anderson Landscape Associates (2018). North Ayrshire Wind Capacity Study.

WLAs are not a landscape designation but a Mapped Interest, defined and described by NatureScot and considered to be of national importance in SPP. There are two WLAs in the 45 km Study Area, as shown in conjunction with the scoping layout ZTV in Figure 5.4 in Appendix A. The closest WLA to the Revised Development is WLA 03. North Arran, at 8 km to the east, while at 32 km to the northwest of the Study Area lies WLA 05 Jura, Scarba, Lunga and the Garvellachs.

Table 5.1 below lists the designated areas and WLAs and provides information about their distance to the preliminary turbine locations and relationship to the ZTV, as shown in Figures 5.3 and 5.4 in Appendix A. Thereafter, it is assessed in the final column whether or not, in OPEN's opinion, these designated areas can be scoped out of the assessment, unless changes to the layout during the detailed design process materially alter the potential for significant effects. The boxes that are shaded grey will be assessed further within the LVIA. The Council's and SNH's agreement to this is sought through this scoping exercise in order to enable the LVIA to be focussed on key considerations. Table 5.1 makes reference to the ZTV of the Scoping Layout overlain on landscape planning designations and wild land areas in Figure 5.3 of Appendix A.

Table 5.1 Landscape Planning Designations and Wild Land Areas

Designation / WLA	Distance to nearest turbine (km)	Subject to ZTV-theoretical visibility?	Need to assess effects further within LVIA?
National Scenic Areas			
North Arran	5.78	Yes	Yes. Due to proximity and widespread area with theoretical visibility.
Knapdale	18.60	Yes	No. ZTV shows very limited theoretical visibility from a minimum distance of 23.3 km.
Jura	26.85	Yes	No. Substantial separation by open sea and existing wind farms visible on Kintyre ensures that character of Jura NSA would not be significantly affected.
Kyles of Bute	28.33	Yes	No. ZTV shows very limited theoretical visibility from restricted high points on the periphery of the NSA and not from the core area of the Kyles of Bute or key areas from which they are viewed.
Garden and Designed Landscape			
Achamore House	13.62	Yes	Yes. Although extensive woodland may restrict visibility.
Stonefield Castle Hotel	20.78	Yes	No. ZTV shows theoretical visibility to be very limited.
Brodick Castle	21.96	No	No. No visibility.
Mount Stuart (Kirriemuir)	29.58	Yes	No. ZTV indicates limited theoretical visibility from wooded high ground of Torr Wood area only.

Designation / WLA	Distance to nearest turbine (km)	Subject to ZTV-theoretical visibility?	Need to assess effects further within LVIA?
Ballimore	33.67	Yes	No. ZTV indicates limited theoretical visibility from wooded areas and peripheral fields with intervening woodland and at a substantial distance.
Castle Toward	34.72	Yes	No. ZTV indicates limited theoretical visibility from wooded areas and peripheral fields with intervening woodland and at a substantial distance.
Kelburn	41.88	Yes	No. ZTV indicates limited theoretical visibility from wooded areas and peripheral fields with intervening woodland and at a substantial distance.
Area of Panoramic Quality			
West Kintyre (Coast)	5.11	Yes	No. ZTV indicates very limited theoretical visibility from inland high points.
Knapdale / Melfort	8.50	Yes	Yes. Due to proximity and widespread area with theoretical visibility, although actual visibility would be reduced due to tree cover.
East Kintyre (Coast)	10.38	Yes	No. ZTV indicates very limited theoretical visibility with the character of affected areas more influenced by views to the east towards Arran than inland to the north where there is already an influence from closer-range wind farms.
Bute & South Cowal	20.47	Yes	No. ZTV indicates some visibility particularly on the western slopes and coast of Bute and around the southerly extents of the Cowal peninsulas. However, substantial separation by open sea and closer proximity influence by eastern areas of Kintyre and northern Arran ensures character would not be significantly affected.
South & East Islay	30.56	Yes	No. Substantial separation by open sea ensures that character of South & East Islay APQ would not be significantly affected.
Mull of Kintyre	31.74	Yes	No. ZTV indicates very limited theoretical visibility from distant high points.
East Loch Fyne (Coast)	33.51	Yes	No. ZTV indicates very limited theoretical visibility from areas where Loch Fyne and the opposite coastline are the key character influences.
West Loch Fyne (Coast)	33.85	Yes	No. ZTV indicates limited theoretical visibility from areas where Loch Fyne and the opposite coastline are the key character influences.
Jura	35.39	Yes	No. Substantial separation by open sea ensures that character of Jura APQ would not be significantly affected.

Designation / WLA	Distance to nearest turbine (km)	Subject to ZTV-theoretical visibility?	Need to assess effects further within LVIA?
Special Landscape Area			
Isle of Arran	7.50	Yes	Yes. Due to proximity and area with theoretical visibility.
Holy Island	30.38	No	No. No visibility.
Little Cumbrae Island	32.54	No	No. No visibility.
Great Cumbrae Island	34.06	Yes	No. ZTV indicates limited theoretical visibility from areas where the Firth of Clyde and closer proximity islands and landforms are the key character influences.
Pladda	36.89	No	No. No visibility.
North Ayrshire	40.51	Yes	No. Substantial separation by intervening islands and open seas ensure that character of North Ayrshire SLA would not be significantly affected.
Wild Land Area			
03. North Arran	8.22	Yes	Yes. Due to proximity and extent of area with theoretical visibility.
05. Jura, Scarba Lunga and Garvellachs	31.99	Yes	No. Substantial separation by open sea ensures that wild land characteristics would not be significantly affected.

This preliminary assessment has highlighted those landscape designations and WLAs with potential to be significantly affected. This includes the North Arran NSA, Knapdale and Melfort APQ, Isle of Arran SLA, North Arran WLA, and Achamore GDL.

The effects of the Revised Development on the special qualities of the North Arran NSA will be carried out with reference to NatureScot Commissioned Report No. 376 'The Special Landscape Qualities of the National Scenic Areas' and following the approach presented in the draft 'Guidance for Assessing the Effects on Special Landscape Qualities' published by NatureScot in 2018. Through this scoping process, NatureScot's opinion on the potential effects of the tip height increase on the Special Landscape Qualities of the North Arran NSA would be welcome.

The effects of the Revised Development on the wildness qualities of North Arran WLA will be carried out with reference to NatureScot's Descriptions of Wild Land published by NatureScot in 2014 and following the approach presented in 'Assessing Impacts on Wild Land Areas – technical guidance' published by NatureScot in 2020.

The effects of the Revised Development on the Knapdale / Melfort APQ and Isle of Arran SLA will be carried out following the LVIA methodology outlined above. In respect of the GDLs, a detailed assessment will be carried out in the Cultural Heritage Chapter following guidance set out by Historic Environment Scotland.

5.4.4 Visual Receptors and Visual Amenity

The LVIA will undertake an assessment of the likely visual effects of the Revised Development through consideration of the specific visual effects at a selection of representative viewpoints, as shown in Figure 5.2 in Appendix A, and by considering the wider effects on visual amenity with reference to a range of principal visual receptors, as shown in Figure 5.6 in Appendix A.

5.4.4.1 Visualisations

Visualisations and figures will be produced to NatureScot's standards as set out in 'Visual Representation of Wind farms: Version 2.2' (February 2017). In line with NatureScot guidance photomontages will be prepared for viewpoints within a 20 km radius of the nearest turbine.

5.4.4.2 Viewpoint Selection

A preliminary viewpoint list is shown in Table 5.2 below. The locations of the viewpoints are shown in Figure 5.2 in Appendix A. This list was used in the LVIA for the Consented Development and agreement to its use for the assessment of the Revised Development is being sought from the Council and NatureScot. The viewpoints were selected to represent sensitive visual receptors with the potential to undergo significant effects. They were also selected to represent landscape receptors and with consideration of the potential for cumulative effects to arise

Table 5.2: Preliminary Representative Viewpoint Locations

ID	Viewpoint name	Grid ref. (Preliminary)		Dist. nearest turbine (km)	Receptors represented
1	Catacol	191140	649748	10.0 E	Arran Raised Beach Coast LCT, North Arran NSA, North Arran SLA, users of minor road, residents, visitors.
2	Kintyre Way	173335	643879	7.7 SW	Upland Forest Moor Mosaic LCT, users of Kintyre Way LDR.
3	A83, north of Clachan	178308	657937	7.4 NNW	Upland Forest Moor Mosaic/Rocky Mosaic LCTs, users of A83.
4	Carradale Harbour	181928	638616	10.4 SSE	Rocky Mosaic LCT, APQ East Kintyre (Coast), residents and visitors.
5	Claonaig Slipway	187506	656091	8.6 NE	Rocky Mosaic LCT, ferry passengers, users of the B8001/Kintyre Way LDR, residents and visitors.
6	Goatfell, Arran	199146	641565	19.9 ESE	Arran Rugged Granitic Upland LCT, North Arran NSA, North Arran SLA, North Arran WLA, hill walkers.
7	Pirnmill, Arran	187201	644173	8.3 SE	Arran Raised Beach Coast LCT, North Arran NSA, North Arran SLA, users of minor road, residents, visitors, walkers.
8	Mullach Buidhe, Arran	190203	642771	11.5 SE	Arran Rugged Granitic Upland LCT, North Arran NSA, North Arran SLA, North Arran WLA, hill walkers.

ID	Viewpoint name	Grid ref. (Preliminary)		Dist. nearest turbine (km)	Receptors represented
9	Skipness Castle	190858	657762	12.3 NE	Rocky Mosaic LCT, residents, visitors.
10	B8001, west of Gartavaich	185312	659188	9.9 NNE	Upland Forest Moor Mosaic LCT, users of B8001 and NCR78.
11	B842, north of Ravensbay	184001	652635	3.7 NE	Rocky Mosaic LCT, residents, users of the B842, NCR78.
12	Kintyre Way south of Campbeltown	176741	614262	34.8 NW	Mull of Kintyre Upland Forest Moor Mosaic LCT, Mull of Kintyre SLA, users of the Kintyre Way.
13	B842, southwest of Cour	182124	647554	2.2 SE	Upland Forest Moor Mosaic/Rocky Mosaic LCTs, users of B842/NCR78, residents.
14	A83 south of West Tarbert	184591	667130	17.2 NW	Rocky Mosaic LCT, users of A83/NCR78, residents.
15	B8024, south of White Cottage	175078	661352	11.2 NW	Rocky mosaic LCT, Knapdale/Melfort SLA, users of B8024/NCR78, residents.
16	Bute - viewpoint near Carrick Point	204474	659349	25 NE	Bute Open Ridgeland/ Bute Coastal Plain LCTs, Bute and South Cowal SLA, users of A844, visitors to viewpoint, residents.
17	Craighouse, Jura	152683	667296	30.3 NW	NSA Jura, users of A846, residents, visitors, ferry passengers.
18	Ardminish, Gigha	164902	648983	13.2 W	Coastal Parallel Ridges LCT, residents, visitors, ferry passengers.
19	VP19 East Tarbert Bay, Gigha	165545	652269	12.9 W	Coastal Parallel Ridges LCT, residents, road-users, walkers
20	VP20 Lochranza Ferry Terminal	192676	651044	12.4 NE	Arran Raised Beach Coast LCT, North Arran NSA, Isle of Arran SLA, residents, road-users, walkers
21	VP21 Lochranza Ferry	190530	652867	10.7 NE	Ferry passengers
22	VP22 Kilbrannan Sound	185993	648068	5.7 E	Water-borne passengers
23	VP23 Sound of Jura	165992	656388	13.8 W	Water-borne passengers

5.4.5 Residential Visual Amenity Assessment

Properties that lie within a 2 km radius of the Revised Development will be included in the Residential Visual Amenity Assessment (RVAA). The RVAA will be prepared in accordance with the Landscape Institute's Technical Guidance Note 2/19 'Residential Visual Amenity

Assessment⁵⁰. This guidance sets out the 'Steps' to be followed when undertaking a RVAA and highlights how it should be informed by the principles and processes of GLVIA3. The purpose of the RVAA is to identify those properties where the effect of the Revised Development leads to the 'Residential Visual Amenity Threshold' being reached or, in other words, where the effect could be described as overwhelming or overbearing. The study area is set at a 2 km radius in line with the maximum radius recommended in the technical guidance. The RVAA will consider the effect on views from each property, as well as views from the associated garden grounds and access tracks.

5.4.6 Potential Effects of Turbine Lighting

A key factor in the development of turbines greater than 150 m in height is the requirement for them to have visible red, medium intensity (2,000 candela) lights fitted in accordance with Civil Aviation Authority (CAA) guidance. The details of the lighting requirements for the Revised Development are currently being defined along with potential mitigation measures.

OPEN will, if required, prepare a night-time impact assessment section and visualisations illustrating turbine lighting at night, for inclusion in the LVIA. The hub height ZTV will be used to identify where there would be direct line of sight of the lights from the surrounding area. OPEN has undertaken night-time lighting assessments and visualisations for several other wind farm projects in the UK which will inform the approach to assessment of turbine lighting and the basis of our professional judgement about the level of effect arising from the proposed lighting.

In order to inform this assessment, OPEN will take photographs from three of the readily accessible viewpoints at dusk (photographs to be taken after the period of civil twilight) and will prepare visualisations to represent the effects of lighting on these views. It is proposed that the following three viewpoints be used to represent the effects of night-time lighting;

- Viewpoint 5: Claonaig Slipway;
- Viewpoint 7: Pirnmill, Arran; and
- Viewpoint 11: B842, North of Ravensbay A815.

These have been selected to represent the effects on road-users and residents in this local area who would be most likely to be affected. Night-time visualisations will be in accordance with NatureScot guidance.

5.4.7 Summary of Key Sensitivities

- Close range views from residential properties and small settlements in the vicinity of the Site;
- Sequential cumulative effects on users of the B842, B8001, NCR 78, minor roads around north-west Arran and the Kintyre Way LDR;
- Localised cumulative effects on landscape character of Upland Forest Moor Mosaic LCT and Rocky Mosaic LCT;
- Visibility of the Revised Development and cumulative wind farms from Achamore House GDL has the potential to affect their landscape qualities;
- Visibility of the Revised Development and cumulative wind farms from Knapdale / Melfort APQ has the potential to affect their panoramic landscape qualities;
- Visibility of the Revised Development and cumulative wind farms from the North Arran NSA and SLA has the potential to affect their special landscape qualities;
- Visibility of the Revised Development and cumulative wind farms from the North Arran WLA has the potential to affect its special wildness qualities; and

⁵⁰ The Landscape Institute (2019). Technical Guidance Note 2/19 'Residential Visual Amenity Assessment'

- Visibility of the Revised Development and cumulative wind farms from ferries between Lochranza-Claonaig and Lochranza-Tarbert and from vessels using the Kilbrannan Sound.

5.5 Scope of Assessment

The preliminary baseline assessment presented in Section 5.4 above has identified those landscape and visual receptors with potential to be significantly affected by the Revised Development and, therefore, which require to be assessed in detail in the LVIA. A summary of those receptors to be scoped in and out of the LVIA is presented below.

5.5.1 Scoped In Effects and Receptors

- All Landscape Character Assessments (LCAs) within a 20 km radius of the Revised Development where there is sufficient actual visibility for a significant effect to arise.
- Landscape designations including the North Arran NSA, Knappdale and Melfort APQ, and Isle of Arran SLA.
- The mapped interest of the North Arran WLA.
- All representative viewpoints set out in Table 5.2 above.
- All settlements and roads within 20 km where there is sufficient actual visibility for a significant effect to arise.
- All core paths and other recreational routes within 20 km where there is sufficient actual visibility for a significant effect to arise.

5.5.2 Scoped Out Effects and Receptors

- All LCAs outwith a 20 km radius of the Revised Development where there is sufficient actual visibility for a significant effect to arise.
- Landscape designations where there is insufficient actual visibility for a significant effect to arise.
- Mapped interests where there is insufficient actual visibility for a significant effect to arise.
- All settlements and roads outwith 20 km.
- All core paths and other recreational routes outwith 20 km.

5.6 Questions for Consultees

- Do you have any comments on the proposed methodology?
- Are you in agreement with the proposed Study Area?
- Are you in agreement that the assessment of the effects on landscape character receptors should focus on areas within a 20 km radius?
- Are you in agreement with the proposal to scope out the Landscape Planning Designations where no further assessment is proposed in the LVIA as set out in Table 5.1?
- Are there any specific concerns regarding the potential effects of the tip height increase between the Consented Development and Revised Development, on the Special Landscape Qualities of the North Arran NSA?
- Do you have any comments or suggestions in relation to the Preliminary Representative Viewpoint Locations shown in Table 5.2 and illustrated in Figure 5.2 in Appendix A?
- Do you have any comments or suggestions in relation to the proposed approach to the night-time assessment and selection of three night-time viewpoints?
- Do you have any comments on the proposed cumulative wind farm assessment?

6 ECOLOGY

6.1 Introduction

Chapter 7: Ecology of the Environmental Impact Assessment Report (Consented Development's EIA Report) presented an assessment of effects of the Consented Development on ecological features during construction and operation. The purpose of this section of the Scoping Report is to:

- Provide a comparison of the Revised Development with the Consented Development, and identify any new effects or determine which predicted ecological effects may be subject to change due to amendments to the Consented Development;
- Summarise the key sensitivities and baseline conditions in relation to ecological features;
- Demonstrate how consultation feedback on the Consented Development will be taken into consideration for the Revised Development, if necessary;
- Describe the methodology to be used for assessing the new effects or changes in predicted effects arising from the amendments to the Consented Development; and
- Outline the proposed scope of assessment in relation to ecological features and effects to be considered in the Revised Development's EIA Report.

This section of the Scoping Report was written by MacArthur Green, authors of Chapter 7 of the Consented Development's EIA Report.

6.1.1 Comparison with Extant Consent

The Revised Development will comprise largely of the same development footprint of the Consented Development, and likely require a similar construction programme to that outlined in the Consented Development's EIA Report. The main difference, in terms of potential ecological effects, relates to an increase in turbine dimensions, from a 150 m rotor tip height and 84 m hub height to a 180 m rotor tip height and 101 m hub height. As a consequence of this tip height increase, aviation lighting would be required on turbines. In terms of ecological features, the most likely effects associated with these changes in turbine specifications would relate to changes in collision risk to bats during the operational period.

As detailed in Section 1.1, the proposed turbine locations, subject to micro-siting, are unchanged. However, changes to the turbines locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed as appropriate.

Additionally, the ancillary infrastructure and access tracks may be subject to minor alterations to accommodate larger turbines. If minor changes occur, the extent of significant environmental impacts is not anticipated to change as a result of these amendments.

The Applicant remains committed to the ecological mitigation measures included in the Consented Development's EIA Report which will remain applicable for any minor changes to the ancillary infrastructure associated with the Revised Development.

The exception to this will be if the baseline has significantly changed since the Consented Development's EIA Report. If this is the case, an updated assessment will be undertaken where appropriate.

6.2 Relevant Guidance and Legislation

The key sources of guidance and legislation relating to ecology are listed below. Planning policies of relevance to this assessment are provided in Chapter 4: Energy and Planning Policy.

The assessment will be undertaken in line with the following European legislation and National legislation:

- Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (the Habitats Directive);
- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (the Water Framework Directive); and
- Environmental Impact Assessment Directive 2014/52/EU (the EIA Directive).
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations);
- Circular 1/2017; The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- Planning Advice Note (PAN) 1/2013 – Environmental Impact Assessment, Revision 1.0 (Scottish Government 2017).

The following National legislation and policy required to transpose the above European legislation will be considered as part of the assessment:

- The Nature Conservation (Scotland) Act 2004 (as amended);
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (the Habitats Regulations);
- The Water Environment and Water Services (Scotland) Act 2003;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011;
- The Wildlife and Countryside Act 1981 (as amended);
- The Wildlife and Natural Environment (Scotland) Act 2011; and
- The Protection of Badgers Act 1992.

The assessment will be carried out in accordance with the principles contained within the following guidance documents:

- CIEEM (2018)⁵¹ Guidelines for Ecological Impact Assessment;
- Collins, J. (2016)⁵²;
- European Commission (2011)⁵³;
- JNCC (2013)⁵⁴;
- Scottish Executive (2000⁵⁵; 2006⁵⁶);
- Scottish Government (2001⁵⁷; 2010⁵⁸; 2013⁵⁹; 2016⁶⁰; 2017a⁶¹; 2017b⁶²);

⁵¹ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (version 1.1). Chartered Institute of Ecology and Environmental Management, Winchester.

⁵² Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust.

⁵³ European Commission (2011) Wind Energy Developments and Natura 2000.

⁵⁴ Joint Nature Conservation Committee (JNCC) (2013) Guidelines for selection of biological Sites of Special Scientific Interest (SSSI).

⁵⁵ Scottish Executive (2000) Nature conservation: implementation in Scotland of EC Directives on the conservation of natural habitats and of wild flora and fauna and the conservation of wild birds ('The Habitats and Birds Directives'). Revised guidance updating Scottish Office Circular no. 6/1995.

⁵⁶ Scottish Executive (2006) The Scottish Forestry Strategy (SFS).

⁵⁷ Scottish Government (2001) European Protected Species, Development Sites and the Planning Systems: Interim guidance for local authorities on licensing arrangements.

⁵⁸ Scottish Government (2010) Management of Carbon-Rich Soils.

⁵⁹ Scottish Government (2013) 2020 Challenge for Scotland's Biodiversity.

⁶⁰ Scottish Government (2016) Draft Peatland and Energy Policy Statement.

⁶¹ Scottish Government (2017a) Planning Advice Note 1/2013 - Environmental Impact Assessment, Revision 1.0.

⁶² Scottish Government (2017b) Planning Circular 1/2017: Guidance on The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

- SEPA (2017a⁶³; 2017b⁶⁴);
- Scottish Renewables *et al.* (2019)⁶⁵;
- NatureScot (SNH, 2012⁶⁶; 2013⁶⁷; 2015⁶⁸; 2016⁶⁹; 2018⁷⁰; 2020⁷¹); and
- SNH *et al.* (2019)⁷².

6.3 Key Sensitivities and Baseline Conditions

Baseline ecology surveys were carried out for the Consented Development in 2018. A desk study was also conducted in preparation of the Consented Development's EIA Report.

From the results of the field surveys and desk study, only one Important Ecological Feature (IEF), wet modified bog, was taken forward to assessment, based on potential for significant effects. A summary of baseline conditions is provided below:

- The Site is dominated by coniferous plantation woodland and wet modified bog. There are smaller interspersed extents of other various habitat types such as blanket bog, wet heath, dry heath, marshy grassland and flushes;
- The vast majority of the wet modified bog is a grassy sward of purple moor-grass, of the National Vegetation Classification (NVC) type M25 *Molinia caerulea* – *Potentilla erecta* mire. It was predicted that 5.8 ha would be subject to direct and indirect habitat loss;
- There was evidence of otter *Lutra lutra* and water vole *Arvicola amphibius* along watercourses onsite, but no protected features were considered to be affected by the Consented Development;
- Probable pine marten *Martes martes* scats were recorded but no protected features were observed;
- No bat roosts, or potential bat roosts, were found within the Site. Six bat species were recorded: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, Daubenton's bat *Myotis daubentonii*, Natterer's *Myotis nattereri* and brown long-eared bat *Plecotus auritus*. Bat activity was assessed as low across the Site for all species; and
- No fish of any species or freshwater pearl mussel *Margaritifera margaritifera* were recorded during baseline habitat suitability and electrofishing surveys; very limited suitable fish habitat exists within the Site.

The only designated site with terrestrial, non-avian ecological qualifying features within 5 km of the Site is Claonaig Wood Site of Special Scientific Interest, which lies 4.3 km northeast of the Site, and with previous agreement with NatureScot, all designated sites were scoped out of the assessment in the Consented Development's EIA Report.

⁶³ Scottish Environment Protection Agency (SEPA) (2017a) Land Use Planning System Guidance Note 4 - Planning guidance on on-shore windfarm developments.

⁶⁴ SEPA (2017b) Land Use Planning System Guidance Note 31 - Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems;

⁶⁵ Scottish Renewables, SNH, SEPA, Forestry Commission (Scotland), Historic Environment Scotland & AEECoW (2019) Good Practice During Windfarm Construction (4th Edition).

⁶⁶ Scottish Natural Heritage (2012) Assessing the Cumulative Impact of Onshore Wind Energy Developments.

⁶⁷ Scottish Natural Heritage (2013) Planning for Development: What to consider and include in Habitat Management Plans.

⁶⁸ Scottish Natural Heritage (2015) Scotland's National Peatland Plan.

⁶⁹ Scottish Natural Heritage (2016) Planning for Development: What to consider and include in deer assessments and management at development sites (Version 2).

⁷⁰ Scottish Natural Heritage (2018) Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland.

⁷¹ Scottish Natural Heritage (2020) General Pre-application and Scoping Advice to Developers of Onshore Wind Farms.

⁷² Scottish Natural Heritage, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter & Bat Conservation Trust (BCT) (2019) Bats and Onshore Wind Turbines: Survey Assessment and Mitigation.

6.3.1 Consultee Responses to the Consented Development's EIA Report

Comments relating to the ecology assessment within the Consented Development's EIA Report were provided by NatureScot and RSPB Scotland to the Scottish Government during the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 6.1.

Table 6.1. Consultee comments on the Consented Development relating to ecology.

Consultee	Comment	Response
NatureScot (letter dated 30 August 2019)	NatureScot agrees with the assessment of ecological impacts within the Consented Development's EIA Report and with the mitigation measures that it proposes.	The Applicant remains committed to the ecological mitigation measures included in the Consented Development's EIA Report.
	Although specifically aimed at addressing ornithological sensitivities at the Site, the Habitat Management Plan (HMP) will also help to mitigate habitat loss.	The Applicant remains committed to management measures presented in the Consented Development's EIA Report Appendix A8.3: Outline Habitat Management Plan, and agreement with consultees will be reached prior to HMP finalisation.
	NatureScot would like to see a commitment included in the HMP to remove and, if necessary, undertake follow up control work to prevent invasion of <i>Rhododendron ponticum</i> , particularly into sensitive heath, bog and native woodland habitats which will be created or restored in the HMP area.	Only a very small extent of rhododendron was recorded in the survey area in 2018 and as such no specific management was considered necessary for inclusion in the HMP. Vegetation monitoring will however take place as part of the HMP monitoring programme, and if results suggest that the species has become more prevalent within sensitive habitats in the HMP area, then management would be considered during the next HMP report review.
RSPB Scotland (letter dated 29 August 2019)	RSPB recommended the following consent condition requirements relating to ecology: <ul style="list-style-type: none"> • HMP agreement and implementation; • An Ecological Clerk of Works (ECoW) to oversee construction; and • An appropriate programme of post-construction monitoring of HMP habitats. 	The Applicant is committed to implementing each of the three recommended conditions of consent.
SEPA (letter dated 1 August 2019)	SEPA welcomes the inclusion of an Outline HMP as part of the submission, and the proposal to restore the blanket bog and dwarf shrub heath. They ask that a condition is applied requiring a finalised HMP and provide advice as to where new tree planting should take place in relation to groundwater dependent terrestrial ecosystems and sensitive habitats.	The Applicant remains committed to management measures presented in the Consented Development's EIA Report Appendix A8.3: Outline Habitat Management Plan, and agreement with consultees will be reached prior to HMP finalisation. SEPA's advice in relation to restrictions in planting on particular habitat types will be followed.

6.4 Assessment Methodology

The planned assessment methodology (see section 3: EIA Methodology for outline) will remain consistent with that used for the Consented Development's EIA Report, Chapter 7: Ecology, as previously agreed with consultees. This will follow the principles presented in the CIEEM (2018) guidance, and various guidance listed in section 6.2. The consistency of approach will allow for a direct comparison of predicted effects between the Consented Development and the Revised Development.

6.5 Scope of Assessment

The aim of the ecology assessment in the Revised Development's EIA Report will be to determine whether the amendments made to the Consented Development, as outlined in 'Section 2: The Revised Development' of this Scoping Report, will result in any new effects or change the significance of predicted effects upon ecological features previously assessed in Chapter 7 of the Consented Development's EIA Report. The proposed scope is outlined below.

6.5.1 Scoped In Effects

As the main amendment to the Consented Development relates to a change in turbine dimensions, it is considered that the only potential changes in predicted significance of effects on IEFs may relate to bat collision risks during the operational period. Effects on bats relating to aviation lighting on turbines, including possible relationships with collision risks, have also been identified.

Bats were scoped out of the Consented Development's assessment due to a lack of bat roosts onsite and low activity rates for all species. Effort will however be made in the Revised Development's EIA Report to determine whether the change in turbine dimensions and addition of lighting may alter the behaviour and risk of collisions to bats at a population level, based on any new scientific information available since the Consented Development's EIA Report submission.

Although baseline bat surveys were conducted in 2018, prior to the release of the NatureScot (SNH *et al.* 2019⁷³) guidance on bat surveying and assessment, consultation between MacArthur Green and NatureScot in the preceding two years meant that a number of methodological requirements that form part of the 2019 guidance were implemented. Therefore, much of the survey method was in line with the 2019 guidance, for example, with respect to the number of bat detectors deployed and the number of nights deployed. The subsequent analysis of bat data and assessments of bat activity were revised and updated to consider the 2019 guidance as far as practicable (see EIA Report Appendix A7.3 for details). As such, with no significant changes in land use since 2018, it is considered that the bat survey results remain applicable and sufficient for assessment purposes.

It is considered that no further IEFs, including wet modified bog previously assessed, require detailed assessment, with conclusions being unchanged from the Consented Development's EIA Report.

No cumulative assessment was considered necessary for wet modified bog, or any other IEF in the Consented Development's EIA Report. Due to the lack of changes to predicted effects caused by the Revised Development, this is likely to be the case again for all IEFs, with the possible exception of bats, should a potential unmitigated significant effect be concluded for the Revised Development alone.

⁷³ Scottish Natural Heritage, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter & Bat Conservation Trust (BCT). (2019). Bats and Onshore Wind Turbines: Survey Assessment and Mitigation. Available online at <https://www.nature.scot/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation> [Accessed 09/02/2021]

6.5.2 Scoped Out Effects

It is considered that, with the exception of collision risk to bats and lighting effects during the operational period, all construction and operational effects associated with the Revised Development will remain unchanged from those predicted in the Consented Development's EIA Report. As such, no detailed assessment will be included for these effects if, at the time of assessment, there is no new information to suggest that any changes in predicted significance would occur.

6.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do consultees agree that the baseline survey data available, combined with a refresher desk study, are sufficient to be able to conduct an ecological assessment of the Revised Development?
- Do consultees agree that, subject to further information coming to light from the desk study, the scope of Important Ecological Features to be included in the assessment remains appropriate?
- Do consultees agree that the methodology and scope of the assessment, focussing on changes to predicted bat collision effects, and lighting effects during the operation phase is appropriate?
- Do consultees agree that the planned habitat management work, subject to agreement and finalisation of the HMP, plus Species Protection Plan, ECoW and HMP monitoring programme, is sufficient for complying with the requested planning consent conditions in the Consented Development's Scoping Opinions in 2019?

7 ORNITHOLOGY

7.1 Introduction

Chapter 8: Ornithology of the Environmental Impact Assessment Report (Consented Development's EIA Report) presented an assessment of effects of the Consented Development on birds, in terms of habitat loss, disturbance, displacement, barrier effects and collision risk. The purpose of this section of the Scoping Report is to:

- Provide a comparison of the Revised Development with the Consented Development, and identify any new effects or determine which predicted ornithological effects may be subject to change due to amendments to the Consented Development;
- Summarise the key sensitivities and baseline conditions in relation to ornithological features;
- Demonstrate how consultation feedback on the Consented Development will be taken into consideration for the Revised Development, if necessary;
- Describe the methodology to be used for assessing the new effects or changes in predicted effects arising from the amendments to the Consented Development; and
- Outline the proposed scope of assessment in relation to ornithological features and effects to be considered in the Revised Development's EIA Report.

This section of the Scoping Report was written by MacArthur Green, authors of Chapter 8 of the Consented Development's EIA Report.

7.1.1 Comparison with Extant Consent

The Revised Development will comprise the same development footprint of the Consented Development, and likely require a similar construction programme to that outlined in the Consented Development's EIA Report. The main difference, in terms of potential ornithological effects, relates to an increase in turbine dimensions, from a 149.9 m rotor tip height and 84 m hub height to a 180 m rotor tip height and 101 m hub height. Changes in predicted effects on ornithological features are therefore most likely to be in relation to collision risks, which requires revising the collision risk modelling undertaken for the Consented Development. As a consequence of this tip height increase, aviation lighting would be required on turbines, which can affect birds either by displacement or attraction.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

As detailed in Section 1.1, the proposed turbine locations, subject to micro-siting, are unchanged. However, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed as appropriate.

Additionally, the ancillary infrastructure and access tracks may be subject to minor alterations to accommodate larger turbines. If minor changes occur, the extent of significant environmental impacts is not anticipated to change as a result of these amendments.

The Applicant remains committed to the ornithological mitigation measures included in the Consented Development's EIA Report which will remain applicable for any minor changes to the ancillary infrastructure associated with the Revised Development.

The exception to this will be if the baseline has significantly changed since the Consented Development's EIA Report. If this is the case, an updated assessment will be undertaken where appropriate.

7.2 Relevant Guidance and Legislation

The key sources of guidance and legislation relating to ornithology are listed below. Planning policies of relevance to this assessment are provided in Chapter 4: Energy and Planning Policy.

The assessment will be undertaken in line with the following European legislation and guidance:

- Directive 2009/147/EC on the Conservation of Wild Birds (the EU Birds Directive);
- Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (the Habitats Directive); and
- Environmental Impact Assessment Directive 2014/52/EU (the EIA Directive).

The following national legislation and policy advice will be considered as part of the assessment:

- The Wildlife and Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act 2004 (as amended);
- The Wildlife and Natural Environment (Scotland) Act 2011;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (The Habitats Regulations);
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations);
- Circular 1/2017; The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- Planning Advice Note (PAN) 1/2013 – Environmental Impact Assessment, Revision 1.0 (Scottish Government 2017).

The following guidance will be considered as part of the assessment:

- CIEEM (2018⁷⁴) Guidelines for Ecological Impact Assessment;
- NatureScot guidance on assessment of effects of wind farms on birds (SNH 2000⁷⁵; 2009⁷⁶; 2016⁷⁷; 2017⁷⁸; 2018a⁷⁹; 2018b⁸⁰; 2018c⁸¹; 2019⁸²; 2020⁸³);
- Scottish Executive Rural Affairs Department (SERAD) (2000⁸⁴);
- The Argyll and Bute Council Biodiversity Duty Action Plan (2016-2021); and
- The Scottish Biodiversity List⁸⁵.

⁷⁴ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

⁷⁵ SNH (2000). Windfarms and birds: calculating a theoretical collision risk assuming no avoidance action. SNH Guidance Note. Scottish Natural Heritage;

⁷⁶ SNH (2009) Environmental Statements and Annexes of Environmentally Sensitive Bird Information; Guidance for Developers, Consultants and Consultees. Scottish Natural Heritage.

⁷⁷ SNH (2016) Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage.

⁷⁸ SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage.

⁷⁹ SNH (2018a) Assessing Significance of Impacts from Onshore Wind Farms Outwith Designated Areas. Scottish Natural Heritage.

⁸⁰ SNH (2018b) Assessing the cumulative impacts of onshore wind farms on birds. SNH Guidance Note. Scottish Natural Heritage.

⁸¹ SNH (2018c) Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland. Scottish Natural Heritage.

⁸² SNH joint publication (2019) Good Practice during Wind Farm Construction. 4th Edition. Scottish Natural Heritage.

⁸³ Scottish Natural Heritage (2020) General Pre-application and Scoping Advice to Developers of Onshore Wind Farms.

⁸⁴ SERAD (2000). Habitats and Birds Directives, Nature Conservation; Implementation in Scotland of EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds ('the Habitats and Birds Directives'). Revised Guidance Updating Scottish Office Circular No 6/1995.

⁸⁵ Available at: <https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list>. Accessed on: 07/01/2022.

7.3 Key Sensitivities and Baseline Conditions

Baseline ornithology surveys were carried out for the Consented Development from September 2016 to August 2018. A desk study was also conducted in preparation of the Consented Development's EIA Report.

From the results of the field surveys and desk study, the following Important Ornithological Features (IOFs) were taken forward to assessment, based on their presence within or nearby the Site, and potential for significant effects:

- Greenland white-fronted goose *Anser albifrons flavirostris*. Most activity within and above the Site is likely to be in autumn, when Loch a' Chaorainn and other waterbodies may be used as an autumn staging location (up to 150 birds have been recorded on the loch during this period). Loch a' Chaorainn may also be used intermittently in winter as a night-time roost;
- Black-throated diver *Gavia arctica* and red-throated diver *Gavia stellata*. Breeding behaviour has been recorded within lochs near the Site and occasional flight activity over the Site;
- Black grouse *Tetrao tetrix*. Up to 11 lekking locations recorded within the study area in 2017, with individual leks hosting up to six males and three females;
- Golden eagle *Aquila chrysaetos*. The Site forms part of a breeding territory that was reoccupied in 2010 after an absence of 30 years. Three known nest sites are located to the north of the Site; and
- Hen harrier *Circus cyaneus*. Recorded throughout the year. No nesting recorded within 2 km, but the Site may form part of an extended breeding territory.

Due to the potential usage of waterbodies within the study area by Greenland white-fronted geese connected to the Kintyre Goose Roosts Special Protection Area (SPA), information was presented to be assessed under the Habitats Regulations Appraisal (HRA) process, with the component Kintyre Goose Roosts Ramsar Site, Kintyre Goose Lochs Site of Scientific Interest (SSSI) and Rhunahaorine SSSI included within an EIA context in Chapter 8 of the Consented Development's EIA Report.

7.3.1 Consultee Responses to the Consented Development's EIA Report

Comments relating to the ornithology assessment within the Consented Development's EIA Report were provided by NatureScot and RSPB Scotland to the Scottish Government during the determination of the Consented Development. These comments, and how they will be addressed, are summarised in Table 7.1.

Table 7.1. Consultee comments on the Consented Development relating to ornithology

Consultee	Comment	Response
NatureScot (letter dated 30 August 2019)	<p>Greenland white-fronted goose:</p> <p>Advised that, based on the information provided and appraisal carried out to date, the Consented Development will not adversely affect the integrity of the Kintyre Goose Roosts SPA. This also accounts for interests of the component Ramsar Site and SSSIs.</p> <p>NatureScot was content with the Consented Development's EIA assessment and proposed mitigation for Greenland white-fronted geese and the associated SPA.</p>	<p>The SPA will again be considered within an HRA context, and it will be determined whether amendments as part of the Revised Development would alter this conclusion.</p> <p>Component Ramsar Site and SSSIs will be considered within the EIA process.</p>

Consultee	Comment	Response
	<p>Black grouse: Agreed with the findings of the Consented Development's EIA, proposed mitigation measures, and habitat enhancement as part of a Habitat Management Plan (HMP).</p>	<p>The Applicant remains committed to management measures presented in the Consented Development's EIA Report Appendix A8.3: Outline Habitat Management Plan, and agreement with consultees will be reached prior to HMP finalisation.</p>
	<p>Black-throated diver: NatureScot agrees with the findings of the Consented Development's EIA and is supportive of the proposed construction mitigation measures, and artificial raft installation.</p>	<p>Construction mitigation would remain the same as that outlined in the Consented Development's EIA Report, as would the raft installation as part of the HMP.</p>
	<p>Golden eagle: NatureScot considers that the principal unmitigated impact on golden eagles is the possibility that the Consented Development would further constrain the availability of hunting grounds and cause an already restricted territory to be abandoned by the resident eagle pair. As such, they have requested that the implementation of the HMP, as outlined in Appendix A8.3 of the Consented Development's EIA Report should be required as a consent condition, alongside a commitment to habitat preparation works (conifer forest felling) at least two growing seasons prior to construction commencing.</p>	<p>The Applicant has committed to carrying out the habitat preparation works and implementation of the HMP, as agreed with NatureScot. It is planned that felling as part of the habitat preparation works will commence in February 2022. Recent information on breeding location and productivity of the resident golden eagle pair will be obtained as part of a desk study for the Revised Development's EIA Report, as well as helping to ensure that no disturbance to nesting birds will result from habitat preparation works.</p>
<p>RSPB Scotland (letter dated 29 August 2019)</p>	<p>Greenland white-fronted goose: RSPB considers it unlikely that there would be an adverse effect on the integrity of the Kintyre Goose Roosts SPA from the Consented Development.</p>	<p>Noted. See response to NatureScot comment above.</p>
	<p>Golden eagle: RSPB advises that without mitigation (the HMP), the breeding territory may become un-occupiable, and the HMP is required as a prerequisite for this proposal to proceed and should be attached as a condition to any consent. RSPB would welcome a commitment to start the HMP prior to construction to allow time for habitat creation/management to have a positive mitigating effect before operational turbines may displace birds.</p>	<p>The Applicant has committed to implementation of the HMP and pre-construction habitat preparation works are underway. See responses to NatureScot comments above.</p>

Consultee	Comment	Response
	<p>Red-throated diver: RSPB welcomes the wider conservation measures for the species within the HMP, in order to aid future breeding attempts.</p>	The Applicant remains committed to the planned mitigation and enhancement measures presented in the Consented Development's EIA Report Appendix A8.3: Outline Habitat Management Plan.
	<p>Hen harrier: The management as proposed within the HMP should provide suitable foraging habitat for the species.</p>	Noted.
	<p>Black grouse: Work within the HMP, upland habitat restoration and native woodland creation should benefit this species.</p>	Noted.
	<p>Recommended conditions of consent: RSPB recommended the following consent condition requirements:</p> <ul style="list-style-type: none"> • A bird disturbance management plan to enforce restrictions to construction during the breeding bird season, if required; • HMP agreement and implementation; • An Ecological Clerk of Works (ECoW) to oversee construction; and • An appropriate programme of post-construction monitoring of bird populations and HMP habitats. 	The Applicant is committed to implementing each of the four recommended conditions of consent.

7.4 Assessment Methodology

The planned assessment methodology (see section 3: EIA Methodology for outline) will remain consistent with that used for the Consented Development's EIA Report, Chapter 8: Ornithology, as previously agreed with consultees. This will follow the principles presented in the CIEEM (2018) guidance, and various NatureScot guidance notes listed in section 0. The consistency of approach will allow for a direct comparison of predicted effects between the Consented Development and the Revised Development.

7.5 Scope of Assessment

The aim of the ornithological assessment in the Revised Development's EIA Report will be to determine whether the amendments made to the Consented Development, as outlined in 'Section 2: The Revised Development' of this Scoping Report, will result in any new effects, or change the significance of predicted effects upon ornithological features previously assessed in Chapter 8 of the Consented Development's EIA Report. The proposed scope is outlined below.

7.5.1 Scoped In Effects

The baseline survey data are considered to remain representative of current bird activity within the Site, and so no further field surveys are planned for the Revised Development's assessment. It is anticipated that at this stage, subject to gathering further information as part of a desk-based study, the same IOFs and designated sites presented in section 7.3 will be assessed in the Revised Development's EIA Report. Sources for the refresher desk

study include the following, and effort will be made to obtain as much relevant information as possible:

- Golden eagle monitoring for pre-construction habitat preparation works associated with the Consented Development's HMP which commenced in February 2022;
- Any ECoW bird records obtained while monitoring pre-construction habitat preparation works associated with the Consented Development's HMP;
- The Argyll Raptor Study Group, which will be contacted again to obtain recent information on breeding raptors within and nearby the Site;
- Annual operational monitoring reports up to 2021 for Cour Wind Farm, the survey area of which partially overlaps with the Revised Development Site; and
- Kintyre-wide diver survey monitoring from 2016 to 2020, a planning consent condition for Cour Wind Farm, which covered all lochs around the Revised Development Site.

As the main amendments to the Consented Development relate to a change in turbine dimensions, it is considered that the most likely potential changes in predicted significance of effects on IOFs would relate to collision risks during the operational period. Therefore, the assessment will focus predominantly on the effects of predicted collision rates due to the Revised Development. The potential effects of aviation lighting on birds, including the relationship with collision rates will also be considered in the assessment.

An updated collision risk model has been run in order to determine predicted collision rates for IOFs based on the Revised Development's turbine specifications (Table 7.2). This allows an assessment of potential effects on reference populations to be made, as well as a direct comparison with the estimated collision rates for the Consented Development. It also informs whether the list of IOFs remain appropriate for assessment of the Revised Development. Results indicate that for most species, changes in predicted collision rates associated with the Revised Development's turbine specifications are relatively small, but there is an increase for some IOFs which will be assessed against the appropriate reference population.

Table 7.2. Comparison of estimated mean annual collision rates for the Consented Development (CD) and the Revised Development (RD).

Species	Annual collision rate (mean)			One collision every X years		
	CD	RD	Difference	RD	CD	Difference (± years)
Black grouse	0.021	0.017	-0.004	47.0	59.3	-12.3
Black-throated diver	0.001	0.001	<0.001	1328.2	1344.4	-16.2
Golden eagle	0.099	0.112	0.013	10.1	8.9	1.1
Golden plover	0.156	0.161	0.004	6.4	6.2	0.2
Greenland white-fronted goose	0.070	0.143	0.073	14.2	7.0	7.2
Hen harrier	0.050	0.034	-0.015	20.1	29.2	-9.0
Herring gull	0.013	0.020	0.007	77.1	50.8	26.3
Red-throated diver	0.009	0.010	0.001	112.0	102.8	9.2
White-tailed eagle	0.013	0.013	<0.001	75.8	77.6	-1.8

Species	Annual collision rate (mean)			One collision every X years		
	CD	RD	Difference	RD	CD	Difference (± years)
Whooper swan	0.083	0.094	0.012	12.1	10.6	1.5

An updated cumulative assessment of relevant IOFs and effects will be conducted at a Natural Heritage Zone 14: Argyll West & Islands scale for breeding birds, considering changes in status of any wind farm projects, or new projects in the study area. This will also consider potential cumulative displacement effects which may have changed since the Consented Development's EIA Report. Information for an updated in-combination assessment as part of the HRA process will be provided for Greenland white-fronted goose and the Kintyre Goose Roosts SPA.

7.5.2 Scoped Out Effects

It is considered that habitat loss, construction disturbance and operational displacement and barrier effects associated with the Revised Development will remain unchanged from those predicted in the Consented Development's EIA Report. As such, no detailed assessment will be included if, at the time of assessment, there is no new information to suggest that any changes in predicted significance would occur.

7.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do consultees agree that the baseline survey data available, combined with an updated desk study, are sufficient to be able to conduct an ornithological assessment of the Revised Development?
- Do consultees agree that, subject to further information coming to light from the desk study, the scope of Important Ornithological Features, including designated sites, to be included in the assessment remains appropriate?
- Do consultees agree that the methodology and scope of the assessment, focussing on changes to predicted collision effects, and lighting effects during the operation phase, plus an updated cumulative/in-combination assessment of displacement and collision effects is appropriate?
- Do consultees agree that the planned habitat management work, subject to agreement and finalisation of the HMP, plus bird disturbance monitoring plan, ECoW and HMP monitoring programme, is sufficient for complying with the requested planning consent conditions in the Consented Development's Scoping Opinions in 2019?

8 GEOLOGY, HYDROLOGY AND HYDROGEOLOGY

8.1 Introduction

A hydrological assessment will establish the potential hydrological, hydrogeological and geological receptors associated with the proposed development and determine the baseline conditions. The assessment will be informed by publicly available resources, our knowledge of the site based on the previous assessment for the consented site and from existing developments in the local area.

8.1.1 Comparison with Extant Consent

In respect of considerations relevant to the LVIA, the Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development, however, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur these will be assessed.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

The Applicant remains committed to the hydrological, hydrogeological and geological mitigation measures included in the Consented Development's EIA Report which will remain applicable for any minor changes to the ancillary infrastructure associated with the Revised Development.

A Site Licence issued under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 by SEPA is in place (CAR/S/SEPA2021-574) for the current forestry activities and will be amended to include the construction activities at the appropriate time.

The exception to this will be if the baseline has significantly changed since the Consented Development's EIA Report. If this is the case, an updated assessment will be undertaken where appropriate.

8.2 Assessment Methodology

As detailed in Section 1.1, the Revised Development will largely comprise of an increase in tip height from 149.9 m, as per the Consented Development, to up to 180 m. The ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however, the fundamental design will remain and any changes will be assessed, as appropriate. As the only changes currently relate to tip height, the assessment of impacts relating to the above receptors and potential effects has not changed. Therefore, there is no requirement to carry out any update to the hydrological and hydrogeological assessment.

8.3 Scope of Assessment

As discussed, a scoping report and full EIA has already been carried out for this Development prior to change in turbine design. As such, many of the potential effects on hydrological, hydrogeological and geological receptors have already been assessed. The change in the turbine design is unlikely to alter the outcome of the prior assessment and therefore scoped out of this assessment.

8.3.1 Scoped In Effects

No effects have been scoped in.

8.3.2 Scoped Out Effects

The following effects have been scoped out:

- Impacts on water quality and quantity to private water supplies;
- Cumulative impacts.
- Chemical pollution effects on the hydrological environment;
- Potential erosion and sedimentation effects on the hydrological environment;
- Potential impediments to stream flow;
- Potential changes to soil and peat interflow patterns;
- Potential for the compaction of soils;
- Potential effects for the hydrological function on GWDTEs; and
- Potential for increase in run-off and flood risk.

8.4 Summary

The Applicant seeks to scope out the EIA report chapter for Hydrology, Hydrogeology and Geology.

The Applicant confirms that a Construction licence for forestry works has been obtained and a Construction Site Licence (CSL) for the wind farm construction will be needed so that SEPA has control/oversight of pollution.

8.5 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the effects scoped out of the hydrology and hydrogeology assessment, as there is no change in footprint?

9 ARCHAEOLOGY AND CULTURAL HERITAGE

9.1 Introduction

This section of the Scoping Report establishes the historical baseline and considers the potential impacts of the tip height increase for the Revised Development on the cultural heritage and archaeology resource to determine the requirements for inclusion / exclusion of cultural heritage and archaeology within the Revised Development's EIA Development.

Justification of the scope is presented through an initial baseline assessment of the relevant receptors, and an initial assessment of their sensitivity to the Revised Development.

9.1.1 Comparison with Extant Consent

As detailed in Section 1.1, the proposed turbine locations, are unchanged. However, changes to the turbines locations may occur following completion of the scoping, however should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

Any minor changes to the ancillary infrastructure are unlikely to be significant in terms of cultural heritage features and as a result, the extent of significant effects will remain as assessed in the Consented Development's EIA Report. Therefore, direct effects upon archaeology will be scoped out of the assessment.

The Applicant remains committed to the mitigation measures included in the Consented Development's EIA Report.

The key difference is that the proposed turbines are larger in dimension with an increase from a blade tip height of 149.9 m to 180 m with consideration of changes to setting that affects cultural significance required for the Revised Development.

9.2 Relevant Guidance and Legislation

Heritage legislation of relevance includes:

- The Historic Environment Scotland Act 2014⁸⁶;
- The Ancient Monuments and Archaeological Areas Act 1979⁸⁷; and
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997⁸⁸.

In addition to the aforementioned legislation, the following is a summary of the key heritage policy and guidance:

- NPF3;
- SPP, Paragraphs 135-151;
- NatureScot and Historic Environment Scotland (HES) EIA Handbook⁸⁹;

⁸⁶ Scottish Government (2014) The Historic Environment Scotland Act [Online] Available at http://www.legislation.gov.uk/asp/2014/19/pdfs/asp_20140019_en.pdf (Accessed 01/02/2022)

⁸⁷ UK Government (1979) The Ancient Monuments and Archaeological Areas Act [Online] Available at: <https://www.legislation.gov.uk/ukpga/1979/46> (Accessed 01/02/2022)

⁸⁸ Scottish Government (1997) The Planning (Listed Buildings and Conservation Areas) (Scotland) Act [Online] Available at: <https://www.legislation.gov.uk/ukpga/1997/9/contents> (Accessed 01/02/2022)

⁸⁹ SNH and HES (2018) EIA Handbook [Online] Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=6ed33b65-9df1-4a2f-acbb-a8e800a592c0> (Accessed 01/02/2022)

- Historic Environment Policy for Scotland (HEPS)⁹⁰;
- Our Place in Time: The Historic Environment Strategy for Scotland⁹¹;
- Argyll and Bute Local Development Plan 2015, and Supplementary Guidance⁹², specifically:
 - Policy LDP 3: Supporting the Protection, Conservation and Enhancement of our Environment;
 - Supplementary Guidance (SG) LDP ENV15: Development Impact on Historic Gardens and Designed Landscapes;
 - SG ENV 16a: Development Impact on Listed Buildings;
 - SG ENV 17: Development in Conservation Areas and Special Built Environment Areas;
 - SG ENV 19: Development Impact on Scheduled Ancient Monuments; and
 - SG ENV 20: Development Impact on Sites of Archaeological Importance.
- Planning Advice Note (PAN) PAN 2/2011: Planning and Archaeology⁹³;
- CIfA Standards and Guidance for Desk-Based Assessments⁹⁴; and
- HES (2016) Managing Change in the Historic Environment Series, specifically 'Managing Change in the Historic Environment: Setting'⁹⁵.

9.3 Key Sensitivities and Baseline Conditions

9.3.1 Consultee Responses to the Consented Development's EIA Report

Comments relating to the heritage assessment within the Consented Development's EIA Report were provided by Historic Environment Scotland (HES) and West of Scotland Archaeology Service (WoSAS) who provide heritage advice to Argyll and Bute Council during the determination of the Consented Development in August - November 2019. These comments, and how they will be addressed, are summarised in Table 9.1.

Table 9.1. Consultee comments on the Consented Development relating to ecology.

Consultee	Comment	Response
HES (letter dated 02 August 2019)	HES do not object to the proposal but do consider there to be adverse impacts on the setting of a number of nearby assets including Category A Listed Cour House Saddell (LB18360), An Dunan (SM3184), and Dun Skeig (SM2491).	The Revised EIA Report will consider the setting of these assets and all assets considered as part of the Consented Scheme, noting HES's comments in their response.

⁹⁰ HES (2019) Scottish Environment Policy for Scotland [Online] Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=1bcfa7b1-28fb-4d4b-b1e6-aa2500f942e7> (Accessed 01/02/2022)

⁹¹ Scottish Government (2014) Our Place in Time: The Historic Environment Strategy for Scotland [Online] Available at: <https://www.gov.scot/publications/place-time-historic-environment-strategy-scotland/> (Accessed 1/02/2022)

⁹² Argyll and Bute Council (2015) Local Development Plan. Available at <https://www.argyll-bute.gov.uk/ldp> (Accessed 01/02/2022)

⁹³ The Scottish Government (2011) Planning Advice Note 2/2011 [Online] Available at: <https://www.gov.scot/publications/pan-2-2011-planning-archaeology/> (Accessed 01/02/2022)

⁹⁴ Chartered Institute for Archaeologists (2020) Standard and Guidance for Historic Environment Desk-Based Assessment, Published December 2014, Updated January 2017, Updated October 2020 [Online] Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf (Accessed 01/02/2022)

⁹⁵ HES (2016, updated February 2020) Managing Change in the Historic Environment: Setting [Online] Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549> (Accessed 01/02/2022)

Consultee	Comment	Response
WoSAS (in Argyll and Bute Response dated 20 November 2019)	WoSAS agree with the EIA conclusions regarding both indirect and direct issues raised. WoSAS advice that the proposal raised no substantive archaeological issues.	As there is not change to the Consented Layout, the mitigation remains as presented in the EIA Report for direct effects upon archaeology.

9.3.2 Archaeology and Direct Effects

The archaeological baseline remains as presented in the Consented Development's EIA Report with seven undesignated cultural heritage assets within or partially within the Planning Boundary, as detailed in Table 9.2 and shown in Figure 9.1 in Appendix A. All of these assets were avoided in the Consented Scheme with no direct effect and no significant effects predicted. Additionally, the archaeological potential to encounter unknown subsurface archaeological remains was identified as low, as exposed upland locations were generally utilised for seasonal transhumance pastoral activities with shieling huts being the most common feature found near watercourses. The location of site infrastructure has not changed, and effects to archaeology will be as presented for the Consented Scheme, so effects upon archaeology will be scoped out of the assessment.

Table 9.2: Heritage Features within the Planning Boundary

Site ID (from Consented Development's EIA Report TA10.1 DBA)	HER or Other Reference	Canmore ID	Name	Type	Period
50	WoSAS pin: 3905	39315	Crossaig Glen	Bloomery	Presumed Post-Medieval
52	WoSAS pin: 12925	76295	Gleann Laoigh	Shieling-huts	Presumed Post-Medieval
53	WoSAS pin: 12926	76296	Gleann Laoigh	Shieling-huts	Presumed Post-Medieval
122	WoSAS pin: 44951	154372	Crossaig Glen	Farmstead	Presumed Post-Medieval
254	WoSAS pin: 68164	n/a	Spearsaig	Sheepfold	Presumed Post-Medieval
257	WoSAS pin: 68167	n/a	South Crossaig	Milestone	Presumed Post-Medieval
263	HM-1	n/a	n/a	Sheepfold	Presumed Post-Medieval

9.3.3 Cultural Heritage and Changes to Setting that Affects Cultural Significance

The location of site infrastructure has not changed, and the only aspect of the Revised Development likely to affect heritage assets is the potential for increased visibility. The increased visibility is most likely to have an effect where visibility is introduced where it was not currently predicted by the consented scheme or for those assets in close proximity where the tip height increase would be more visually apparent in conjunction with the existing Cour Wind Farm to the south (effects for the Consented Development detailed in Table 9.3 and Table 9.4).

There are no World Heritage Sites, Garden and Designed Landscapes, Conservation Areas or Registered Battlefields within 5 km from site boundary. There is a total of ten Scheduled Monuments and 12 Listed Buildings (of all categories) within this 5 km radius, as shown in Figure 9.2 in Appendix A and detailed in Tables 9.3 and 9.4.

Table 9.3: Scheduled Monuments Assessed for Consented Scheme

SM Number	Scheduled Monument Name	Approximate distance and direction from nearest Turbine	Within Consented ZTV / Tip Height Increase ZTV	Effect Identified in Consented Development's EIA Report	Scoped in/out for Assessment for tip height increase
175	Ballochroy, three standing stones and cist	5.6 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
212	Loch Ciaran, standing stone 1430m SW of Achaglass	4.7 km NW of T1	Y / Y	Minor and Not Significant	Scoped In
2487	Corriechrevie, cairn	6.0 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
2491	Dun Skeig, duns and fort	7.5 km NW of T1	Y / Y	Minor and Not Significant	Scoped In
3184	An Dunan, dun 70m SW of Minen	3.3 km NW of T1	Y / Y	Minor and Not Significant	Scoped In
3185	Ronachan Bay, fort	6.3 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
3643	Sunadale, dun	4.3 km SE of T10	N / N	Negligible and Not Significant	Scoped Out
3673	Dun Ronachian, dun 400m NE of Ronachan House	6.3 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
3676	Clachan Churchyard, Cross, Cross Slabs and Tombstones	6.3 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
3695	Ballinakil House, cross by entrance to drive	6.3 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
3817	Talatoll, shielings	3.2 km NW of T1	Y / Y	Minor and Not Significant	Scoped In

Table 9.4: Listed Buildings within the 5 km Study Area

Listed Building Number	Listed Building Name	Category	Approximate distance and direction from nearest Turbine	Consented ZTV / Tip Height Increase ZTV	Effect Identified in Consented Development's EIA Report	Scoped in/out
12017	Clachan, Kilcalmonell And Kilberry Parish Church and Burial-Ground	Category B Listed Building	6.3 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12018	Clachan, Kirkland	Category B Listed Building	6.4 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12019	Clachan, Kilcalmonell free church	Category B Listed Building	6.4 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12020	Clachan, Kilcalmonell free church Gateway	Category C Listed Building	6.4 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12021	Ballinakill House	Category C Listed Building	6.4 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12022	Ballinakill Lodge	Category B Listed Building	6.4 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12023	Ballinakill Gate House	Category C Listed Building	6.4 km N-NW of T1	N / N	Negligible and Not Significant	Scoped Out
12024	Ronachan House	Category B Listed Building	6.5 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
12025	Ronachan Estate Bridge	Category C Listed Building	6.4 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
12026	Ronachan Estate Bridge	Category C Listed Building	6.5 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
13070	Ronachan Estate, North Lodge	Category C Listed Building	6.4 km NW of T1	N / N	Negligible and Not Significant	Scoped Out
18360	Cour House	Category A Listed Building	2.2 km SE of T10	Y / Y	Minor and Not Significant	Scoped In

9.4 Assessment Methodology

The assessment of changes to setting that affects cultural significance will consider the sensitivity of a cultural heritage feature and the magnitude of any potential change, to conclude whether the effect is significant. The assessment conclusions will be informed by professional judgement and use the same methodology as for the Consented Development's EIA.

9.5 Scope of Assessment

Direct effects upon archaeology are proposed to be scoped out of consideration as if minor changes occur to ancillary infrastructure, the extent of significant environmental impacts is not anticipated to change as a result of these amendments.

Consideration of changes to setting that affects cultural significance for assets scoped into the assessment is as detailed within Table 9.2 and Table 9.3. All other heritage assets are scoped out for consideration of changes to setting that affects cultural significance.

The Desk-Based Assessment baseline presented in the Consented Development's EIA and provided as Appendix C will be used to inform the baseline situation for the assessment.

9.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the proposed methodology and scope of assessment?
- Are consultees content to scope out all direct effects upon archaeology as the location of site infrastructure has not changed, and the only aspect of the Revised Development (tip height increase) likely to affect heritage assets is the potential for increased visibility affecting setting?
- Are consultees content with the approach to focus consideration of changes to setting that affects cultural significance on those assets detailed in Section 9.3?
- Are the consultees aware of any further sites with statutory protection within the wider landscape whose settings may be affected by the Revised Development?
- Do the consultees have details of any cultural heritage sites in the vicinity of the Revised Development site which it considers may raise significant issues within the EIA process for this Revised Development?

10 NOISE

10.1 Introduction

Sources of noise during operation of a wind turbine are both mechanical (from machinery housed within the turbine nacelle) and aerodynamic (from the movement of the blades through the air). Modern turbines are designed to minimise mechanical noise emissions from the nacelle through isolation of mechanical components and acoustic insulation of the nacelle. Aerodynamic noise is controlled through the design of the blade tips and edges. In most modern wind turbines, aerodynamic noise is also restricted by control systems which actively regulate the pitch of the blades.

While noise from the wind turbines does increase with wind speed, at the same time ambient background noise (for example wind in trees) usually increases at a greater rate. Planning conditions are used to enforce compliance with specified limits.

10.1.1 Comparison with Extant Consent

The Consented Development was granted planning permission in 2020 under a Section 36 application, consisting of a 10-turbine installation with tip height 149.9 m. Following acquisition of the Extant Consent by the Applicant, it is proposed that the turbine tip height be increased to 180 m. The Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development, however, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur these will be assessed.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

The Applicant remains committed to the noise mitigation measures included in the Consented Development's EIA Report which will remain applicable for any minor changes to the ancillary infrastructure associated with the Revised Development.

Whilst all turbines will likely remain in the same position as the Consented Development, due to the change in tip height and associated change in noise immission, the effects of noise from the Revised Development require re-evaluation following the methodology presented in this Chapter.

10.2 Relevant Guidance and Legislation

10.2.1 Guidance

The following guidance and information sources are pertinent to the assessment of wind turbine noise:

- The Scottish Government's planning information on onshore wind turbines⁹⁶;
- Planning Advice Note 1/2011 (PAN1/2011): Planning and Noise⁹⁷;
- ETSU-R-97: The Assessment and Rating of Noise from Wind Farms⁹⁸; and

⁹⁶ Scottish Government (2014). 'Onshore Wind Turbines'. Available Online At: <https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/> (Accessed 28/01/2022)

⁹⁷ The Scottish Government (2011) PAN 1/2011: Planning and Noise

⁹⁸ ETSU (1996) ETSU-R-97 The Assessment and Rating of Noise from Wind Farms

- A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise⁹⁹.

10.2.1.1 Scottish Government Planning Information on Onshore Wind

The Scottish Government's Online Renewables Planning Advice states that ETSU-R-97 should be used to assess and rate noise from wind energy developments, together with the Institute of Acoustics' *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*.

10.2.1.2 PAN 1/2011: Planning and Noise

PAN 1/2011 provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise. It promotes the principles of good acoustic design and the appropriate location of new potentially noisy development. An associated Technical Advice Note offers advice on the assessment of noise impact and includes details of the legislation, technical standards and codes of practice appropriate to specific noise issues.

Appendix 1 of the Technical Advice Note: Assessment of Noise describes the use of ETSU-R-97 in the assessment of wind turbine noise.

10.2.1.3 ETSU-R-97

The assessment methodology for operational noise is described in ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms'. The aim of ETSU-R-97 is to provide:

"Indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding unduly to the costs and administrative burdens on wind farm developers or local authorities".

The report makes it clear from the outset that any noise restrictions placed on a development must balance the environmental impacts of the proposed development against the national and global benefits which would arise through the development of renewable energy sources.

Noise criteria (or limits) are specified, which are a combination of a margin of 5 dB above the prevailing, wind speed-dependent, background noise level and fixed lower noise limits, which are applicable in low background noise situations. The fixed lower noise limits are defined as:

- 35 - 40 dB, $L_{A90,10min}$ during the day, with the value chosen dependent on the number of affected properties, the effect of the number of kWh (kilowatt-hours) generated and the duration and level of exposure;
- 43 dB, $L_{A90,10min}$ at night, a level chosen to safeguard against sleep disturbance; and
- 45 dB, $L_{A90,10min}$ at properties where the occupier has a financial involvement in the proposed development, during both the day and night.

10.2.1.4 The Good Practice Guide

The Good Practice Guide (GPG) was published by the Institute of Acoustics (IOA) in May 2013 and has been endorsed by the Scottish Government as current industry best practice (IOA, 2013). The guide presents current good practice in the application of ETSU-R-97 assessment methodology for wind turbine developments at the various stages of the assessment, and will be followed throughout the assessment.

⁹⁹ Institute of Acoustics (2013) A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise

10.3 Baseline Conditions

It is proposed that noise effects relating to the operation of the Revised Development be assessed against the consented limit of 35 dB, LA90,10min which should not be exceeded "at any dwelling which is lawfully existing or has planning permission at the date of this permission"

The Consented Development's EIA Report assessed the effects of noise against the ETSU-R-97 lower fixed limits of 35 dB LA90,10min and 43 LA90,10min for daytime and night time respectively. As such, no baseline survey was deemed necessary and given these limits will continue to apply no baseline survey is proposed for the Revised Development.

During the Consented Development's EIA Report, one Noise Sensitive Receptor (NSR) was identified, Shepherds Cottage, which lies approximately 1.85 km to the east of the nearest turbine. A search of the Council's Planning Portal indicates that no new residential developments are either in planning or consented at the time of writing and as such, the assessment of noise effects will be assessed to Shepherds Cottage as the nearest identified NSR.

Two cumulative developments were identified during the Consented Development's EIA Report: Cour Wind Farm and Eascairt Wind Farm. An updated search for cumulative developments, or extensions to those previously assessed, has been carried out on the Council's Planning Portal with no additional cumulative developments identified. As noise effects from cumulative developments remains unchanged from the Consented Development's EIA Report, no cumulative assessment is deemed necessary and as such is not proposed.

10.4 Key Sensitivities

The assessment is limited to the effects on human receptors at noise-sensitive locations, namely residential properties, schools, hospitals and places of worship. Each of these receptor types are considered to be of equal value.

10.4.1 Consultee Responses to the Consented Development's EIA Report

Table 10.1. Consultee comments on the Consented Development relating to noise.

Consultee	Comment	Response
Argyll and Bute Council (30 th November 2019)	Council's Environment Protection Officer (28th June 2018) - no objection subject to conditions relating to noise; private water supplies; and, it is requested that any condition requiring the submission of a construction or environmental management plan should include details of measures to ensure the occurrence of noise or vibration nuisance during the construction phase including operational hours.	The Revised Development will adhere to the noise related planning condition with the assessment of operational noise effects carried out using the methodology outlined in Section 10.5. The management of noise and vibration during construction will be included in the Construction and Environmental Management Plan.

10.5 Assessment Methodology

10.5.1 Methodology

Noise predictions will be made using the ISO 9613-2 noise model, taking account of the specific data and parameters recommended in the GPG, as summarised below:

- The turbine sound power levels will be stated and include an appropriate allowance for measurement uncertainty. If the data provided contains no allowance for measurement uncertainty, or uncertainties are not stated, an additional 2 dB will be included;
- Atmospheric absorption will be calculated based on conditions of 10°C and 70% relative humidity;
- The ground factor assumed will be $G=0.5$ (mixed ground) except in urban areas or where noise propagates across large bodies of water, where $G=0$ (hard ground) will be assumed;
- A receiver height of 4.0 m will be assumed;
- Barrier attenuation will be limited to a maximum of 2 dB where there is no line of sight from the receptor to a given turbine;
- An additional 3 dB will be added to noise immission levels at any properties located across a valley or with heavily concave ground between the receptor location and the wind turbine(s)¹⁰⁰; and
- The predicted noise levels ($L_{Aeq,t}$) will be converted to the required $L_{A90,10min}$ by subtracting 2 dB.

ISO 9613-2 provides a prediction of noise levels likely to occur under worst-case conditions; those favourable to the propagation of sound, i.e., down-wind or under a moderate, ground-based temperature inversion as often occurs at night (often referred to as stable atmospheric conditions). The specific measures recommended in the GPG have been shown to provide good correlation with levels of wind turbine noise measured at operational wind farms^{101,102}.

It is proposed that the effects of noise resulting from the operation of the alternative candidate turbine type will be assessed against the noise limit within the Extant Consent (i.e. 35 dB, $L_{A90,10min}$). Providing that the Revised Development is shown to be compliant with this limit, it can be concluded that the Revised Development would result in no greater impact that is already permitted, and is therefore acceptable.

10.6 Scope of Assessment

10.6.1 Scoped In Effects

An operational noise assessment using an appropriate candidate turbine, will be conducted in line with the ETSU-R-97 and the GPG.

10.6.2 Scoped Out Effects

10.6.2.1 *Low Frequency Noise and Infrasound*

A study¹⁰³, published in 2006 by acoustic consultants Hayes McKenzie on the behalf of the DTI, investigated low frequency noise from wind farms. This study concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines, but that complaints attributed to low frequency noise were in fact, most likely due to a phenomenon known as Amplitude Modulation (AM).

In February 2013, the Environmental Protection Authority of South Australia published the results of a study into infrasound levels near wind farms¹⁰⁴. This study measured infrasound

¹⁰⁰ Equation to determine concave ground as presented in Section 4.3.9 of the GPG.

¹⁰¹ Bullmore et al. (2009). Wind Farm Noise Predictions and Comparison with Measurements, Third International Meeting on Wind Turbine Noise, Aalborg, Denmark 17 – 19 June 2009.

¹⁰² Cooper & Evans (2013). Effects of different meteorological conditions on wind turbine noise.

¹⁰³ The measurement of low frequency noise at three UK wind farms, Hayes McKenzie, The Department for Trade and Industry, URN 06/1412, 2006

¹⁰⁴ Environment Protection authority (2013) Infrasound levels near wind farms and in other environments [online] Available at: http://www.epa.sa.gov.au/xstd_files/Noise/Report/infrasound.pdf

levels at urban locations, rural locations with wind turbines close by, and rural locations with no wind turbines in the vicinity. It found that infrasound levels near wind farms are comparable to levels away from wind farms in both urban and rural locations. Infrasound levels were also measured during organised shut downs of the wind farms; the results showed that there was no noticeable difference in infrasound levels whether the turbines were active or inactive.

Bowdler et al. (2009)¹⁰⁵ concludes that:

"...there is no robust evidence that low frequency noise (including 'infrasound') or ground-borne vibration from wind farms generally has adverse effects on wind farm neighbours".

10.6.2.2 Amplitude Modulation

In its simplest form, Amplitude Modulation (AM), by definition, is the variation in noise level of a given source. This variation (the modulation) occurs at a specific frequency in the case of wind turbines, which is defined by the rotational speed of the blades.

There is a distinction between 'normal' AM of wind turbine noise, characterised as blade swish and Enhanced AM (EAM) or Other AM (OAM), sometimes characterised onomatopoeically as 'thump'. It should be noted that ETSU-R-97 describes and makes allowance for normal AM or blade swish.

A study¹⁰⁶ was carried out in 2007 on behalf of the Department for Business, Enterprise and Regulatory Reform (BERR) by the University of Salford, which investigated the incidence of noise complaints associated with wind farms and whether these were associated with AM. This report defined AM as aerodynamic noise from wind turbines with a greater degree of fluctuation than normal at blade passing frequency. Its aims were to ascertain the prevalence of increased AM (OAM) on UK wind farm sites, to try to gain a better understanding of the likely causes, and to establish whether further research into AM is required.

The study concluded that OAM had occurred at only a small number (4 of 133) of wind farms in the UK, and only for between 7% and 15% of the time. It also stated that, the causes of OAM were not well understood and that prediction of the effect was not then currently possible.

This research has recently been supported by an in-depth study undertaken by Renewable UK¹⁰⁷, which has identified that many of the previously suggested causes of OAM have little or no association to the occurrence of OAM in practice. The generation of OAM is based upon the interaction of a number of factors, the combination and contributions of which are unique to each site. With the current state of knowledge, the research concludes that is not possible to predict whether any particular site is more or less likely to give rise to OAM, and the incidence of OAM occurring at any particular site remains low, as identified in the University of Salford study. The report includes a sample planning condition to address AM, however that has not yet been validated or endorsed by UK Government or the IOA.

In 2016, the IOA proposed a measurement technique¹⁰⁸ to quantify the level of AM present in any particular sample of windfarm noise. This technique is supported by the Department of Business, Energy & Industrial Strategy (BEIS, formerly The Department of Energy & Climate Change) who have published guidance¹⁰⁹, which follows on from the conclusions

¹⁰⁵ Bowdler et al. (2009). Prediction and Assessment of Wind Turbine Noise: Agreement about relevant factors for noise assessment from wind energy projects. Acoustic Bulletin, Vol 34 No2 March/April 2009, Institute of Acoustics

¹⁰⁶ Research into aerodynamic modulation of wind turbine noise'. Report by University of Salford, The Department for Business, Enterprise and Regulatory Reform, URN 07/1235, July 2007.

¹⁰⁷ Wind Turbine Amplitude Modulation: Research to improve understanding as to its Cause and effects, Renewable UK, 2013

¹⁰⁸ Institute of Acoustics, (2016) A Method for Rating Amplitude Modulation in Wind Turbine Noise

¹⁰⁹ BEIS, (2016), Review of the evidence on the response to amplitude modulation from wind turbines

of the IOA study in order to define an appropriate assessment method for AM, including a penalty scheme and an outline planning condition. Notwithstanding this, the suggested outline planning condition is as yet unvalidated, remains in a draft form and would require site-specific legal advice on its appropriateness to a specific development.

Section 7.2.1 of the GPG therefore remains current, stating: *"the evidence in relation to 'Excess' or 'Other' Amplitude Modulation (AM) is still developing. At the time of writing, current practice is not to assign a planning condition to deal with AM"*.

10.6.2.3 Ground Borne Vibration

Research undertaken by Snow¹¹⁰ in 1996 found that levels of ground-borne vibration 100 m from the nearest wind turbine were significantly below criteria for 'critical working areas' given by British Standard BS6472:1992 Evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz), and were lower than limits specified for residential premises by an even greater margin.

Ground-borne vibration from wind turbines can be detected using sophisticated instruments several kilometres from a wind farm site as reported by Keele University¹¹¹. This report clearly shows that, although detectable using highly sensitive instruments, the magnitude of the vibration is orders of magnitude below the human level of perception and does not pose any risk to human health.

10.6.2.4 Construction Noise

Condition 27 of the Extant Consent sets requirements for the control of noise during construction through controlled working hours, and Condition 10 requires submission of a detailed Construction Environmental Management Plan, which is to include measures to ensure construction noise and vibration is acceptably controlled. As such, it is considered that a detailed construction noise assessment will not be necessary, as it is expected that the extant planning conditions will remain.

10.7 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Are consultees content with the proposed methodology and scope of assessment?
- Do the consultees have details of any other wind energy developments in the locality which have arisen since the time of the Extant Consent, and which it considers may raise significant cumulative noise effects?
- Are consultees content to scope out Low Frequency Noise and Infrasound, Amplitude Modulation, Ground Borne Vibrations and Construction and Decommissioning noise?

¹¹⁰ ETSU (1997), Low Frequency Noise and Vibrations Measurement at a Modern Wind Farm, prepared by D J Snow

¹¹¹ Microseismic and infrasound monitoring of low frequency noise and vibrations from wind farms: recommendations on the siting of wind farms in the vicinity of Eskdalemuir, Scotland". Keele University, 2005

11 TRAFFIC AND TRANSPORT

11.1 Introduction

This section of the Scoping Report defines the proposed methodology and approach to be adopted for the traffic and transport assessment that will be included within the EIA Report for the Revised Development.

11.1.1 Comparison with the Consented Development

The Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development, however, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur these will be assessed.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

The traffic impact assessment will be revised to take account of the change in construction traffic required as a result of the higher turbine model and the possibility of a change to the baseline conditions i.e. traffic numbers on the local road network.

The Applicant remains committed to the traffic and transport planning conditions included in the Consented Development's consent which will remain applicable for any minor changes to the ancillary infrastructure associated with the Revised Development.

As larger turbine components are being considered, additional off site works may be required to allow the abnormal loads to be delivered to site.

11.2 Relevant Guidance and Legislation

There is no change to the relevant guidance or legislation outlined in Chapter 12 of the Consented Development's EIA Report.

11.3 Consultee Responses to the Consented Development's EIA Report

Consultation responses were received after submission of the EIA Report from Transport Scotland and Argyll and Bute Council. A summary of their responses with respect to Traffic and Transport is summarised in Table 11.1.

Table 11.1. Post Application Consultee Responses

Consultee	Comment	Response
Transport Scotland (letter dated 26 June 2020)	<p>Transport Scotland recommended the following consent condition requirements relating to Transport:</p> <ul style="list-style-type: none"> • Construction Traffic Management Plan and implementation; • Route Access Report including swept path analysis to demonstrate that exceptional loads can be transported safely; and • Temporary Road Signage and Traffic Control Measures and Implementation. 	The Applicant is committed to implementing each of the three recommended conditions of consent.
Argyll and Bute Council (letter dated 20 November 2019)	<p>Argyll and Bute Council recommended the following consent condition requirements relating to Transport:</p> <ul style="list-style-type: none"> • All vehicular traffic is taken from the A83 Tarbet – Campbeltown Trunk Road, and that no construction traffic shall use the B842 Clonaig – Southend Road. 	The Applicant is committed to implementing the recommended conditions of consent.

11.4 Baseline Conditions and Key Sensitives

Chapter 12 of the EIA Report for the Consented Development assessed that an increase in Heavy Goods Vehicles (HGVs) travelling on the A83 is predicted. Whilst the predicted traffic flow on the A83 was higher than the 'Guidelines for the Environmental Impact of Road Traffic'¹¹² ('The IEMA Guidelines') thresholds for sensitive receptors, when compared to the existing and projected baseline traffic flows, and to the increase in vehicle movements during construction, it was clear that all roads assessed were substantially below capacity and would continue to be following the increase in vehicle movements as a result of the Consented Development. This would not change as a result of the Revised Development.

11.5 Assessment Methodology

The EIA Report for the Consented Development concluded that no significant effects are anticipated on traffic and transport as a result of construction, operation and decommissioning of the Consented Development. The revised traffic numbers will be assessed and any changes presented within the EIA Report.

As per the existing planning conditions an Abnormal Load Route Assessment (ALRA) will be undertaken prior to turbine delivery to confirm that the proposed route can accommodate the increased length of turbine blades and that their transportation will not have any detrimental effect on the proposed haulage route, and will identify any additional off-site improvement works which are required in order to make the route remain viable.

11.6 Key Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

¹¹² Institute of Environmental Assessment (1993) *Guidelines for the Environmental Assessment of Road Traffic*. Available at: <https://www.thenbs.com/PublicationIndex/documents/details?Pub=IEA&DocID=257892> (Accessed 02/02/2022).

- Are the Consultees aware of any specific access restrictions or limitations on the proposed abnormal loads route?

12 FORESTRY

12.1 Introduction

This Section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the Revised Development on the forestry resource, to determine the requirements for inclusion / exclusion of the resource within the Revised Development's EIA Report.

12.1.1 Comparison with Extant Consent

The Consented Development is partly located within commercial forestry and the construction will require the felling of areas of the forest. In this case, considering technical and environmental constraints, a 2.0 ha (80 m radius) keyhole was adopted round each turbine location within woodland for construction, operation and environmental mitigation, with 10 m buffers or other infrastructure and a 30 m wayleave for access roads.

There would be advanced felling of 218 ha resulting from the Consented Development felling plan. Of this 32 ha of felling is required for infrastructure and construction of the Consented Development and the balance of the felling, 186 ha is required for habitat management purposes. The felling associated with habitat management will replace areas of forestry with poor diversity and replant areas certain areas with reduced density native broadleaves and Scots pine improving habitats for Black Grouse and Golden Eagle. The 186 ha of HMP felling is being carried out in 2022 and will therefore not form part of this EIA Report.

In respect of considerations relevant to forestry, the Revised Development represented at this stage by the Scoping Layout is identical to that of the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the turbines in the same positions as the turbines of the Consented Development; however, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

The Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development, however, changes to the turbine locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur these will be assessed.

Additionally, the ancillary infrastructure and access tracks may be subject to minor changes to accommodate larger turbines however the fundamental design will remain and any changes will be assessed as appropriate.

As the key proposed change from the Extant Consent is that the proposed turbines are larger in dimension with an increase from a blade tip height of 149.9 m to 180 m, it is likely that the felling design for the Revised Development will require larger keyhole areas in order to accommodate the larger rotor diameter associated with the Revised Development. Revised forestry figures will be provided in the EIA Report.

As detailed in the Consented Development's planning conditions, no forestry works, associated with the construction and operation of the Consented Development, shall commence until a Compensatory Planting Plan ("CPP") has been submitted to and approved by the Council (in consultation with Scottish Forestry as required). All planning conditions would remain applicable for the Revised Development.

12.2 Relevant Guidance and Legislation

The following legislation, guidance and information sources have been considered in carrying out this assessment:

- Forestry and Land Management (Scotland) Act 2018¹¹³;
- Scotland’s Forestry Strategy 2019 – 2029¹¹⁴;
- The Land Use Strategy for Scotland 2016 – 2021¹¹⁵;
- NPF3¹¹⁶;
- SPP¹¹⁷;
- Control of Woodland Removal Policy¹¹⁸; and
- Argyll and Bute Woodland and Forestry Strategy¹¹⁹.

12.3 Key Sensitivities and Baseline Conditions

12.3.1 Baseline Planting Year/Age Class Structure

There was no age class information available for the woodlands. Many woodlands established in the mid to late 1900s, were planted in large contiguous blocks, often over a limited number of years and with a limited range of species. Such woodlands develop poor structural diversity, especially on upland sites. Restructuring the age class and species of such forests is desirable and would yield both forest management and environmental benefits.

The current recommendations contained within the UKFS is that in forests characterised by a lack of diversity due to extensive areas of even-aged trees, stands adjoining felled areas should be retained until the restocking of the first coupe has reached a minimum height of 2 metres (m). For planning purposes this is likely to be between 5 and 15 years depending on establishment success and growth rates. It is recognised that in large even-aged plantations, especially in the uplands, restructuring age class structure to meet this target may take more than one rotation.

12.3.2 Species Composition

The current baseline species composition of the woodlands within the Forestry Study Area (FSA) as described in Section 13.3 of the Consented Development’s EIA Report is illustrated in Table 12.1 below. The main species are commercial conifers, principally Sitka spruce, which in pure or mixed stands, accounts for approximately 52.9% of the total FSA. Other conifer woodland and broadleaves form very small components of the woodlands. Open ground, including other land, accounts for the second largest component at 44.8%.

Table 12.1: Baseline Species Composition

Baseline Species Composition		
Species	Area (ha)	Area (%)
Mixed Broadleaves	20.71	1.6
Productive Conifers	691.96	52.9
Open Ground	393.76	30.1

¹¹³ The Scottish Government (2018). The Forestry and Land Management (Scotland) Act 2018, Edinburgh. Available at <http://www.legislation.gov.uk/asp/2018/8/contents/enacted> (Accessed 08/02/2022)

¹¹⁴ The Scottish Government (2019). Scotland’s Forestry Strategy 2019 -2029, Edinburgh.

¹¹⁵ The Scottish Government (2016). A Land Use Strategy for Scotland, Edinburgh.

¹¹⁶ The Scottish Government (2014). Scotland’s Third National Planning Framework (NPF3). Edinburgh.

¹¹⁷ The Scottish Government (2014). Scottish Planning Policy. Edinburgh.

¹¹⁸ Forestry Commission Scotland (2009). The Scottish Government’s Policy on Control of Woodland Removal. Edinburgh.

¹¹⁹ Argyll and Bute Council and Forestry Commission Scotland (2011). The Argyll and Bute Council Woodland and Forestry Strategy, Lochgilphead.

Other land	192.87	14.7
Water	7.65	0.7
Totals	1,306.93	100

The species composition reflects the practice and guidance which prevailed at the time the woodlands were established.

12.3.3 Baseline Felling and Restocking Plans

There are no baseline felling or restocking plans.

12.3.4 Key Sensitivities

Possible sensitivities associated with the Revised Development, which may be potentially significant include:

- The extent of the physical change and the degree of change this causes to the character of the Site and its surroundings. This will involve the age, species and area of forest to be felled and the extent by which the same areas can be replanted or off-site mitigation developed;
- The effects resulting from the construction and subsequent maintenance of the Revised Development. This will consider the long-term loss of forest as a result of the construction of the Revised Development, and also the short-term requirements for felling and replanting of other areas to facilitate the construction of the line. This includes the requirements for access and the need for mitigation felling to windfirm boundaries as a method to reduce the risk of wind damage; and
- The loss of forest in terms of the effect on the national resource following the creation of a forestry 'sterilised' area within the Site.

12.3.5 Consultee Responses to the Consented Development's EIA Report

Comments relating to the forestry assessment within the Consented Development's EIA Report were provided by Scottish Forestry and SEPA to the Scottish Government during the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 12.2.

Table 12.2. Consultee comments on the Consented Development relating to forestry.

Consultee	Comment	Response
Scottish Forestry (SF) (letter dated 2 nd September 2019)	Scottish Forestry was disappointed to not have communication with the developer as requested in their scoping response. They suggest a few conditions for the Consented Development regarding landscape, forestry replanting, and the Habitat Management Plan.	The Applicant will comply with all conditions included in the Consented Development's planning application, and these will also be taken into account for the Revised Development.
Scottish Forestry (letter dated 20 th January 2020)	SF object to the proposal on the basis of a lack of information regarding forest landscape information, and calculation impact of felling within the catchment on water quality and quantity.	A response was provided by the Applicant on 20 th February 2020 to provide additional information. As detailed as part of the Consented Development's planning conditions, a Construction Environmental Management Plan will be approved by the

		<p>Council prior to construction detailing an operational plan for harvesting, restocking and establishment of forestry to ensure no significant impact on water quality and quantity occurs. Additionally, no construction, other than Habitat Preparation Works, shall commence unless and until a Habitat Management Plan ("HMP") has been submitted to, and approved in writing by the Council in consultation with Scottish Forestry.</p> <p>These conditions will still apply for the Revised Development. The Applicant will comply with all conditions included in the Consented Development's planning application, and these will remain applicable for the Revised Development.</p>
SEPA (letter dated 1 st August 2019)	Suggests a condition is included in the consent for the Applicant to produce a Wind Farm Forest Plan which includes a site plan specifically detailing areas subjected to different felling and harvesting techniques.	The Applicant will comply with all conditions included with the Consented Development, and these will also be taken into account for the Revised Development.

12.4 Assessment Methodology

The key changes proposed as part of the Revised Development relate to an increase in tip height and capacity requiring an increase in the keyholed area around the turbines; however, the impacts relating to forestry identified in the Consented Development's EIA Report are expected to remain unchanged.

Additionally, as detailed in Section 12.1.1, as noted in the Consented Development's planning conditions, no forestry works, associated with the construction and operation of the Consented Development, shall commence until a Compensatory Planting Plan ("CPP") has been submitted to and approved by the Council (in consultation with Scottish Forestry as required). All planning conditions would remain applicable for the Revised Development.

Therefore, no further assessment is required to be carried out to inform any requirements for an update Forestry assessment.

12.5 Scope of Assessment

No further information, other than that provided in the Consented Development's EIA Report, is considered necessary to inform a decision on the new application as the turbine parameters assessed are valid for the anticipated candidate turbine. As such, the baseline surveys and assessment do not require to be revised. All conditions associated with the Consented Development will remain applicable for the Revised Development, including the implementation of a detailed Felling and Restocking Plan prior to construction and therefore, Further assessment of forestry has been scoped out of the assessment.

12.5.1 Scoped In Effects

There are no effects relevant to forestry that have been scoped in for further assessment in regards to the increase in the turbine tip height.

12.5.2 Scoped Out Effects

As the baseline surveys and assessment do not require supplementary information, further assessment of the forestry resource is unnecessary and so forestry has been scoped out of further assessment.

12.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the proposed methodology and scope of assessment?
- Are consultees content to scope out all direct and indirect effects to forestry as the location of site infrastructure has not changed?

13 SOCIO-ECONOMICS, RECREATION, AND LAND-USE

13.1 Introduction

This section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the Revised Development on the Socio-Economics, Tourism, Recreation, and Land Use resources to determine the requirements for inclusion / exclusion of these within the Revised Development's EIA Report.

13.1.1 Comparison with Extant Consent

As detailed in Section 1.1, The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

The exception to this will be if the baseline has significantly changed since the Consented Development's EIA Report. If this is the case, an updated assessment will be undertaken where appropriate.

However, in respect of considerations relevant to socio-economic, tourism, recreational and land use due to the proposed increase in tip height, the Revised Development will result in an increase in generating capacity of the when compared to the Consented Development. This could result in potential additional socio-economic benefits i.e. an increase in Community Benefit Fund in line with the Scottish Government's community benefit fund guidance as outlined in the Scottish Energy Strategy¹²⁰; as well as the potential for increased visibility of the Revised Development from tourism and recreation receptor locations, as detailed in Section 5: LVIA of this Scoping Report.

13.2 Relevant Guidance and Legislation

The EIA Regulations establish in broad terms what is to be considered when determining the effects of development proposals on socio-economics, recreation and land-use. There is no specific legislation or guidance available on methods that should be used to assess the socio-economic impacts of a proposed onshore wind farm development. The proposed method has however, been based on established best practice, including that used in the UK Government and industry reports in the sector including the following guidance and information sources.

The following legislation, guidance and information sources have been considered in carrying out this assessment:

- Scotland's Economic Strategy¹²¹;
- SPP;
- The Argyll and Bute Local Development Plan;
 - Policy LDP 5;
 - Policy DLP 6;
 - Policy LDP 11;
- Institute of Environmental Management and Assessment (IEMA) (2011) The State of Environmental Impact Assessment in the UK¹²²;
- NatureScot (2018) A Handbook on Environmental Impact Assessment; and

¹²⁰ Scottish Government (2017) The Future of Energy in Scotland: Scottish Energy Strategy [Online] Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/> (Accessed 04/02/2022)

¹²¹ Scottish Government (2010) A low Carbon Economic Strategy for Scotland [Online] Available at: <http://www.gov.scot/Publications/2010/11/15085756/0> (Accessed 04/02/2022)

¹²² IEMA (2011) The State of Environmental Impact Assessment Practice in the UK [Online] Available at: <https://www.iema.net/assets/uploads/Special%20Reports/iema20special20report20web.pdf> (Accessed 04/02/2022)

- Wind Farms and Tourism Trends in Scotland: BiGGAR Economics (2021)¹²³.

13.3 Key Sensitivities and Baseline Condition

13.3.1 Socio-Economics

The population of Argyll and Bute in 2017 was 86,810 according to mid-year evaluations and it is expected that this figure has largely remained unchanged¹²⁴. Argyll and Bute has the third sparsest population of the 32 Scottish local authorities, with an average population density of 0.13 persons per hectare.

The Site is located within the Administrative Area of Mid-Argyll, Kintyre and the Islands and the electoral ward of Kintyre and the Islands, which has a population of 6,400¹²⁵. The wider area of Mid-Argyll, Kintyre and the Islands has an estimated population of around 20,000¹²⁶.

Argyll and Bute has a lower employment compared to Scottish averages. The employment rate in 2018 was 77.4% compared to the national average of 75.5% (as of November 2018). The main employment sectors in Argyll and Bute are: public administration, education and health (31.1%); distribution, hotels and restaurants (19.5%); and banking, finance and insurance (14.3%)¹²⁷. According to the ONS Annual Population Survey¹²⁸, Argyll and Bute had a higher proportion of managers and senior officials than Scotland as a whole and that a relatively high proportion of employment was in skilled trades (14.4%).

The UK renewables industry plays a central role in the economy by producing, transforming and supplying energy in its various forms to all sectors. UK Government statistics released on the 31st January 2018 show turnover from renewable energy activity in Scotland was £5,458 million in 2016, with individual sectors showing employment increases of up to 300% between 2015 and 2016¹²⁹. Scottish onshore wind projects, which support 8,000 jobs, delivered almost half (45.8%) of the UK's turnover from onshore wind in 2016, the latest year for which figures are available. Scotland's turnover from onshore wind activities totalled £1.5 billion in 2016 and achieving 'world leader' status for renewables in 2017¹³⁰.

13.3.2 Tourism and Recreation

With regard to Argyll and Bute specifically, the tourism sector is an extremely important sector for the area, employing almost 25% of private sector jobs and 9% of the GVA compared to a 3% GVA average for Scotland. Similarly to Argyll and Bute as a whole, the area around the Site attracts recreation opportunities based around the natural environment such as hills, wildlife, beaches, lochs and rivers due to the area's relatively remote and coastal setting.

There are a number of public rights of way within the 5 km study area. The Kintyre Way runs for approximately 300 m along, and crosses, the access track associated with the

¹²³ BiGGAR Economics (2021) Wind Farm and Tourism Trends in Scotland [Online] Available at: <https://biggareconomics.co.uk/wp-content/uploads/2021/11/BiGGAR-Economics-Wind-Farms-and-Tourism-2021.pdf> (Accessed 04/02/2022)

¹²⁴ National Records of Scotland (2017) Mid-Year Population Estimates [Online] Available at: <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/mid-2017> (Accessed: 20/11/2018).

¹²⁵ Scottish Government Statistics (2017) Kintyre and the Islands [Online] Available at: <https://statistics.gov.scot/atlas/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fid%2Fstatistical-geography%2F513002517&inactive=false> (Accessed 27/02/2019)

¹²⁶ Argyll and Bute Council (2018) Population: Where We Live. [Online] <https://www.argyll-bute.gov.uk/info/population-where-we-live> (Accessed 27/02/2019)

¹²⁷ Argyll and Bute (2018) Economy [Online] Available at: <https://www.argyll-bute.gov.uk/info/economy> (Accessed 01/04/2019)

¹²⁸ Office for National Statistics (2017) Annual Population Survey [Online] Available at: <https://www.nomisweb.co.uk/articles/991.aspx> (Accessed 01/04/2019)

¹²⁹ Scottish Renewables (2018) Scots renewable energy industry turnover £5.5 billion, new UK Government stats show [Online] Available at: <http://www.scottishrenewables.com/news/scots-renewable-energy-industry-turnover/> (Accessed 08/11/2018)

¹³⁰ WWF (2017) Scotland a 'World Leader' for renewables in 2017 [Online] <https://www.wwf.org.uk/updates/scotland-world-leader-renewables-2017> (Accessed 08/11/2018)

Revised Development at a location approximately 4.5 km north of the nearest turbine. This is recognised as one of Scotland’s Great Trails, and takes an undulating route from Tarbert in the north to Machrihanish in the south.

There are no other Core Paths or recognised public rights of way within the Site. Core Path C088 – Campbeltown to Cloanaig runs along the B842 which is adjacent to the eastern boundary of the Site, approximately 1.9 km from turbine locations.

The nearest accommodation options are bed and breakfasts in Clachan to the northwest, and Crossaig to the northeast, as well as a self-catering accommodation at Balinakill near Clachan. A greater range of accommodation options including hotels are present in Tarbert to the north and Carradale and Campbeltown to the south.

13.3.3 Land Use

The Site predominately comprises of a mixture of commercial coniferous plantation at varying degrees of maturity and areas of rough upland moorland. The Site covers an area of 1,317 ha with an elevation ranging from 264 m AOD in the central portion of the Site, falling to 30 m AOD where the eastern boundary runs adjacent to the B842.

No public roads are located within the Site, although a number of existing forest roads, including the access track for the operational Cour Wind Farm are located within the Site. As noted above the eastern boundary runs adjacent to the B842, while the Site is accessed off the existing site entrance on the A83, 4 km north of Clachan.

There are no residential properties within the Site and none located with 1.5 km of the turbine locations.

As the land is under private ownership, it is considered that any effects directly affecting the landowner are subject to a commercial arrangement between the Applicant and the landowner, and therefore not subject to EIA.

13.3.4 Consultee Responses to the Consented Development’s EIA Report

Comments relating to the socio-economics, recreation and land use assessment within the Consented Development’s EIA Report were provided by the British Horse Society, West Kintyre Community Council, Argyll and Bute Council, and VisitScotland to the Scottish Government during the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 13.1.

Table 13.1. Consultee comments on the Consented Development relating to Socio-economics, recreation, and land use.

Consultee	Comment	Response
British Horse Society (email dated 15 th August 2019)	The British Horse Society had no objection to the Consented Development, and provided guidance to encourage equestrian use of the wind farm.	The Applicant continues to be open to the Revised Development being used for equestrian access when operational.
ScotWays (email dated 24 th July 2019)	No comment	N/A
West Kintyre Community Council (letter dated July 2019)	The importance of tourism to the economy cannot be overstated, and scenery and rural location of the area are the most significant factors for tourists to the area. There are concerns regarding the landscape and visual impact of	Noted. If the conclusions of the landscape and visual chapter suggest that the Revised Development in comparison to the Consented Development would result in a significant increase in the magnitude of change experienced by tourism

	the Consented Development, and the impact on accommodation availability for tourists.	and recreation receptors, an updated tourism and recreation assessment relating to these receptors will be undertaken.
Argyll and Bute Council (undated)	After construction there is little to no direct benefit to the local economy, and as a developer the Applicant does not follow the Scottish Government Best Practice for Renewable Community Benefits.	The Scottish Government has emphasised the importance of communities benefitting from renewable energy generation, including through community benefit funds and shared ownership as outlined the Scottish Energy Strategy ¹³¹ . As detailed in the Consented Development's EIA Report, the Consented Development will establish a community fund in line with Scottish Government guidance which currently promotes paying £5,000 per MW installed capacity per annum to a Community Benefit Fund in line with the Scottish Government's Best Practice for Renewable Community Benefits. The Applicant will ensure this commitment is updated in line with the increased capacity as a result of the Revised Development.
VisitScotland (dated 1 st August 2018)	Tourism is a major part of Scotland's economy, with scenery and the natural environment being important factors for visitors. Full consideration should be given to the Scottish Government's 2008 research on the impact of wind farms on tourism, and VisitScotland recommend that an independent Tourism Impact Assessment should be carried out.	Noted. If the conclusions of the landscape and visual chapter suggest that the Revised Development in comparison to the Consented Development would result in a significant increase in the magnitude of change experienced by tourism and recreation receptors, an updated tourism impact assessment relating to these receptors will be undertaken.

13.4 Assessment Methodology

As the only changes relate to increases in tip height and capacity, the assessment of impacts relating to the above receptors and potential effects has not changed. The same assessment methodology as that used in the Consented Development's EIA Report will be utilised, and the assessment conclusions will be informed by professional judgement.

¹³¹ Scottish Government (2017) The Future of Energy in Scotland: Scottish Energy Strategy [Online] Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/> (Accessed 22/02/2021)

13.5 Scope of Assessment

As discussed, a scoping report and full EIA has already been carried out for the Consented Development prior to the change in turbine design. As such, many of the potential effects on Socio-Economics, Tourism and Recreation, and Land Use have already been assessed.

The change in the turbine design means the only likely update to the assessment will be in regards to the increased capacity of the wind farm as a result of the larger turbines. This increased capacity will lead to an increase in the socio-economic benefit via the Community Benefit Fund, as the Applicant will contribute £5,000 per MW of installed capacity per annum. A full socio-economic assessment update for the Revised Development is not deemed proportionate and so, an update on the socio-economic benefits associated with the increase in capacity will be included in the project description of the Revised Development EIA Report.

In regards to tourism and recreation, the principal effect of the Revised Development will be in regards to effects as a result of the larger turbines. If the conclusions of the landscape and visual chapter suggest that the Revised Development compared to the Consented Development would result in a significant increase in the magnitude of change experienced by tourism and recreation receptors, an updated tourism and recreation assessment relating to these receptors will be undertaken.

As there will be no changes to land use compared to what was stated in the Consented Development's EIA Report, changes to land use can be scoped out of this assessment.

13.5.1 Scoped In Effects

The following effects have been scoped in:

- Impacts to tourism and recreation as a result of changes in visual effects will be assessed if the conclusions of the landscape and visual chapter suggest that the Revised Development compared to the Consented Development would result in a significant increase in the magnitude of change experienced by tourism and recreation receptors.

13.5.2 Scoped Out Effects

The following effects have been scoped out:

- Changes to land use;
- Potential socio-economic, tourism, recreational and land use effects on any minor changes to the ancillary infrastructure unless the baseline has significantly changed since the Consented Development's EIA Report; and
- The increase to socio-economic benefits as a result of larger turbines and higher capacity.

13.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the proposed methodology and scope of assessment?
- Are consultees content to scope out all direct effects on land use as the location of Site has not changed?

14 CLIMATE CHANGE

14.1 Introduction

This section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the consented High Constellation Wind Farm (the Revised Development) on the Climate Change and Carbon Balance resources, to determine the requirements for inclusion / exclusion of the resource within the Revised Development's EIA Report.

The Revised Development will be inherently designed to reduce adverse climate change effects by offsetting the production of carbon dioxide through the use of renewable energy sources generating electricity. Renewable energy is being promoted in Scotland as a means of reducing carbon emissions. Within the Revised Development's EIA Report, a Section will provide details on the expected carbon savings as a result of the operation of the Revised Development.

14.1.1 Comparison with Extant Consent

In respect of considerations relevant to Climate Change and Carbon Balance the Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. The Scoping Layout shows the ten turbines located in exactly the same positions as the ten turbines of the Consented Development, however, changes to the turbines locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

Additionally, the ancillary infrastructure and access tracks may be subject to minor alterations to accommodate larger turbines. If minor changes occur, the extent of significant environmental impacts is not anticipated to change as a result of these amendments.

The exception to this will be if the climate baseline has significantly changed since the Consented Development's EIA Report. If this is the case, an updated assessment will be undertaken where appropriate.

The key difference is that the proposed turbines are larger in dimension with an increase from a blade tip height of 149.9 m to 180 m. Due to the proposed increase in tip height, the Revised Development will result in an increase in generating capacity when compared to the Consented Development, therefore, a potential increase in carbon savings as a result of using more efficient turbines and displacing additional CO₂ during the lifetime of the Revised Development.

14.2 Relevant Guidance and Legislation

The following legislation, policy and guidance have been considered in carrying out this assessment:

- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019¹³² and the legally binding net zero target for 2045 and interim targets for 2020, 2030 and 2040;
- The Scottish Government's Climate Change Plan (CCP)¹³³; and
- The Institute of Environmental Management and Assessment (IEMA) guidance documents 'Environmental Impact Assessment Guide to Climate Change Resilience

¹³² Scottish Government (2019) Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 [Online] Available at: <http://www.legislation.gov.uk/asp/2019/15/enacted> (Accessed 08/02/2022)

¹³³ Scottish Government (2018) Climate Change Plan: third report on proposals and policies 2018-2032 (RPP3). <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018/> (Accessed 08/02/2022)

- and Adaption’ (2015)¹³⁴ and Environmental Impact Assessment Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance (2017)¹³⁵;
- Achieving Net Zero (2020)¹³⁶;
 - The Committee on Climate Change (CCC) Reducing UK emissions: 2020 Progress Report (2020)¹³⁷;
 - Energy White Paper: Powering our net zero future (2020)¹³⁸; and
 - Scottish Government: Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update (2020)¹³⁹.

14.3 Key Sensitivities and Baseline Conditions

The State of the UK Climate 2019¹⁴⁰ provides the latest report on observed climate data for UK. Key findings are as follows:

- The decade 2010-2019 was on average 0.3°C warmer than the 1981-2010 average and 0.9°C warmer than 1961-1990. The ten warmest years on record have occurred since 2002;
- The decade 2010–2019 has been on average 1% wetter than 1981–2010 and 5% wetter than 1961–1990 for the UK overall. Six of the ten wettest years for the UK in a series from 1862 have occurred since 1998;
- In the context of seasonal changes, for the most recent decade (2010-2019):
 - UK summers have been on average 11% wetter than 1981–2010 and 13% wetter than 1961–1990;
 - UK winters have been on average 4% wetter than 1981–2010 and 12% wetter than 1961–1990; and
- In the UK, there is no strong evidence for trends in storminess as determined by maximum gust speeds over the last five decades.

Climate Projections show that the trends over the 21st century in the UK are towards warmer and wetter winters and hotter, drier summers, with an increase in frequency and intensity of extremes.

The climate parameters considered most relevant to the assessments referenced within this section are wind speed, temperature and precipitation.

14.3.1 Consultee Responses to the Consented Development’s EIA Report

Comments relating to the climate change assessment within the Consented Development’s EIA Report were provided by Argyll and Bute Council to the Scottish Government during the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 14.1.

¹³⁴ IEMA (2015) IEMA Environmental Impact Assessment Guide to Climate Change Resilience and Adaptation [Online] Available at: [https://www.iema.net/assets/templates/documents/iema_guidance_documents_eia_climate_change_resilience_and_adaptation%20\(1\).pdf](https://www.iema.net/assets/templates/documents/iema_guidance_documents_eia_climate_change_resilience_and_adaptation%20(1).pdf) (Accessed 08/02/2022)

¹³⁵ IEMA (2017) IEMA Environmental Impact Assessment Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance’ [Online] Available at: <https://www.iema.net/policy/ghg-in-eia-2017> (Accessed 08/02/2022)

¹³⁶ National Audit Office (2020) Achieving Net Zero [Online] Available at: <https://www.nao.org.uk/wp-content/uploads/2020/12/Achieving-net-zero.pdf> (Accessed 08/02/2022)

¹³⁷ The CCC (2020) Reducing UK emissions: 2020 Progress Report to Parliament [Online] Available at: <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/#key-findings> (Accessed 08/02/2022)

¹³⁸ HM Government (2020) The Energy White Paper - Powering our Net Zero Future [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf (Accessed 08/02/2022)

¹³⁹ Scottish Government (2020) Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update [Online] Available at: <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/pages/0/> (Accessed 08/02/2022)

¹⁴⁰ International Journal of Climatology, volume 39, Issue S1 (July 2020) ed. Radan Huth. Wiley

Table 14.1. Consultee comments on the Consented Development relating to climate change.

Consultee	Comment	Response
Argyll and Bute Council	The Scottish Government has declared a climate emergency and it is essential to increase our production of energy from renewable sources. As Kintyre in particular is very windy, it is inevitable that there will be wind farm developments, but the contributions to climate change would not be fatally compromised if this particular development were not to proceed.	The comments are noted, and the Applicant believes the need for renewable development outweighs other potential impacts of the Consented Development. Increasing the tip height for the Revised Development will allow potential further carbon savings without needing to build more turbines, which benefits climate change and mitigates other impacts.

14.3.2 Wind Speed

The global projections over the UK show an increase in near surface (10 metre height) wind speeds over the UK in the second half of the 21st century, in the winter season when higher wind speeds are generally experienced. The increase is modest when compared to inter-annual variability. This would be accompanied by an increase in frequency of winter storms over the UK¹⁴¹. There are no significant changes forecast in the wind speeds over the first part of the century.

These projections are in line with earlier findings by Pryor and Barthelmie (2010)¹⁴² who concluded that in the near-term (i.e. until the 2050's) there will be no detectable significant change in the wind resource of northern Europe.

14.3.3 Temperature

For period 2041-2060 projected changes to UK annual mean temperature (compared to 1981-2000) is projected at +1.5°C (50% probability) for RCP8.5 (unmitigated scenario). Results for the 10th to 90th percentile range are between +0.7°C to +2.5°C¹⁴³. Key observations are that:

- Both winters and summers will be warmer, with more warming in the summer; and
- In summer there is a pronounced north/south divide with greater increases in maximum summer temperatures over the southern UK compared to Northern Scotland.

14.3.4 Precipitation

Rainfall patterns over the UK are not uniform and vary on regional and seasonal scales, which will continue in the future. Future changes are uncertain but point to wetter winters and drier summers in general. Northern Scotland is associated with greatest increased precipitation in winters¹⁴⁴.

Over the UK, the changes to precipitation projected for 2041-2060 (compared to 1981-2000) for RCP8.5 (unmitigated scenario) are:

- Winter precipitation – increase of 7%. Results for the 10th to 90th percentile range are between -5% and +21%;

¹⁴¹ UKCP18 (2018) Factsheet: Wind.

¹⁴² Pryor, S.C. and Barthelmie, R. J. (2010) Climate Change Impact on Wind Energy: A Review. Renewable and Sustainable Energy Review, 14(1): 430-437

¹⁴³ Lowe *et al* (2018) UKCP18 Science Overview Report (Table 2.2, Page 16)

¹⁴⁴ Lowe *et al* (2018) UKCP18 Science Overview Report

- Summer precipitation – decrease of 15%. Results for the 10th to 90th percentile range are between -31% and +0%.

14.3.5 Key Sensitivities

Possible sensitivities associated with the Revised Development, which may be potentially significant include:

- Effects of the Revised Development on climate change;
- Effects of climate change on the Revised Development; and
- Effects of climate change on assessments made in other topics of the Revised Development's EIA Report.

14.4 Assessment Methodology

As the only changes relate to increases in tip height and capacity, the assessment of impacts relating to the above receptors and potential effects remains unchanged from those used in the Consented Development's EIA Report. Therefore, the following activities will be carried out to inform any requirements for an update to the Carbon Balance assessment:

- Updated carbon calculator input with changes to turbine generating capacity, and any revised forestry information, to assess effects on carbon payback.

14.5 Scope of Assessment

As discussed, a scoping report and full EIA has already been carried out for the Consented Development prior to the change in turbine design. As such, many of the potential effects on the Climate Change and Carbon Balance receptors have already been assessed. The change in the turbine design is unlikely to alter the outcome of the prior assessment on the vulnerability of the Revised Development to climate change and extreme climate events and therefore this will be scoped out of this assessment. As the tip height and maximum capacity of the Revised Development has increased, an updated carbon balance assessment will need to be carried out to determine the level of carbon emissions the Revised Development will offset.

14.5.1 Scoped In Effects

The following effects have been scoped in:

- An updated carbon balance calculator would be undertaken using the most recent version of the spreadsheet available on the Scottish Government website.

14.5.2 Scoped Out Effects

The following effects have been scoped out:

- An assessment on the vulnerability of the Revised Development to climate change and extreme climate events as this will not have changed from the Consented Development's EIA Report.

14.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the proposed methodology and scope of assessment?
- Are consultees content to scope out the effects of climate change on the Revised Development as only tip height is changing?

15 OTHER ISSUES

15.1 Shadow Flicker

15.1.1 Introduction

This Section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the Revised Development on the receptors for Shadow Flicker effects.

15.1.1.1 *Comparison with Extant Consent*

In respect of considerations relevant to Shadow Flicker, the Revised Development represented at this stage by the Scoping Layout differs to that of the Consented Development in that the tip height of the turbines has increased from 149.9 m to 180 m. The Scoping Layout shows the turbines in the same positions as the turbines of the Consented Development; however, changes to the turbines locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

The EIA Report for the Consented Development concluded that as there were no residential properties within 10 rotor diameters of the proposed turbines, there was no prospect of significant shadow flicker effects and no further assessment required.

The increase in blade size proposed as a result of the Revised Development¹⁴⁵ could result in shadow flicker effects on nearby receptors.

15.1.2 Relevant Guidance and Legislation

The following guidance, legislation and information sources have been considered in carrying out this assessment:

- Online Planning Guidance for Renewables and Low Carbon Energy¹⁴⁵;
- Argyll and Bute Local Development Plan (the A&BLDP); and
- Review of Light and Shadow Effects from Wind Turbines in Scotland¹⁴⁶.

15.1.3 Key Sensitivities and Baseline Conditions

The closest residential property is located approximately 1,850 m to the east of the nearest turbine, along the B842 at Shepherds Cottage (NGR 182103, 648522). As stated in Section 2, a rotor diameter of 150 m is being considered for the Revised Development. 10 rotor diameters from the turbines proposed as part of the Revised Development would be 1,500 m.

There are therefore no residential properties within 10 rotor diameters of the proposed turbines, and as such there is no prospect of significant shadow flicker effects and no further assessment is required.

15.1.3.1 *Consultee Responses to the Consented Development's EIA Report*

Comments relating to the shadow flicker assessment within the Consented Development's EIA Report were provided by Argyll and Bute Council to the Scottish Government during

¹⁴⁵ Scottish Government (2014) Onshore Wind Turbines: planning advice [Online] Available at: <https://beta.gov.scot/publications/onshore-wind-turbines-planning-advice/> (Accessed 10/02/2022)

¹⁴⁶ Review of Light and Shadow Flicker Effects from Wind Turbines in Scotland, LUC, March 2017 [Online] Available at: <https://www.climatechange.org.uk/research/projects/review-of-light-and-shadow-effects-from-wind-turbines-in-scotland/> (Accessed 10/02/2022)

the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 15.1.

Table 15.1. Consultee comments on the Consented Development relating to shadow flicker.

Consultee	Comment	Response
Argyll and Bute Council	The Environmental Protection Officer has not raised any concerns in regard to shadow flicker.	The comment is noted, and as there are no shadow flicker receptors within 10 rotor diameters of the Revised Development, this view is unlikely to change.

15.1.4 Scope of Assessment

No properties have been identified within the ten rotor diameter study area at the current Consented Development turbine locations, therefore there will be no changes to the Consented Development's EIA Report conclusions on Shadow Flicker.

If changes to the Consented Development's turbine locations occur, a review of the changes will be completed and an updated assessment undertaken if any properties fall within 10 rotor diameters of the updated turbine locations.

15.1.5 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Are consultees content to scope out shadow flicker effects if no changes to the Consented Development's turbine locations occur given there are no properties within ten rotor diameters of any turbines?

15.2 Telecommunication and Utilities

15.2.1 Introduction

This section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the Revised Development on the telecommunications and utilities resource.

15.2.1.1 Comparison with Extant Consent

In respect of considerations relevant to Telecommunications, the Revised Development represented at this stage by the Scoping Layout differs to that of the Consented Development in that the tip height of the turbines has increased from 149.9 m to 180 m. The Scoping Layout shows the turbines in the same positions as the turbines of the Consented Development; however, changes to the turbines locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

The Consented Development's EIA Report concluded no effects on telecommunication or utilities; however, due to the proposed increase in blade lengths and potential movement of turbine locations as a result of the Revised Development, there is the potential to for the Revised Development to interfere with telecommunication and utility links.

15.2.2 Relevant Guidance and Legislation

There are a number of documents which provide guidance on telecommunications and utilities considerations for wind energy developments. The guidance considered in this assessment are:

- British Wind Energy Association (BWEA), (1994) Best Practice Guidelines of Wind Energy Developments;
- Ofcom (2009) Tall Structures and Their Impact on Broadcast and Other Wireless Service;
- Ofcom (2003) Guidelines for Improving Digital Television and Radio Reception; and
- The Scottish Government (2014) Onshore Wind Turbines.

The potential effects as a result of the Revised Development have been assessed with reference to the above documents.

15.2.3 Key Sensitivities and Baseline Conditions

15.2.3.1 Telecommunications

Consultation with the relevant organisations was initiated during the initial stages of the Consented Development's EIA to identify any potential microwave or telecommunication links that could be affected by the Consented Development. Ofcom monitors the fixed microwave links throughout the UK, whereas JRC manages the radio spectrum used by the UK Fuel and Power Industry. Atkins undertakes a similar role for the water industry. Arqiva operates the Freeview terrestrial transmission network including BBC and ITV.

No links were identified within the Site.

Digital television signals are rarely affected by the operation of wind turbines; however, in some cases interference can be caused by blocking or reflections.

The area surrounding the Site receives television signals that were made exclusively digital, after the digital switchover was completed, and hence no analogue TV signals are broadcast in the area¹⁴⁷.

15.2.3.2 Utilities

Other infrastructure, such as above or below ground utilities, could be affected during construction; however, implementation of best practice would ensure that these are not adversely affected.

A line search utility search was undertaken during the Consented Development's EIA process, which identified no utilities within the core area of the Site operated by any of its members.

The Crossaig substation is located within the eastern section of the Site. This consists of a large substation built as part of transmission network upgrades, which includes a subsea cable from Crossaig to Hunterston in North Ayrshire. There are a number of overhead lines, including a transmission line, which run to this substation, as well as a buried cable associated with the Cour Wind Farm. The design of the Consented and Revised Development has avoided locating infrastructure in areas which would affect and known underground cables or other utilities as well as overhead electricity lines.

¹⁴⁷ UK Government: The Digital Switchover Explained [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/630712/alex-pumfrey-the-uks-switch-to-digital-tv.pdf (Accessed: 07/02/2022)

15.2.3.3 *Consultee Responses to the Consented Development's EIA Report*

Comments relating to the telecommunications and utilities assessment within the Consented Development's EIA Report were provided by BT and JRC to the Scottish Government during the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 15.2.

Table 15.2. Consultee comments on the Consented Development relating to telecommunications and utilities.

Consultee	Comment	Response
BT (email dated 14 th June 2019)	The Consented Development should not cause interference to BT's current and presently planned radio network.	As the turbine locations are not changing with the Revised Development, there are not predicted to be any additional impacts on the BT network, but updated consultation will be undertaken to ensure this.
JRC (email dated 18 th June 2019)	JRC does not foresee any potential problems based on known interference scenarios and the data provided.	As the turbine locations are not changing with the Revised Development, there are not predicted to be any additional impacts on JRC links, but updated consultation will be undertaken to confirm this.

15.2.4 Assessment Methodology

It is possible that new telecommunications links have been implemented since the Consented Development was determined, or that the proposed dimensions of the turbines may impact on previously existing links. Updated consultation with telecommunications and utilities operators will be undertaken as part of the EIA for the Revised Development.

Should infrastructure be identified that may be affected, further consultation would be undertaken to agree the scope of the assessment.

15.2.5 Scope of Assessment

15.2.5.1 *Scoped In Effects*

Due to the increase in blade length and the time that has elapsed since the Consented Development was approved, an updated telecommunications and utility asset search will be undertaken to ensure no new assets are affected by the Revised Development.

Should assets potentially be affected, an updated assessment methodology would be agreed with the Council and consultees.

15.2.5.2 *Scoped Out Effects*

Assuming no new infrastructure is found, all effects on telecommunications and utilities will be scoped out.

15.2.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Following detailed consultation with telecommunication and utilities operators, should no telecommunications links be found in the immediate vicinity of the Revised Development, are consultees content that telecommunications can be scoped out?

15.3 Aviation

15.3.1 Introduction

This section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the Revised Development on the Aviation resource, to determine the requirements for inclusion / exclusion of the resource within the Revised Development's EIA.

15.3.1.1 Comparison with Extant Consent

In respect of considerations relevant to aviation, the Revised Development represented at this stage by the Scoping Layout is very similar to the Consented Development which is covered by the Extant Consent. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

The key difference is that the proposed turbines are larger in dimension with an increase from a blade tip height of 149.9 m to 180 m which means that aviation lighting will be required. This has the potential to result in increased effects on any baseline aviation receptors.

15.3.2 Relevant Guidance and Legislation

There are a number of aviation publications relevant to the interaction of wind turbines and aviation containing guidance and legislation, which cover the complete spectrum of aviation activity in the UK as shown below:

- Civil Aviation Publication (CAP) 764 Civil Aviation Authority (CAA) Policy and Guidance on Wind Turbines Version 6, Feb 2016 (CAA, 2016)¹⁴⁸;
- CAP 168 Licensing of Aerodromes, Version 11 March 2019 (CAA 2019)¹⁴⁹;
- CAP 670 ATS Safety Requirements Version 3 June 2019 (CAA 2019)¹⁵⁰;
- CAP 774 UK Flight Information Services, Ed 4 December 2021 (CAA 2021)¹⁵¹;
- CAP 738 Safeguarding of Aerodromes Version 3 Dec 2006 (CAA 2020)¹⁵²;
- CAP 793 Safe Operating Practices at Unlicensed Aerodromes Ed 1 July 2010 (CAA 2010)¹⁵³;
- CAP 493 Manual of Air Traffic Services Part 1 Version 9 April 2021 (CAA 2021)¹⁵⁴;
- CAP 393 Regulations made under powers in the Civil Aviation Act 1982 and the Air Navigation Order 2016 Version 6 February 2021 (CAA 2021)¹⁵⁵;
- CAP 660 Parachuting Ed 5 March 2020 (CAA 2020)¹⁵⁶;

¹⁴⁸ Civil Aviation Publication (2016) CAP 764: CAA Policy and Guidelines on Wind Turbines [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP764%20Issue6%20FINAL%20Feb.pdf> (Accessed 13/01/2022)

¹⁴⁹ Civil Aviation Publication (2019) CAP 168: Licensing of Aerodromes [online] Available at: https://publicapps.caa.co.uk/docs/33/CAP%20168%20Issue11_Licensing%20of%20Aerodromes%2013032019.pdf (Accessed 13/01/2022)

¹⁵⁰ Civil Aviation Publication (2019) CAP 670: Air Traffic Services Safety Requirements [online] Available at: [https://publicapps.caa.co.uk/docs/33/CAP670%20Issue3%20Am%201%202019\(p\).pdf](https://publicapps.caa.co.uk/docs/33/CAP670%20Issue3%20Am%201%202019(p).pdf) (Accessed 13/01/2022)

¹⁵¹ Civil Aviation Publication (2021) CAP 774: UK Flight Information Services [online] Available at: https://publicapps.caa.co.uk/docs/33/CAP774_UK%20FIS_Edition%204.pdf (Accessed 13/01/2022)

¹⁵² Civil Aviation Publication (2020) CAP 738: Safeguarding of Aerodromes [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP738%20Issue%203.pdf> (Accessed 13/01/2022)

¹⁵³ Civil Aviation Publication (2010) CAP 793: Safe Operating Practices at Unlicensed Aerodromes [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP793.pdf> (Accessed 13/01/2022)

¹⁵⁴ Civil Aviation Publication (2021) CAP 493: Manual of Air Traffic Services – Part 1 [online] Available at: [https://publicapps.caa.co.uk/docs/33/CAP493%20Edition%209%20Corrigendum%20%20\(May%202021\).pdf](https://publicapps.caa.co.uk/docs/33/CAP493%20Edition%209%20Corrigendum%20%20(May%202021).pdf) (Accessed 13/01/2022)

¹⁵⁵ Civil Aviation Publication (2021) CAP 393: Regulations made under powers in the Civil Aviation Act 1982 and the Air Navigation Order 2016 [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP393%20Regulations%20made%20under%20powers%20in%20the%20Civil%20Aviation%20Act%201982%20and%20the%20Air%20Navigation%20Order%202016.pdf> (Accessed 13/01/2022)

¹⁵⁶ Civil Aviation Publication (2020) CAP 660: Parachuting [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP%20660%20Parachuting%20March%202020.pdf> (Accessed 13/01/2022)

- Military Aviation Authority Regulatory Article 2330 (Low Flying) (MOD MAA 2019)¹⁵⁷;
- UK Aeronautical Information Publications (AIP) (NATS 2021)¹⁵⁸;
- CAA Policy Statement: Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m Above Ground Level¹⁵⁹;
- CAA Policy Statement: Lighting of En-Route Obstacles and Onshore Wind Turbines 01 April 2010 (CAA 2010)¹⁶⁰; and
- Wind Energy and Aviation Interests Interim Guidelines¹⁶¹.

15.3.3 Key Sensitivities and Baseline Conditions

15.3.3.1 Aviation Lighting

The UK statutory requirements for the lighting of en-route obstacles (i.e. those away from the vicinity of a licensed aerodrome) are set out in Article 222 of the UK Air Navigation Order (ANO) 2016. In June 2017, the CAA issued a policy statement clarifying the requirements for lighting onshore wind turbines over 150 m in height.

Under Article 222 (5), the CAA may direct that an en-route obstacle must be fitted with and display such additional lights in such positions and at such times as it may specify. The policy statement describes a scenario with a red light fitted as close as possible to the top of the fixed structure i.e. the nacelle with additional lights to provide 360° coverage at half of the nacelle height. It should be noted that CAP 393¹⁶² also states that in an offshore environment for turbines of a similar height in a windfarm group only the peripheral turbines need to be marked.

Given the proposed increased turbine tip height to above 150 m (from 149.9 m to up to 180 m) as part of the Revised Development, it is expected that an aviation assessment will be required to identify and assess the potential increased effects on any baseline aviation receptors.

The Applicant intends to consult directly with the CAA to agree a Lighting Mitigation Plan and this will be assessed and presented in the EIA Report. The aim of the plan will be to minimise impacts on visual receptors whilst meeting required aviation safety standards.

15.3.3.2 MoD

There are no military radars that are predicted to be affected by the Revised Development. The Revised Development is within a 'low priority' military low flying area and will present an obstruction within this area. Military low flying areas are of regional scale. The level of acceptable development within a zone is variable and complicated to determine, however

¹⁵⁷ Military Aviation Authority (2021) RA 2330 - Low Flying [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/996200/RA2330_Issue_5.pdf (Accessed 13/01/2022)

¹⁵⁸ NATS (2021) Aeronautical Information Publication [online] Available at: <https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/> (Accessed 13/01/2022)

¹⁵⁹ Civil Aviation Publication (2017) Policy Statement: Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m Above Ground Level [Online] Available at: https://publicapps.caa.co.uk/docs/33/DAP01062017_LightingWindTurbinesOnshoreAbove150mAGL.pdf (Accessed 18/01/2022)

¹⁶⁰ Civil Aviation Publication (2010) Policy Statement: Lighting of En-Route Obstacles and Onshore Wind Turbines [online] Available at: https://publicapps.caa.co.uk/docs/33/DAP_LightingEnRouteObstaclesAndWindTurbines.pdf (Accessed 13/01/2022)

¹⁶¹ Wind Energy, Defence and Civil Aviation Interests Working Group (2002) Wind Energy and Aviation Interests Interim Guidelines [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48101/file17828.pdf (Accessed 10/02/2022)

¹⁶² Civil Aviation Authority. (2016). The Air Navigation Order 2016 and Regulations – CAP 363. Available at: <https://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=detail&id=7523> (Accessed 10/02/2022)

the overall sensitivity is considered 'low' as the MoD state the low priority zone is "*less likely to raise concerns*".

15.3.3.3 Civil Aviation

The nearest licensed aerodrome is Campbeltown Airport, 29 km southwest of the Site; the nearest unlicensed airfield is located on the Isle of Gigha, 14.5 km southwest of the Site, with a single grass runway. Given the distance from the Site and unlicensed nature, the airfield at Gigha is not considered further.

Wind developments can affect airports predominantly by presenting a collision risk to aircraft approach/departing the airport or by interfering with radar/other navigation aids. The potential for collision risk is safeguarded via Obstacle Limitation Surfaces (OLS) – defined in accordance with the CAA Civil Aviation Publication (CAP) 168 'Licensing of Aerodromes'. An OLS is considered a receptor of 'Medium' sensitivity.

None of the OLS at Campbeltown Airport extend over the Revised Development.

Additionally, the EIA Report for the Consented Development concluded that no significant impacts would occur on any MoD and civil aviation infrastructure. Campbeltown Airport however, did request 32 cd visible lighting at hub heights for turbines that mark the outer extremities of the Site due to the proximity of the Consented Development to the flight procedures / flight path for the airport. For turbines of the proposed dimensions CAA guidance does not require visible lighting, unless aviation stakeholders provide robust justification.

As detailed in Section 15.3.3.1, given the increase in tip height and requirement for lighting onshore wind turbines over 150 m in height, it is anticipated that an updated aviation assessment will be required to identify and assess the potential increased effects on any baseline aviation receptors.

15.3.3.4 Key Sensitivities

Possible sensitivities associated with the Revised Development, which may be potentially significant include:

- The Military low flying area;
- Potential additional safeguarding considerations as a result of the tip height increase; and
- Additional aviation lighting as a result of the Revised Development proposing a tip height increase of over 150 m.

15.3.3.5 Consultee Responses to the Consented Development's EIA Report

Comments relating to the aviation assessment within the Consented Development's EIA Report were provided by the Ministry of Defence, CAA, Highlands and Islands Airports Limited (HIAL), NATS, and Glasgow Prestwick Airport to the Scottish Government during the determination of the Consented Development in August 2019. These comments, and how they will be addressed, are summarised in Table 15.3.

Table 15.3. Consultee comments on the Consented Development relating to aviation.

Consultee	Comment	Response
Ministry of Defense (letter dated 17 th June 2019)	The MoD had no objection to the proposal, but requests the Consented Development should be fitted with MoD accredited aviation safety lighting and be provided with information (construction start and end	Information was provided to the MoD as requested, and aviation safety lighting was included in the Consented Development. Any changes to the aviation lighting due to the change in turbine tip height will

	dates, maximum height of construction equipment, and latitude and longitude of every turbine) before construction begins.	be considered and agreed with the MoD for the Revised Development.
Civil Aviation Authority and Highlands and Islands Airports Limited (email dated 18 th June 2019, follow up email dated 14 th August 2019)	The Consented Development lies in close proximity to the approach procedures for Campbeltown Airport, and therefore an aviation warning light will be required on the turbines that mark the outer edges of the Consented Development. A follow up email then confirmed no requirement for aviation lighting.	Any new lighting required following the tip height increase for the Revised Development will be considered and agreed with the CAA.
NATS (email dated 20 th June 2019)	The Consented Development does not conflict with NATS' safeguarding criteria and has no safeguarding objection to the Consented Development.	The Revised Development has turbines in the same locations as the Consented Development, and therefore no further effects on the safeguarding criteria are anticipated, but NATS will be consulted with the tip height increase to confirm this is correct.
Glasgow Prestwick Airport	The windfarm would be entirely shielded from the operational primary radar system, so there is no objection to the proposed application.	The Revised Development has turbines in the same locations as the Consented Development, and therefore the same response is anticipated, but Glasgow Prestwick Airport will be consulted with the tip height increase to confirm this is correct.

15.3.4 Assessment Methodology

The general approach to wind farm development is to avoid adverse effects on aviation infrastructure, where possible, and to find appropriate technical mitigation solutions where this cannot be achieved.

Consultation with relevant aviation providers is a routine part of wind farm development and the consultation process that is required to be undertaken is also laid down in Civil Aviation Publication (CAP) 764 (for civil aviation issues) and the Wind Energy and Aviation Interests Interim Guidelines (for both civil and military consultation). In line with the Consented Development EIA Report, the following relevant consultees have been identified:

- Ministry of Defence (Defence Infrastructure Organisation);
- Highlands and Islands Airports Limited (HIAL);
- National Air Traffic Services (NATS); and
- Civil Aviation Authority (CAA).

An updated search for private airfields will also be conducted in parallel with the consultation process, and any identified airfields will also be consulted on the proposed turbine development. It is therefore expected that an updated aviation assessment will be required to identify and assess the likely aviation issues associated with the Revised Development.

15.3.5 Scope of Assessment

An updated aviation assessment will support the information provided in the Consented Development's EIA, to inform a decision on the Section 36c application due to the increase in turbine tip height in the Revised Development.

15.3.5.1 *Scoped In Effects*

An updated aviation assessment will be completed to determine whether the increase in tip height in the Revised Development will have an effect on aviation receptors. The scope of any aviation impact assessment, if required, will be based on the outcome of the updated consultation discussions with the relevant aviation consultees. Recommended consultees and relevant scoped in effects for aviation and radar include:

- HIAL – consultation with BAA Aerodrome Safeguarding in relation to airport safeguarding;
- MOD – consultation to confirm that the turbines will not impact the military low flying zone; and
- NATS – consultation to confirm that the turbines will be sufficiently screened or separated from the Communications, Navigation and Surveillance (CNS) Network.

15.3.5.2 *Scoped Out Effects*

Should the updated aviation assessment find no change in the effect of the Revised Development on aviation receptors than that detailed in the Consented Development's EIA Report, aviation will be scoped out of the Revised Development's EIA.

15.3.6 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Are any consultees aware of any other aviation consultees that should be approached regarding the Revised Development?
- In the event that all aviation consultees confirm no infrastructure would be affected by the Revised Development, can aviation be scoped out of the EIA?

15.4 Health and Safety

15.4.1 Introduction

This section of the Scoping Report establishes the baseline and considers the potential impacts of the tip height increase for the Revised Development on the Health and Safety resource, to determine the requirements for inclusion / exclusion of the resource within the EIA.

15.4.1.1 *Comparison with Extant Consent*

In respect of considerations relevant to health and safety, the Revised Development represented at this stage by the Scoping Layout differs to that of the Consented Development in that the tip height of the turbines has increased from 149.9 m to 180 m. The Scoping Layout shows the turbines in the same positions as the turbines of the Consented Development; changes to the turbines locations may occur following completion of the scoping exercise and pre-application consultation. Should changes to the turbine locations occur following the scoping exercise, all changes will be assessed, as appropriate.

Additionally, the ancillary infrastructure and access tracks may be subject to minor alterations to accommodate larger turbines. If minor changes occur, the extent of

significant environmental impacts is not anticipated to change as a result of these amendments.

The Consented Development's EIA Report concluded no effects on health and safety measures and the Revised Development

is unlikely to present any changes to the health and safety measures considered on site.

15.4.2 Key Sensitivities and Baseline Conditions

15.4.2.1 Baseline Conditions

The Site is not located within an area known for natural disasters such as floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, or tsunamis, and it is unlikely that climate change trends will affect the Revised Development. The potential for increased high wind speed conditions associated with climate change could have an effect, although brake mechanisms in the turbines allow them to shut down in extreme conditions.

Other disasters (natural or manmade) that could affect the Revised Development include forest fires and floods. Wildfires within forests form a small proportion of "outdoor fires" in Scotland¹⁶³ and are uncommon¹⁶⁴, so the risk of a forest fire affecting the Revised Development is low. Flooding is the most probable natural disaster that could affect the Revised Development, but the Revised Development has been designed to minimise the impact of flooding and emergency response plans appropriate for the individual phases of the Revised Development would be in place and implemented to deal with any occurrences.

The central areas of Kintyre Peninsula are known to have been used for naval artillery practice during World War 2, and in the 1980s a number of Army Explosive Ordnance Disposal (EOD) clearance tasks were undertaken in the vicinity of the Site, during which a number of live unexploded ordnance (UXO) were recovered. As such there is a risk of encountering UXO within the Site, with the potential to cause major accidents.

No other natural or man-made disasters are considered to have the realistic potential to occur, and no other major accidents are considered likely to occur, and these will therefore be scoped out of the Revised Development's EIA Report.

15.4.2.2 Key Sensitivities

Possible sensitivities associated with the Revised Development, which may be potentially significant include:

- Finding UXO with the potential to cause major accidents.

15.4.2.3 Consultee Responses to the Consented Development's EIA Report

No comments relating to the health and safety assessment within the Consented Development's EIA Report were provided to the Scottish Government during the determination of the Consented Development in August 2019.

15.4.3 Assessment Methodology

As the only changes relate to increases in tip height and capacity, the assessment of impacts relating to health and safety has not changed and those impacts provided in the Consented Development's EIA Report are expected to remain unchanged. Therefore, no further assessment is required to be carried out to inform any requirements for an update Health and Safety assessment.

¹⁶³ The Scottish Government (2014). Fire and Rescue Statistics, Scotland. [Online] Available at: <http://www.gov.scot/Resource/0046/00466202.pdf> (Accessed 07/02/2022).

¹⁶⁴ Davies, G. and Legg, C. (2016). Regional variation in fire weather controls the reported occurrence of Scottish wildfires. *PeerJ*, 4, p.e2649.

15.4.4 Scope of Assessment

No further information, other than that provided in the Consented Development's EIA Report, is considered necessary to inform a decision on the Section 36c application as the turbine parameters assessed are valid for the anticipated candidate turbine. As such, the baseline surveys and assessment do not require supplementary information. Further assessment of health and safety has been scoped out of the assessment.

15.4.4.1 *Scoped In Effects*

There are no effects relevant to health and safety that have been scoped in for further assessment in regards to the increase in the turbine tip height.

15.4.4.2 *Scoped Out Effects*

As the baseline surveys and assessment do not require supplementary information, further assessment of health and safety is unnecessary and so health and safety has been scoped out of further assessment.

15.4.5 Questions for Consultees

The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do consultees agree with the suggested approach regarding Health and Safety and to scope out further assessment?

APPENDIX A: SCOPING FIGURE LIST AND FIGURES

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- Figure 9.1** Core Study Area
- Figure 9.2** Heritage Designations within 5 km

APPENDIX B: LIST OF SUGGESTED CONSULTEES LIST

The organisations shown below will be consulted with the relevant information as part of the scoping process, although not all consultees will receive a complete copy of the Scoping Report.

Consultees to receive a copy of the Scoping Report

Statutory Consultees

- Argyll and Bute Council
- SEPA
- NatureScot
- Historic Environment Scotland

Non Statutory Consultees

- Argyll District Salmon Fisheries Board
- Argyll Fisheries Trust
- British Horse Society Scotland
- BT
- Civil Aviation Authority - Airspace
- Crown Estate Scotland
- Defence Infrastructure Organisation
- Fisheries Management Scotland
- Glasgow Prestwick Airport
- Highlands and Islands Airports Limited
- Ironside Farrar
- Joint Radio Company
- John Muir Trust
- Marine Scotland
- Maritime and Coastguard Agency;
- Mountaineering Scotland
- NATS Safeguarding
- OFCOM
- RSPB Scotland
- Scottish Forestry
- Scottish Rights of Way and Access Society (ScotWays)
- Scottish Water
- Scottish Wild Land Group (SWLG)
- Scottish Wildlife Trust
- The Met Office
- Transport Scotland
- West of Scotland Archaeology Service
- Visit Scotland
- Clachan Village Hall (Kintyre) SCIO

Community Councils

- Tarbert and Skipness Community Council
- West Kintyre Community Council
- East Kintyre Community Council

APPENDIX C: CONSENTED DEVELOPMENT CULTURAL HERITAGE DESK BASED ASSESSMENT



ARCUS

**HIGH CONSTELLATION WIND FARM
ARCHAEOLOGICAL DESK-BASED ASSESSMENT**

CULTURAL HERITAGE REPORT NUMBER: 101

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DATA ENTRY FORM

PROJECT INFORMATION	
Project title	High Constellation Wind Farm
Description	Wind farm development and ancillary infrastructure
Report	Desk Based Assessment and Walkover Survey
Contractor name	Arcus Consultancy Services Ltd.
Client	Blue Energy Ltd.
SITE LOCATION INFORMATION	
Council	Argyll and Bute
Area	1,300 ha
Grid References	Centred on NGR 180000, 650000
PROJECT BIBLIOGRAPHY	
Type of publication	Unpublished document/manuscript
Title	High Constellation Wind Farm Archaeological Desk-Based Assessment
Author	Eva Heimpel
Date	January 2019

SUMMARY

An archaeological desk-based assessment has been undertaken by Arcus Consultancy Services Ltd ('Arcus') on behalf of Blue Energy Ltd. for land located on the Kintyre Peninsula approximately 10 kilometres (km) north of Carradale and 18 km south of Tarbert in Argyll and Bute. The purpose of the archaeological desk-based assessment is to establish the known or potential archaeological resource baseline in order to assess the effects of the proposed High Constellation Wind Farm (herein referred to as 'the Development') for which a planning application is to be submitted in 2019.

For the purposes of this desk-based assessment, the archaeological core study area includes the site boundary at Scoping ('the Site') and covers 1,300 hectares (ha), centred on National Grid Reference (NGR) 180000, 650000. A 5 km study area, which includes the archaeological core study area and land within a 5 km radius of the archaeological core study area, was used to aid the assessment of potential unknown archaeology.

The data collection and walkover survey identified a total of 251 features within the 5 km archaeological study area, seven of which fall within the archaeological core study area. These relate primarily to post-medieval settlement along the coast and pastoral land use in the upland areas.

The archaeological baseline and the presence of commercial forestry within the Development indicates a low potential for further unknown subsurface archaeological remains. There are seven post-medieval remains within the archaeological core study area that indicate transhumance subsistence patterns of seasonal occupation, though many of these have likely been affected by forestry operations. As such, if present, subsurface archaeological remains will likely be in areas outwith forestry and would be associated with post-medieval pastoral land use.

In conclusion it is likely that any work undertaken on this site would have very low potential to have a direct impact upon potentially significant, previously undiscovered archaeological remains.

There is also the potential for indirect impacts to heritage assets within the wider area. These effects will be assessed and reported in full within the EIA Report.

1 INTRODUCTION

An archaeological desk-based assessment has been undertaken by Arcus Consultancy Services Limited ('Arcus') on behalf of Blue Energy Ltd. for land located on the Kintyre Peninsula approximately 10 kilometres (km) north of Carradale and 18 km south of Tarbert in Argyll and Bute. The purpose of this archaeological desk-based assessment is to establish the known or potential archaeological resource baseline in order to assess the effects of the proposed High Constellation Wind Farm (herein referred to as 'the Development') for which an application is to be submitted in 2019.

1.1 The Development

The Development will consist of up to 19 turbines, as identified during Scoping, with a maximum height to blade tip of 149.9 metres (m) and a total generating capacity of over 50 MW. Ancillary infrastructure will also be required as part of the Development and is likely to include a substation, transformers, battery storage infrastructure, new and upgraded access tracks and site entrance, temporary construction compound, temporary crane hardstandings, temporary borrow pits and a permanent meteorological mast. The ancillary infrastructure proposed may change as the final parameters of the Development are identified throughout the iterative EIA process.

1.2 Study Areas

To assess the potential for on-site archaeology two study areas were defined. The archaeological core study area includes the site boundary at Scoping ('the Site') and covers approximately 1,300 hectares (ha), centred on National Grid Reference (NGR) 180000, 650000, with the extents and location shown on Figure 1. This archaeological core study area consists of commercial coniferous plantation at varying degrees of maturity, including substantial areas of clear felling with some smaller areas of rough upland grazing, as shown in Plate 1.

A 5 km study area, which includes the archaeological core study area and land within a 5 km radius of the archaeological core study area (Figure 1), was used to aid the assessment of potential unknown archaeology.

2 LEGISLATION, POLICY AND GUIDANCE

The assessment has been undertaken taking into account relevant heritage legislation and guidance as outlined below.

2.1.1 Legislation

The assessment of impacts to the historic environment falls under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Other relevant legislation covers the role of Historic Environment Scotland (HES) and national designations:

- The Historic Environment Scotland Act 2014¹;
- The Ancient Monuments and Archaeological Areas Act 1979; and
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

2.1.2 Policy

National and local planning policy provides further directive on how development should be considered and implemented. This includes:

¹ Scottish Government (2014) The Historic Environment Scotland Act. Available at http://www.legislation.gov.uk/asp/2014/19/pdfs/asp_20140019_en.pdf. [Accessed 7/11/18]

- Scottish Planning Policy (2014): Valuing the Historic Environment, Paragraphs 135-151;
- Historic Environment Scotland Policy Statement June 2016 (HESPS)²; and
- Argyll and Bute Local Development Plan 2014, Policies for the Historic Environment (HE1-HE6)³.

2.1.3 Guidance

Further guidance on the consideration of heritage assets includes:

- Planning Advice Note (PAN) PAN2/2011⁴;
- Chartered Institute for Archaeologists (CIfA) Standards and Guidance⁵; and
- Historic Environment Scotland's Managing Change in the Historic Environment Series, specifically 'Managing Change in the Historic Environment: Setting' (2016)⁶.

3 AIMS, METHODOLOGY AND SOURCES

3.1 Aims

The aim of this desk-based assessment is to:

- Establish the baseline information regarding archaeology in the archaeological study areas;
- To establish the archaeological potential and significance of the Development; and
- To assess the potential for the Development to harm archaeological resources, either directly or indirectly, within the archaeological study areas.

3.2 Methodology

The following methodology follows those guidelines as outlined in the Chartered Institute for Archaeologists' Standard and Guidance Paper for historic environment desk-based assessment⁷.

The desk-based assessment comprises of a written report including a description of the baseline heritage resource and archaeological potential of the study area, a description of the area's historic character, the archaeological and historical baseline's significance, the effect of the Development upon the outlined archaeological and historical resource, and potential mitigation strategies. The following section outlines the methodology used to fulfil the aims of the assessment stated in Section 3.1 above.

To inform this desk-based assessment, an archival search was undertaken in order to identify records of known archaeological features which have the potential to be affected by the Development. This archive search also collected data falling within the 5 km study

² Historic Environment Scotland, 2016, *Scottish Environment Scotland Policy Statement June 2016* [Online] Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=f413711b-bb7b-4a8d-a3e8-a619008ca8b5> [Accessed 7/11/2018]

³ Argyll and Bute Council (2015) Local Development Plan. Available at <https://www.argyll-bute.gov.uk/ldp> [Accessed 7/11/2018]

⁴ The Scottish Government (2011) Planning Advice Note 2/2011. Available at <http://www.gov.scot/Resource/Doc/355385/0120020.pdf> [Accessed 7/11/2018]

⁵ Chartered Institute for Archaeologists (2017) *Standard and Guidance for Historic Environment Desk-Based Assessment*, Published December 2014, Updated January 2017 [Online] Available at: http://www.archaeologists.net/sites/default/files/CIFAS%26GDBA_3.pdf [Accessed 7/11/2018]

⁶ Historic Environment Scotland, 2016, *Managing Change in the Historic Environment: Setting*. [Online] Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549> [Accessed 7/11/2018]

⁷ Chartered Institute for Archaeologists (2017) *Standard and Guidance for Historic Environment Desk-Based Assessment*, Published December 2014, Updated January 2017 [Online] Available at: http://www.archaeologists.net/sites/default/files/CIFAS%26GDBA_3.pdf [Accessed 7/11/2018]

area to inform the assessment of the physical and ground-based archaeological potential of the site.

The following sources were consulted in accordance with the best practice guidelines laid down by the Institute for Archaeologists (CIfA).

- Historic Environment Datasets including;
 - Canmore Archaeological Records;
 - Database of World Heritage Sites;
 - Database of Scheduled Monuments;
 - Database of Listed Buildings;
 - Database of Inventoried Garden and Designed Landscapes; and
 - Database of Inventoried Battlefields.
- The National Collection of Aerial Photography (NCAP);
- Cartographic evidence;
- Argyll and Bute Historic Environment Record (HER) as held by West of Scotland Archaeology Service (WoSAS); and
- The Statistical Accounts for Scotland.

These resources have been collated and examined alongside the results of any fieldwork.

To accompany this consultation, a site walkover was conducted on 20th November 2018 to verify the written records, to assess the character of the site, and to note any archaeological features not previously identified. Any previously unknown sites were recorded by use of digital photography and an appropriate scale.

The results of this work have informed the archaeological baseline and archaeological potential of the archaeological study areas. This baseline has then been cross-referenced with the Development to assess the potential for harm to archaeological resources situated within the Development footprint.

4 RESULTS

The data collection exercise has identified a total of 263 heritage features within the 5 km study area including ten Scheduled Monuments, 12 Listed Buildings, 239 HER features, and one site identified during the cartographic analysis. Of these, seven sites fall within the archaeological core study area.

One additional scheduled monument has been included within this assessment as requested by Historic Environment Scotland.

The results of the desk-based assessment are summarised below. Site number references correlate to the Heritage Gazetteer in Section 9.

4.1 Archaeological Core Study Area Description

The archaeological core study area is located on the Kintyre Peninsula approximately 10 kilometres (km) north of Carradale and 18 km south of Tarbert in Argyll and Bute. It covers an area of covers approximately 1,300 hectares (ha), centred on National Grid Reference (NGR) 180000, 650000, with the extents and location shown on Figure 1.

The archaeological core study area predominantly comprises of a mixture of commercial coniferous plantation at varying degrees of maturity and areas of rough upland moorland. The operational Cour Wind Farm consisting of ten turbines lies immediately to the south, with the existing access track lying within the archaeological core study area.

There are a number of watercourses and waterbodies within the archaeological core study area. The majority drain into eastern flowing watercourses which in turn discharge into the Kilbrannan Sound on the east coast of the Kintyre Peninsula, while a number of

watercourses in the western section of the Site drain in Loch Garasdale, which in turn discharges into the Sound of Gigha on the west coast of the Kintyre Peninsula. There are a number of small lochs and lochans within the site including Loch a' Chaorainn and Loch Laoighscan.

The topography of the archaeological core study area and immediate vicinity is relatively complex with the elevation ranging from 264 m AOD on the summit of Cnoc an t-Samhlaidh in the central portion of the archaeological core study area and falling to around 30 m AOD where the eastern boundary runs adjacent to the B842. The Development will be located on the higher elevated section of the site with elevations typically above 200 m AOD.

No public roads are located within the Site, although a number of existing forest roads, including the access track for the operational Cour Wind Farm, are located within the Site.

The Development is underlain by Beinn Bheula Schist Formation – Gritty Psammite and Pelite. Whilst much of the archaeological core study area does not have superficial deposits recorded, where these are identified by the BGS GeoIndex⁸, they consist of Devensian Till (Diamicton).

4.2 Designated Assets

4.2.1 Designated Assets in 5 km Study Area

A search of the National Monument Record Scotland (NMRS) returned the following results:

- Ten Scheduled Monuments;
- One Category A Listed Building;
- Five Category B Listed Buildings; and
- Six Category C Listed Buildings.

These are shown in Figure 2 and are discussed in Section 6. Full details of these can be found in the Heritage Gazetteer in Section 9.

4.2.2 Designated Assets outwith 5 km Study Area

One additional scheduled monument, Dun Skeig (SM2491) has been included in this assessment at the request of Historic Environment Scotland

These are shown in Figure 2 and are discussed in Section 6. Full details of these can be found in the Heritage Gazetteer in Section 9.

4.3 Non-Designated Assets

The Historic Environment Record (HER) and Canmore datasets returned 239 records of archaeological features within the 5 km archaeological study area (Figure 3), seven of which fall within the archaeological core study area as shown in Table 1 (Figure 4).

Table 1: Heritage Features within the Archaeological Core Study Area

Site ID	HER or Other Reference	Canmore ID	Name	Type	Period
50	WoSAS pin: 3905	76296	Crossaig Glen	Bloomery	Presumed Post-Medieval
52	WoSAS pin: 12925 Canmore ID: 76295	39315	Gleann Laoigh	Shieling-huts	Presumed Post-Medieval

⁸ British Geological Society, *Geology of Britain Viewer*. Available at <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html> [Accessed 7/11/2018]

Site ID	HER or Other Reference	Canmore ID	Name	Type	Period
53	WoSAS pin: 12926 Canmore ID: 76296	76295	Gleann Laoigh	Shieling-huts	Presumed Post-Medieval
122	WoSAS pin: 44951	154372	Crossaig Glen	Farmstead	Presumed Post-Medieval
254	WoSAS pin: 68164	n/a	Spearsaig	Sheepfold	Presumed Post-Medieval
257	WoSAS pin: 68167	n/a	South Crossaig	Milestone	Presumed Post-Medieval
				S	

These are detailed in the Heritage Gazetteer in Section 9 with those within the archaeological core study area highlighted in grey. These are shown in Figure 2.

4.4 Cartographic Analysis

Historic mapping of the area can be accessed through the National Library of Scotland Mapping service and other readily available sources. All maps containing specific reference to the archaeological core study area were consulted as listed below:

- Bleau Atlas of Scotland, 1662-5⁹ depicts the Kintyre Peninsula showing 'Curr' (Cour), Spersack (Spearsaig), and Krosack (Crossaig), and what appears to be Crossaig Burn. Other than the higher elevations along the interior of the peninsula, the map shows no further details relative to the Site;
- Ordnance Survey, Six-inch 1st edition, 1870^{10,11} shows Spearsaig Farm (Site ID 255) and sheepfold (Site ID 254) in the east and the ruins of Garbhachaidh along Crossaig Burn to the north;
- Ordnance Survey, Six-inch 2nd edition 1900^{12,13,14,15} shows no change to the archaeological core study area since the 1st edition OS map, see Figure 5;
- Ordnance Survey, Six-inch later editions (1924)^{16,17,18} shows little change to the archaeological core study area though there is a sheepfold shown near Loch a'Chaoruinn (HM-1) as shown on Figure 6;
- A Partial OS Map from 1978¹⁹ shows the northeast and southwest corners of the archaeological core study area as being forested with the shielings in the southwest corner labelled; and

⁹ Bleau Atlas of Scotland (1662-65) Canyra Chersonesus.

¹⁰ Ordnance Survey, Six-inch 1st edition (1870) Argyllshire, Sheet CCXXIV (includes: Kilcalmonell; Saddell And Skipness).

¹¹ Ordnance Survey, Six-inch 1st edition (1870) Argyllshire, Sheet CCXXXVI (includes: Kilcalmonell; Killean And Kilchenzie; Saddell And Skipness).

¹² Ordnance Survey, Six-inch 2nd edition and later additions (1900) Argyll and Bute Sheet CCXXIV.SW (includes: Kilcalmonell).

¹³ Ordnance Survey, Six-inch 2nd edition and later additions (1900) Argyll and Bute Sheet CCXXXVI.NW (includes: Kilcalmonell; Killean and Kilchenzie; Saddell and Skipness).

¹⁴ Ordnance Survey, Six-inch 2nd edition and later additions (1900) Argyll and Bute Sheet CCXXXVI.NE (includes: Saddell and Skipness).

¹⁵ Ordnance Survey, Six-inch 2nd edition and later additions (1900) Argyll and Bute Sheet CCXXIV.SE (includes: Saddell and Skipness).

¹⁶ Ordnance Survey, later additions (1924) Argyll and Bute Sheet CCXXXVI (includes: Kilcalmonell; Killean and Kilchenzie; Saddell and Skipness).

¹⁷ Ordnance Survey, later additions (1924) Argyll and Bute Sheet CCXXIV (includes: Kilcalmonell; Saddell and Skipness).

¹⁹ Ordnance Survey, Plan (1978-1980)

- OS Plan (1980-1992)²⁰ shows little change from 1978 and generally appears to be as it is in its current forested state.

A review of cartographic sources identified one additional feature, a sheepfold (HM-1) within the archaeological core study area. This is detailed in Heritage Gazetteer in Section 9 and shown in Figures 3 and 4.

4.5 Aerial Photography

Aerial photography of the area was accessed through the National Collection of Aerial Photography. Photographs for the area around the archaeological core study area were consulted, as listed below:

- Sortie: FSL/7343/25; Frame 0512; Dated 11 October 1974; Location: Crossaig Glen, Saddell and Skipness, Argyll. This photograph shows the eastern section of the Site and the existence of commercial forestry. No archaeological sites are visible due to dense forestry;
- Sortie: FSL/7343/45; Frame 0652; Dated 09 June 1975; Location: Cnoc Dubh, Saddell and Skipness, Argyll. This photograph shows the eastern section of the Site and the existence of commercial forestry. No archaeological sites are visible due to dense forestry; and
- Sortie: ASS/51388; Frame 0142; Dated 10 June 1988; Location: Cruch Gharbhachaidh, Saddell and Skipness, Argyll. This photograph shows the whole of the Development site. Commercial forestry is present in the east of the site but not in the west. No archaeological features are visible in this image.

Analysis of the aerial photographic archive and satellite imagery did not reveal any further features.

4.6 Walkover Survey

A walkover survey was undertaken on 20th November 2018. The weather was cloudy with intermittent rain; visibility was good to fair. The sites of any known archaeological features in the vicinity of turbine infrastructure were visited, if accessible, in order to confirm records. A general walkover of the area around the Development infrastructure was conducted, limited to accessible areas outwith the commercial forestry. No additional archaeological features were noted.

4.7 Statistical Accounts

The Statistical Accounts for the archaeological core study area is found in the County of Argyll, Parish of Killean and Kilchnzie for the south and west and the Parish of Saddell and Skipness for the east and north. Whilst there is no specific mention of the archaeological core study area other than a reference to Crossaig River, the parish records describes the western and southern higher elevations as 'naked, bleak and sterile, covered with stunted heath, generally interspersed with detached spots of coarse grass, sheep fescue sprits, rushes, and gall, a species of alpine myrtle'.²¹ The northern and eastern elevations area described as 'undulating groups of heath-crowned elevations...shaded with patches of straggling coppice wood...a beautiful and imposing landscape'.²²

²⁰ Ordnance Survey, Plan (1980-1982)

²¹ Statistical Accounts (1845) Killean and Kilchenzie, County of Argyle, NSA, Vol. II, page 377. Available at [http://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol7-Parish record for Killean and Kilchenzie in the county of Argyle in volume 7 of account 2/](http://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol7-Parish%20record%20for%20Killean%20and%20Kilchenzie%20in%20the%20county%20of%20Argyle%20in%20volume%207%20of%20account%20/) [Accessed 12/11/18]

²² Statistical Accounts (1845) Killean and Kilchenzie, County of Argyle, NSA, Vol. II, page 377. Available at [http://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol7-Parish record for Killean and Kilchenzie in the county of Argyle in volume 7 of account 2/](http://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol7-Parish%20record%20for%20Killean%20and%20Kilchenzie%20in%20the%20county%20of%20Argyle%20in%20volume%207%20of%20account%20/) [Accessed 12/11/18]

In relation to potential archaeology within this area, the parish records 'a few obelisks, of rude unpolished stone, and evidently sepulchral monuments, are scattered through the parish...Barrows or tumuli are sometimes to be found not far from the shore'.²³

4.8 National Archives of Scotland

A search of the national archives for the closest villages to the Development was undertaken. A search of Cour, to the southeast, and Saddell, to the south, revealed no records. A search of Crossaig, to the northeast of the Development, revealed the following documents:

- 1499-1910 Inveraray Sheriff Court;
- 1658-1818 Commissioners of Supply for Argyll;
- 1687 Documents relating to the Valuation Roll of 1688; and
- 1687 summaries of Argyll rentals.

4.9 Previous Archaeological Investigations

There are two previous archaeological excavations which occurred within the 5 km study area:

- In 2014 and 2015, a watching brief was undertaken by CFA Archaeology for the construction of a service road to Crossaig substation, within the northern section of the Development site. No archaeological features were identified.
- In 2015, CFA Archaeology conducted a filed survey as part of the Cour Wind Farm application, adjacent to the Development site, to accurately record existing archaeological features at two locations. These are included in the Historic Environment Record. No additional archaeological features were identified during the survey.

4.10 Existing Heritage or Archaeological Management Plans

There is no existing heritage or archaeological management plan currently in place for the archaeological study area.

5 BASELINE INTERPRETATION

The following section gives a brief description of the wider study area's archaeological and historical sites within the context of the area's background history, presented by period. The features referred to are detailed in the Heritage Gazetteer in Section 9 and shown in Figures 2, 3 and 4. The Site Numbers refers to the number given in the Gazetteer within Section 9.

5.1 The Prehistoric Period

The Kintyre peninsula has a rich prehistoric history with Neolithic burial cairns found through the peninsula as well as Bronze Age standing stones and Iron Age forts and duns²⁴. Kildonan Dun, to the south of Saddell, dates from as early as 200 BC²⁵, with more intensive occupation during the 1st century in the form of fortified farmsteads²⁶.

Within the 5 km study area there are 32 heritage records of prehistoric or likely prehistoric origin. This includes cist cairns (Sites 3, 37, 40, and 41), a crannog (Site 28), cup and ring

²³ Statistical Accounts (1845) Saddell and Skipness, County of Argyll, NSA, Vol. VII, page 436. Available at

[http://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol7-Parish record for Saddell and Skipness in the county of Argyll in volume 7 of account 2/](http://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol7-Parish%20record%20for%20Saddell%20and%20Skipness%20in%20the%20county%20of%20Argyle%20in%20volume%207%20of%20account%202/). [Accessed 12/11/18]

²⁴ Anon (n.d.) Available at <https://www.kintyre.org/history.shtml> [Accessed on 29/11/2018]

²⁵ Ibid.

²⁶ Ross D (n.d) Available at <https://www.britainexpress.com/scotland/Strathclyde/ancient/kildonan-dun.htm> [Accessed on 29/11/2018]

marked rocks (Sites 62, 31-34, 46, 153-156, 226, and 228), duns (Sites 4, 5, 6, 7, 8, 11, 35, 47, 78, and 222), standing stones (Sites 1, 2, 30, 45, 89, 93, and 104) and stone circles (Sites 148, and 152). Full details of these sites can be found in the Heritage Gazetteer in section 9.

These prehistoric archaeological features are largely concentrated at lower elevations along the coastline to the east and west of the Development. The archaeological core study area contains no prehistoric features, with the nearest prehistoric monument, An Dunan (Site 4), lying 1.6 km west of the Development. The exposed upland nature of the Site indicates limited potential for unknown prehistoric archaeological remains as these would be expected to be concentrated at lower elevations along the coast. The archaeological potential for prehistoric remains within the Development is very low.

5.2 Early Medieval Period

From the 6th to 9th centuries, the Kintyre peninsula formed part of the Kingdom of Dalriada²⁷. This kingdom was formed by the Gaelic-speaking Irish tribe, called Scotti, who started crossing the North Channel from Antrim to Kintyre. By the 6th century, they had spread throughout what is now called Argyll²⁸ with important forts throughout the area including at Tarbert, Dunaverty (at Southend), and Dunadd²⁹. In 843 AD, Kenneth MacAlpin of Dalriada became the ruler of a joint kingdom of Picts and Scots³⁰.

Within the 5 km study area, there is evidence of early medieval activity, including a burial ground (Site 36), church crosses (Site 8), and an early medieval dyke (Site 216). All three of these early medieval archaeological features are located at lower elevations along the east or west coast. Full details of these sites can be found in the Heritage Gazetteer in Section 9.

The early medieval features within the study areas are located in areas of low elevation along the coastline to the west of the Development. There are no known archaeological features of early medieval origin within the archaeological core study area, with the nearest early medieval features lying approximately 4.3 km to the northwest (Site 8). The Development is located above 200 m and this exposed upland nature indicates limited potential for unknown early medieval archaeological remains as these would be expected to be concentrated at lower elevations along the coast. The archaeological potential for early medieval remains within the Development is very low.

5.3 Medieval Period

During the medieval period the Kintyre peninsula was ceded to Magnus II of Morway under the 1098 Treaty of Tarbert³¹. The Celtic warrior Somerled drove Manus from Kintyre and his decedents controlled the peninsula until the end of 15th century³². Somerled is credited as founding the Cistercian Abbey of Saddell in 1160 which contains many fine examples of carved medieval grave slabs are still in existence.

Within the 5 km study area, there is a church of medieval origin (Site 13) and burial grounds of possible medieval origin (Sites 27 and 38). These are located at low elevations along the coast. Sites 13 and 27 lie within the village of Clachan and site 38 lies between Crossaig and Cour, to the east of the B842.

²⁷ Ross D (n.d) Available at <https://www.britainexpress.com/scotland/Strathclyde/ancient/kildonan-dun.htm> [Accessed on 29/11/2018]

²⁸ Anon (n.d.) Available at <https://www.kintyre.org/history.shtml> [Accessed on 29/11/2018]

²⁹ Ibid.

³⁰ Ibid.

³¹ Anon (n.d.) Available at <http://www.lindasgarden.co.uk/historyofkintyre.htm> [Accessed on 30/11/2018]

³² Ibid.

There are no known archaeological features of early medieval origin within the archaeological core study area, with the nearest medieval feature, a medieval burial ground, lying 80 m to the east (Site 38). The Development is located above 200 m and this exposed upland nature indicates limited potential for unknown medieval archaeological remains as these would be expected to be concentrated at lower elevations along the coast. The archaeological potential for medieval remains within the Development is very low.

5.4 Post-Medieval Period

During the post medieval period, the Kintyre Peninsula was used for farming with upland areas utilised seasonally³³. Many of the towns situated on the peninsula have origins in this period. Compleetown has evidence indicating the origin of the town lies in the 1600's³⁴, as does Saddell³⁵, with Saddell castle built between 1508 and 1512³⁶. Additional village communities formed throughout this period, concentrated on the east and west coastline as shown through the cartographic record. This includes Crossaig, Skipness, Clachan and Whitehouse.

Within the 5 km study area, there are a considerable number of post-medieval sites, the majority of which are pastoral archaeological remains such as sheepfolds, shieling huts and enclosures (Sites 10, 44, 51-54, 56, 68, 72-75, 79-81, 83-88, 99, 110, 118-21, 147, 149-50, 157-59, 209-215, 219-20, 223-25, 229-37, and 243-52). Other post-medieval sites within the 5 km study area include residential farmsteads and associated buildings (Sites 12 – 23, 57-59, 61-64, 67, 76, 98, 115-17, 122-30, and 132-46), and one heritag assets related to the development of coastal towns (Site 143).

Within the archaeological core study area, there are a number of heritage assets which likely date to the post-medieval period. These include shieling huts, (Sites 52 and 53), as shown in Plate 2, a farmstead (Site 122), two sheepfolds (Site 254 and 263), milestone (Site 257), and bloomer (Site 50), of which sites 50, 122, 254 and 263 are located within the commercial forestry. This indicates a post-medieval site within the Development boundary and represents transhumance activity that is associated with exposed upland locations. Commercial forestry is present throughout the Development site, particularly in the eastern area. This land use across the site will likely have affected ground conditions so that survival of undisturbed extant remains in areas of forestry is very low. There is a higher potential for archaeological remains in areas outwith the commercial forestry though due to the exposed nature of the site and the good cartographic coverage of the 5 km study area, this is still low. Any unknown archaeological remains would likely be representative of transhumance activity.

5.5 Modern Era

This period saw the continued growth of coastal towns and villages such as Compleetown and Clachan and the development of CalMac Ferry terminals at Kennacraig and Claonaig. In 2012, Cour Windfarm (Plate 3) was constructed adjacent to the Site with the access track running through the Site.

Within the 5 km study area, there are a limited number of modern heritage assets of significance. Included within the HER are a public house (Site 183) and three quarries (Sites 96, 107, 227, and 238). There are no modern archaeological features in the archaeological core study area, the nearest is located 1.7 km south of the Development. Modern archaeological features are likely located along public roads on either coastline and will still

³³ Anon (n.d.) Available at <https://www.kintyre.org/history.shtml> [Accessed on 29/11/2018]

³⁴ Anon (n.d.) Available at <https://www.scottishaccommodationindex.com/campbeltownpics.htm> [Accessed on 30/11/2108]

³⁵ Webb J (n.d.) Available at <http://www.ralstongenealogy.com/saddell.htm> [Accessed on 30/11/2108]

³⁶ Ibid.

be visible in the landscape. As such, the archaeological potential for medieval remains is very low.

6 ARCHAEOLOGICAL AND HISTORICAL POTENTIAL

The following section summarises the potential for subsurface archaeological remains within the archaeological study area, outlines the potential threat from the Development to these remains, and suggests further work and mitigation strategies.

The review of the data collected and the current site conditions indicates that the archaeological study area has low potential for further archaeological remains as shown in Table 2.

6.1 Archaeological Potential

There are no prehistoric to early medieval archaeological sites recorded within the archaeological core study area, with intensive occupational evidence focused along the coast and lower waterways (e.g. Kildonan Dun). Upland areas were likely utilised from the medieval period onwards as part of transhumance subsistence patterns of seasonal occupation. Nearby villages such as Clachan and Crossaig likely have their origins in the post-medieval period, with archaeological remains from the 17th century. The majority of archaeological evidence within the study areas is of post-medieval date, showing the expansion of communities along the coastlines and transhumance activity and seasonal shelters in upland areas.

Within the archaeological core study area, there are a number of heritage assets which likely date to the post-medieval period. These include shieling huts, (Sites 52 and 53), as shown in Plate 2, a farmstead (Site 122), two sheepfolds (Site 254 and 263), milestone (Site 257), and bloomer (Site 50), of which sites 50, 122, 254 and 263 are located within the commercial forestry. This indicates a post-medieval site within the Site and represents transhumance activity that is associated with exposed upland locations. The Development is located at elevations above 200 m, any unknown archaeological remains would likely be found at levels of lower elevation near the coast particularly around areas of nucleated settlement. Any unknown archaeological remains that do occur within the Site would likely be representative of transhumance activity.

Commercial forestry is present throughout the Development site, particularly in the eastern area. This land use across the site will likely have affected ground conditions so that survival of undisturbed extant remains in areas of forestry is very low. There is a higher potential for unknown archaeological remains to survive in areas outwith the commercial forestry though due to the exposed nature of the site and the good cartographic coverage of the 5 km study area, this is still low.

Table 2 provides a summary of the Archaeological Potential of the Site.

Table 2: Summary of Archaeological Potential of the Site

Period	Visibility within 5 km study area	Presence or Absence of sites within 5 km study area	Likelihood of further Discoveries within the Development
Prehistoric	Present within the 5 km study area in low lying areas along the coast. Archaeological features include burial cists, standing stones and duns. Limited presence of prehistoric	Limited presence, any subsurface remains would likely lie in areas of low elevation along the coastline	Very Low

	archaeological features in upland areas.		
Early Medieval	Present within the 5 km study area in low lying areas along the coast. Archaeological features include early medieval burial grounds and church crosses. Limited presence of early medieval archaeological features in upland areas.	Limited presence, any subsurface remains would likely lie in areas of low elevation along the coastline	Very Low
Medieval	Present within the 5 km study area in low lying areas along the coast. Archaeological features include medieval churches and burial grounds. Limited presence of medieval archaeological features in upland areas.	Limited presence, any subsurface remains would likely lie in areas of low elevation along the coastline	Very Low
Post-Medieval	Good-remains still present in coastal and upland areas. Archaeological remains in low lying coastal areas relate to expansion of villages such as Clachan and Crossaig. Archaeological remains in upland coastal are representative of pastoral transhumance activity. Good cartographic coverage; however, remains may have been impacted by forestry operations	Prevalent in the form of auxiliary remains associated with farmsteads. Forestry operations in large portions of upland locations may have impacted any unknown archaeological remains.	Low
Modern	Good-remains still highly visible and good cartographic coverage	Limited presence, any modern archaeological remains would likely still be extant and visible.	Very Low

6.2 Potential Impact from the Development

Direct impacts are physical alterations which may affect either known sites or currently unknown buried and otherwise unrecorded archaeology. Direct or physical impacts may damage or destroy archaeological features and are usually permanent and irreversible. These effects are likely to occur during construction or decommissioning of a site.

Direct effects are limited to the Development footprint where associated earthmoving and excavation occur and not to the full extent of the archaeological core study area. Excavations for the turbine foundations are anticipated to reach a depth between 2-4 m with bedrock encountered at depths below 3 m. Excavation depths for cable runs and access tracks are anticipated to reach c. 500-750 mm. It is therefore unlikely that any

archaeology situated at a depth of more than 1 metre has the potential to receive a direct impact, other than at the turbine locations.

The Development has the potential to cause indirect effects, primarily visual, upon the settings of nationally important cultural heritage assets within and beyond the study area of this desk-based assessment. Due to the height and visibility of the turbines, it is considered that these indirect effects have the potential to be significant (i.e., they may have the potential to so alter the settings of some cultural heritage assets that the understanding, appreciation or experience of those assets is changed or harmed). These effects will be assessed and reported in full within the EIA Report.

6.3 Potential Mitigation

It is considered that preservation *in situ* is the preferred method of mitigation for known archaeological remains. However where this is not possible, or where there is a likelihood of encountering locally important unknown subsurface archaeological remains, a programme of archaeological works leading to preservation by record is considered appropriate.

Due to there being very low potential for further unknown significant archaeological remains within the archaeological study area it is proposed that the following steps are undertaken to reduce the potential impact:

- Avoidance of known or potential archaeological features and sites during finalisation of site design; and
- Consultation with West of Scotland Archaeology Service archaeologist in order to establish appropriate mitigation.

7 CONCLUSION

The desk-based assessment has revealed that many of the archaeological remains recorded within the study areas relate to pastoral activities from the post-medieval period.

Potential to encounter further unrecorded archaeological remains is low as evidence indicates transhumance seasonal occupation within the Development with ground conditions affected by forestry.

In conclusion, it is likely that any work undertaken on this site would have very low potential to have a direct impact upon potentially significant, previously undiscovered archaeological remains. Consultation should be undertaken with the West of Scotland Archaeological Service archaeologist to agree appropriate mitigation measures, where required.

There is also the potential for indirect impacts to affect assets both in the Site and the wider area. Consideration of indirect effects will be reported on fully in the EIA Report, taking into account the way in which the Development may affect the setting of nationally important sites.

8 COPYRIGHT

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9 GAZETTEER OF ARCHAEOLOGICAL SITES

The following gazetteer summarises the results of the desk-based assessment and includes recorded heritage assets within the 5 km study area. Archaeological sites within the archaeological core study area are highlighted in grey. The Site ID number relates to the sites located in Figures 2, 3 and 4.

9.1 Scheduled Monuments within 5 km

Site ID	Scheduled Monument Number	HER Reference	Type	NAME	x	y
1	175	3550; 3551	Standing stones and cists	Ballochroy	173078	652421
2	212	3540	Standing stone	Loch Ciaran	178042	654796
3	2487	3545	Cairn	Corriechrevie cairn	173850	654051
4	3184	3541	Dun	An Dunan	175627	652050
5	3185	3555	Fort	Ronachian Bay	174073	654799
6	3643	3855	Dun	Sundale Dun	181440	645022
7	3673	3536	Dun	Dun Ronachian	174737	655522
8	3676	3534	Cross and Cross slabs	Clachan Churchyard Cross	176426	656053
90	3695	3529	Crosses and carved stones	Ballinakill House	176697	656126
10	3817	3543	Shielings	Talatoll	177646	652996

9.2 Scheduled Monument outwith 5 km

Site ID	Scheduled Monument Number	HER Reference	Type	NAME	x	y
11	2491	n/a	Dun	Dun Skeig	175770	657210

9.3 Listed Buildings

Site ID	Listed Building Number	HER Reference	Type	NAME	x	y
12	12017	WoSAS pin: 3534	Category B Listed Building	Clachan, Kilcalmonell And Kilberry Parish Church And Burial-Ground		
13	12018	n/a	Category B Listed Building	Clachan, Kirkland	176369	656125
14	12019	WoSAS pin: 3521	Category B Listed Building	Clachan, Kilcalmonell free church	176548	656101
15	12020	WoSAS pin: 3522	Category C Listed Building	Clachan, Kilcalmonell free church Gate	177669	656210
16	12021	n/a	Category C Listed Building	Ballinakill Hotel	177052	656112
17	12022	n/a	Category B Listed Building	Ballinakill Lodge	176567	656136
18	12023	3520	Category C Listed Building	Ballinakill Gate House	176564	656137
19	12024	n/a	Category B Listed Building	Ronachan House	174363	655267
20	12025	WoSAS pin: 3538	Category C Listed Building	Ronachon Estate Bridge	174675	655341
21	12026	WoSAS pin: 3539	Category C Listed Building	Ronachon Estate Bridge	174392	655212
22	13070	WoSAS pin: 3537	Category C Listed Building	Ronachon Estate, North Lodge	174752	655387
23	18360	n/a	Category A Listed Building	Cour House	182342	648147

9.4 HER Data

Site ID	HER Reference	Type	NAME	x	y
24	3518	Balinakill Estate	Country House; Farmstead	177200	656100
25	3519	Balinakill	Country House	177050	656100
26	3529	Balinakill	Urns; Cross	176698	656127

Site ID	HER Reference	Type	NAME	x	y
27	3531	Clachan	Burial-ground	176580	656250
28	3542	Loch Ciaran	Crannog	177780	654030
29	3546	Corriecrevie	Cup-and-ring-markings	174314	654387
30	3547	Ballochroy	Standing Stone	173486	652166
31	3549	High Ronachon	Cup-markings	174500	654400
32	3552	Ballochroy	Cup-and-ring-markings	173399	652229
33	3553	Ballochroy	Cup-markings	173684	652312
34	3554	Ballochroy	Cup-markings	173770	652625
35	3556	Ballochroy	Fort (possible)	173590	652685
36	3557	Kilmichael	Burial-ground; Cross-slab	172842	652001
37	3854	Cour	Cist	182240	648550
38	3856	Cladh Bhadan	Burial-ground	182900	649650
39	3862	Port an Dunain	Natural Feature	181430	644910
40	3863	Grogport	Cist	180790	644350
41	3864	Grogport	Cairn; Cist	180810	644300
42	3868	Coille Rubha Dhuibh	Bloomery Mound	186000	655100
43	3888	Coille Rubna Dhuibh	Charcoal Burning Platforms	186100	655300
44	3898	Larachmor Burn	Shieling-huts	182641	655287
45	3900	Oragaig Burn	Standing Stone (possible)	183480	655080
46	3901	Oragaig	Cup-markings	185055	654498
47	3902	Eascairt	Dun	184870	653660
48	3903	North Crossaig	Natural Features	182990	651780
49	3904	Crossaig	Monastery (possible)	183120	651460
50	3905	Crossaig Glen	Bloomery	182350	651650
51	23	12924	Narachan	Shieling-huts	177000
52	24	12925	Gleann Laoigh	Shieling-huts	178680
53	25	12926	Gleann Laoigh	Shieling-huts	179161
54	26	12928	Auchenbreck	Enclosures; Stone Setting	178150
55	27	13931	An Caisteal	'Castle'	177150
56	28	13932	Loch Ulagadale	Shieling-huts	174720
57	29	14207	Kilmichael	Settlement	172996
58	30	14208	Clackadoonam / Largie Estate, Kintyre	Farmstead	173309

Site ID	HER Reference	Type	NAME	x	y
59	31	14210	Glacantarry	Farmstead	174310
60	32	14550	Loch a' Chuirn / Loch Carran	Cairn (possible)	178950
61	33	14551	South Carnmore	Farmstead	173341
62	14552	North Carnmore	Farmstead	173390	652519
63	14553	Correchrevie / Carnbeg	Farmstead	173950	653850
64	14554	North Carnbeg	Farmstead	174419	654409
65	14555	Ballochroy	Bridge	172840	652130
66	14556	Minen Cottage	Kilns; Whisky Stills (possible)	175450	651850
67	14557	Loch Garasdale, 'Minen'	Farmstead	176620	651530
68	14558	Loch Ciaran	Shieling-hut (possible)	178050	653930
69	14559	Loch Ciaran	Corn Mill	178040	653940
70	14574	Crossaig Glen / Croitbhridean	Settlement	181150	651970
71	14575	Cnoc Dubh nan Coileach	Stones	184250	654350
72	14576	Larachmor Burn	Shieling-hut	182350	654850
73	14577	Cnoc Dubh nan Coileach	Shieling-hut	184150	654450
74	14578	Allt Oragaig	Enclosure; Shieling-hut	184650	654750
75	14884	Cnoc Dubh	Shieling-huts	185050	655750
76	15568	Sron Albannach / Largie Estate, Kintyre	Farmstead	173050	649350
77	15571	Coalashee / Largie Estate, Kintyre	Cairn (possible)	172480	650290
78	15573	Coalashee / Largie Estate, Kintyre	Dun (possible); Rig	172560	650100
79	15574	Coalashee / Largie Estate, Kintyre	'Enclosure'	172930	650180
80	15575	Coalashee / Largie Estate, Kintyre	Rig	172750	650250
81	15576	Coalashee / Largie Estate, Kintyre	Enclosure	173160	650470
82	15577	Achnafad / Largie Estate, Kintyre	Hut-circle (possible)	173350	651450
83	19199	Larachmor Burn	Shieling-huts	183250	656650
84	19200	Larachmor Burn	Shieling-huts	183250	655850
85	19201	Larachmor Burn	Shieling-huts	183350	655950
86	19202	Larachmor Burn	Shieling-huts	183050	655650
87	19204	Allt Oragaig	Shieling-hut	184350	655150
88	19205	Larachmor Burn	Shieling-huts	182550	655050
89	19206	Larachmor Burn	Standing Stone	183350	656050

Site ID	HER Reference	Type	NAME	x	y
90	21173	Minen	Millstone (possible)	175900	652500
91	21302	Allt Breac-Laraich	Bloomery	177920	644830
92	42826	Cour House, Boathouse / Cour,	Boathouse	182640	648430
93	43168	Allt Oragaig	Standing Stone	183480	655080
94	43323	Cnoc Donn	Soilmark	175600	654200
95	43324	Cnoc Donn	Wall; Field Bank; Peat Cutting	174800	653100
96	43325	Cnoc Donn	Quarry	174200	653500
97	43414	Breachlarach	Industrial; Farmstead; Limekiln	177800	645000
98	43415	Craigmore / Creagmhor	Farmstead	178000	645490
99	43416	Cruach Nam Fiadh	Shieling-huts; Platform	181390	656190
100	43417	Cruach Nam Fiadh	Mounds: Natural Feature	181260	656630
101	43420	Creag Loisgte Talatoll	Rig	175300	653600
102	43421	Larachmor Burn	Cairns	182560	655900
103	42826	Cour House, Boathouse / Cour,	Boathouse	182640	648430
104	43168	Allt Oragaig	Standing Stone	183480	655080
105	43323	Cnoc Donn	Soilmark	175600	654200
106	43324	Cnoc Donn	Wall; Field Bank; Peat Cutting	174800	653100
107	43325	Cnoc Donn	Quarry	174200	653500
108	43414	Breachlarach	Industrial; Farmstead; Limekiln	177800	645000
109	43415	Craigmore / Creagmhor	Farmstead	178000	645490
110	43416	Cruach Nam Fiadh	Shieling-huts; Platform	181390	656190
111	43417	Cruach Nam Fiadh	Mounds: Natural Feature	181260	656630
112	43420	Creag Loisgte Talatoll	Rig	175300	653600
113	43421	Larachmor Burn	Cairns	182560	655900
114	43422	Loch Chorra-riabhaich	Cairn	180810	656300
115	43427	Lurgan / Lorgie	Farmstead	176470	645840
116	44683	Achaglass	Farmstead	178920	655920
117	44684	Scotmill	Farmstead	179340	656360
118	44947	Larachmuir Burn	Shieling-hut (possible)	183240	656510
119	44948	Larachmuir Burn	Shieling-huts (possible)	183500	656420

Site ID	HER Reference	Type	NAME	x	y
120	44949	Larachmuir Burn	Shieling-hut (possible); Enclosure	183740	656330
121	44950	South Crossaig	Enclosure	183250	650350
122	44951	Crossaig Glen	Farmstead	181530	651580
123	44952	South Crossaig / Ardnandamh	Farmstead	183370	650760
124	44953	South Crossaig	Farmstead	183110	650970
125	44954	Allt Romain	Farmstead (possible)	184290	653090
126	44955	Allt Romain / Auchachuillin	Farmstead; Head-dyke	183850	652980
127	44956	Allt Na Buaille Salaich	Building	182580	649040
128	44957	Gortan An T-sailleir	Structure	182030	647030
129	44958	Sundale Cottage	Farmstead	181620	645230
130	44975	Oragaig / Airdbhan	Farmstead	185670	654510
131	45036	Cnoc Laoighscan	Shieling-hut (possible)	177440	650350
132	45037	Minen Cottage	Building	175270	651850
133	45038	Loch Ciaran	Farmstead (possible)	177660	654570
134	45039	Minen	Farmstead	175670	652090
135	45040	Ballochroy Glen	Enclosure	174560	651950
136	45041	Coalashee	Enclosure	172450	650610
137	45042	Correchrevie	Building	173540	653170
138	45043	Loch Cluaineach, Limekiln	Industrial; Buildings; Enclosures; Limekiln	174470	650150
139	45044	Achnafad	Farmstead	172830	651530
140	45045	Ballochroy Glen	Farmstead (possible)	174550	651790
141	45046	Ballochroy	Farmstead (possible)	173230	652050
142	45047	Correchrevie / Carnbeg	Farmstead	173700	653660
143	45048	Ballochroy	Township (possible); Corn Mill	172720	652190
144	45049	Auchenbreck	Farmstead	178360	644030
145	45050	Narachan Burn	Enclosure; Field	176700	648400
146	45051	Beinn Bhreac / Beinnbhreac	Farmstead	178810	646800
147	50642	Sron Albannach / Achnadrian Farm; Achanadriane	Shieling-hut	173120	649850
148	50643	Sron Albannach / Achnadrian Farm; Achanadriane	Stone Circle (possible)	173050	649650

Site ID	HER Reference	Type	NAME	x	y
149	50644	Sron Albannach / Achnadrian Farm; Achanadriane	Shieling-huts	172950	649580
150	51631	Saddell & Skipness	Field Enclosures	176250	645700
151	51643	Saddell & Skipness	Croft	176450	645950
152	51906	Brackley Forest	Stone Circle	177300	646200
153	53237	Ballochroy 1	Cup Marked Rock	173812	652589
154	53238	Ballochroy	Cup Marked Rock	173715	652798
155	53241	Corricrevie	Cup Marked Rock	174211	654156
156	53242	Corricrevie	Cup Marked Rock	174247	654382
157	54814	Rubha na h-Airde Baine	Enclosure; field system	185960	654560
158	54815	Rubha na h-Airde Baine	Clearance Cairn	185900	654460
159	54816	Rubha na h-Airde Baine	Clearance Cairns	185840	654410
160	54817	Port Fada	Wall	185740	654290
161	54818	Brian Phort	Walls	184970	653720
162	54819	Brian Phort	Structure	184940	653660
163	54820	Allt Romain	Wall	184620	653160
164	54821	Allt Romain	Possible kiln	184400	653010
165	54822	Allt Romain	Walls	184350	652890
166	54823	Sgeir na h-Inghinn	Wall	184200	652530
167	54824	Eascairt	Observation post	183770	652150
168	54825	Port Alasdair Ruaidh	Walls	183820	652030
169	54826	Ravens Bay	Wall	183730	651890
170	54827	Ravens Bay	Wall	183660	651880
171	54828	Crossaig	Bridge	183660	651840
172	54829	Crossaig	Possible Old Jetty	183320	651320
173	54830	Crossaig	Wall; possible cairn	183190	651370
174	54831	Crossaig	Well	183310	651220
175	54832	Crossaig	Building	183340	651170
176	54833	Port na Crossaig	Boathouse; shed	183370	651070
177	54834	Port na Crossaig	Building	183490	650950
178	54835	South Crossaig	Boathouse; slipway	183450	650780
179	54836	Cour Bay	Buildings	182640	648790
180	54837	Cour Bay	Landing place	182650	648440

Site ID	HER Reference	Type	NAME	x	y
181	54838	Cour	Promontory	182690	648190
182	54839	Cour	Stone wall	182470	647800
183	54840	Sunadale Inn	Public House	181220	644870
184	54841	Sunadale	Well	181160	644730
185	54842	Acra	Building	181000	644590
186	54843	Grogport	Milestone	180950	644480
187	54844	Grogport	Stone wall	181280	643930
188	55748	Rubha Na H-airde Baine	Clearance Cairn, Enclosure, Field System	185960	654560
189	55749	Port Fada	Wall	185740	654290
190	55750	Brian Phort	Structure, Wall	184970	653720
191	55751	Allt Romain	Wall	184620	653160
192	55752	Allt Romain	Kiln, Wall	184400	653010
193	55753	Sgeir Na H-inghinn	Wall	184200	652530
194	55754	Uamh Nan Calman / Eascairt	Observation Post	183770	652150
195	55755	Ravensbay	Wall	183820	652030
196	55756	Sgeir Bhuidhe / Crossaig	Bridge	183660	651840
197	55757	Crossaig	Building, Jetty, Well	183320	651320
198	55758	Crossaig	Cairn, Wall	183190	651370
199	55759	Port Na Crossaig	Boathouse	183370	651070
200	55760	Port Na Crossaig	Building	183490	650950
201	55761	South Crossaig	Boathouse, Slipway	183450	650780
202	55762	Cour Bay	Building	182640	648790
203	55763	Cour	Promontory Fort	182690	648190
204	55764	Cour	Wall	182470	647800
205	55765	Acra	Building, Milestone	181000	644590
206	58346	Breklarich	Croft	177800	644986
207	58347	Breklarich	Corn Drying Kiln	177819	644997
208	58354	Deucheran	Bloomery	177927	644827
209	58362	Drochaid Burn	Enclosure	176234	645698
210	58366	Gleann Drochaide	Croft	176447	645936
211	58368	Lorgie	Sheepfold	176484	645845
212	58482	Brackley	Sheepfold	178674	644162

Site ID	HER Reference	Type	NAME	x	y
213	58483	Craigmhor	Croft	177972	645489
214	58484	Craigmhor	Sheepfold	178100	645600
215	58485	Narachan	Sheepfold	177000	646600
216	58486	Sunadale	Dyke	180600	644800
217	58487	Garrachcroit	Croft	180849	644700
218	58488	Sunadale	Croft	181500	646000
219	58855	Deucheran	Shieling	178163	644165
220	59094	Creag Mhor	Shieling	177453	645787
221	59095	Loch a'Chuirn	Cairn	178897	646201
222	59096	An Caisteal	Dun; Fort	177096	645299
223	59102	Barmolloch	Sheepfold	180601	643914
224	59344	Cnoc Reamhar	Enclosure	177560	646117
225	59451	Grogport	Enclosure	178630	644442
226	61883	Ballochroy 2	Cup Marked Rock	173715	652798
227	61909	Achnafed Quarry	Quarry (Modern)	173450	650950
228	61959	Corriecrevie	Cup And Ring Marked Rock	174211	654156
229	62716	Narachan Burn	Shieling; Enclosure	177589	647627
230	62717	Beinn Bhreac	Shieling	179120	646900
231	62718	Beinn Bhreac	Sheepfold	178447	647008
232	62719	Allt a'Bhealaich	Field Boundary	182023	648700
233	62720	Gortanclouche	Building; Enclosure; Field Boundary	181895	648704
234	62721	Allt a'Bhealaich	Structure	181849	648628
235	62722	Gortan an t-Sailleir	Building; Enclosure	181900	647200
236	62723	Gortan an t-Sailleir	Field Boundary	181589	647062
237	62724	Deargalli	Building; Enclosure	181800	646400
238	62725	Allt a'Bheime	Quarry	181895	647066
239	62726	Ballochroy Burn	Head Dyke; Wall	173410	652080
240	62727	Ballochroy Burn	Culvert	173665	652084
241	62728	Ballochroy Burn	Culvert	173845	652042
242	62729	Ballochroy Burn	Building	173740	652120
243	62730	Ballochroy Burn	Track; Field Boundary	173740	652120
244	62731	Ballochroy Burn	Field Boundary; Bank (Earthwork)	174020	652030

Site ID	HER Reference	Type	NAME	x	y
245	62732	Ballochroy Burn	Field Boundary; Bank (Earthwork)	174429	651792
246	62733	Ballochroy Glen	Rig and Furrow	174840	651620
247	62734	Ballochroy Glen	Field Boundary; Wall	174779	651407
248	62735	Ballochroy Glen	Track	175201	651869
249	62736	Ballochroy Glen	Field Boundary; Bank (Earthwork)	175207	651873
250	62737	Minen Farmstead	Field Boundary; Bank (Earthwork); Field System	175310	651960
251	62738	Minen Farmstead	Field Boundary; Bank (Earthwork); Field System	176000	651920
252	66396	Gleann Caillich Mor	Shielings	179229	650916
253	68163	Closeburn	Farmstead	181740	646100
254	68164	Spearsaig	Sheepfold	182420	649020
255	68165	Spearsaig	Farmstead	182495	649052
256	68166	Cour Burn	Dam; Reservoir	181597	648078
257	68167	South Crossaig	Milestone	183023	650293
258	68450	Sron Albannach	Mound	173497	649483
259	68451	Sron Albannach	Wall	173442	649358
260	68454	Clackadoonam	Cairn (Possible)	173564	650423
261	68455	Ballochroy Glen	Platform (Modern)	173987	651132
262	68456	Sron Albannach	Bank (Earthwork)	172907	649520
263	HM-1	Sheepfold 1924 OS Map	Sheepfold	180426	650034

10 PLATES



Plate 1: View from the south of T5, overlooking the Site to the south.



Plate 2: View of Shieling hut (Site 52), looking east towards Cour Windfarm



Plate 3: View from the south of T5, overlooking Cour Wind Farm to the southeast.

11 FIGURES