Chapter 2 Site Selection and Design Iterations

Contents

2.1. Introduction 1
2.2. Site Location, Site Selection and Alternatives 1
2.3. Design Process 3
2.4. Layout Evolution 4
2.5. Landscape Design Response 7
2.6. Summary 12

List of Abbreviations

Abbreviation	Description
ACoW	Archaeological Clerk of Works
AOD	Above Ordnance Datum
BDOHL	Beauly Denny Overhead Line
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
GWMR	General Wade's Military Road
ha	Hectares
km	Kilometres
kV	Kilovolt
m	Metres
MoD	Ministry of Defence
NATS	National Air Traffic Services
OS	Ordnance Survey
OWESG	Onshore Wind Energy Supplementary Guidance
PAN	Planning Advice Note
SAC	Special Area of Conservation

SEPA	Scottish Environment Protection Agency
SLA	Special Landscape Area
SPP	Scottish Planning Policy
SSSI	Site of Special Scientific Interest
TTA	Tactical Training Area
THC	The Highland Council
UK	United Kingdom
WLA	Wild Land Area
ZTV	Zone of Theoretical Visibility

2. Site Selection and Design Iteration

2.1. Introduction

2.1.1. The Environmental Impact Assessment (EIA) Regulations require the consideration of alternatives and an indication of the reasons for selecting the site, except where limited by constraints of commercial confidentiality. Paragraph 5(2)(d) of the EIA Regulations requires that an EIA Report includes *"a description of the reasonable alternatives studied by the developer, which are relevant to the development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment"*.

2.1.2. Part 2 of Schedule 4 of the EIA Regulations similarly notes the following requirement: *"A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects".*

2.1.3. This chapter provides information on how the Proposed Development site was identified by the Applicant as a suitable location for a wind energy development, as well as the design iteration process undertaken to arrive at the final development layout and design.

2.1.4. The EIA process provides an opportunity to integrate technical and environmental considerations into the iterative design of a development, allowing potential environmental effects to be considered and minimised so that the environment is considered within the Proposed Development design layout from the earliest stage.

2.1.5. The final design of the Proposed Development represented in this EIA Report was arrived at following iterative consideration of many alternative design configurations, including positioning of turbines, turbine scale, layout and design of tracks and ancillary infrastructure. This chapter describes the design iteration process from which the Proposed Development design was selected.

2.1.6. The final design for the Proposed Development is described in **Chapter 3: Project Description** and is shown in **Figure 1.2**.

2.2. Site Location, Site Selection and Alternatives

Site Location

2.2.1. The characteristics of the Proposed Development are described in **Chapter 3**.

2.2.2. In order to identify a suitable site, the following technical and environmental factors that influence the feasibility of a potential wind farm were taken into account:

- Initial desk-based studies and onsite wind data suggest that there is likely to be sufficient wind resource, and the site is available for wind energy development;
- Suitable terrain and topography for a wind energy development;
- Available options to connect the Proposed Development to the electricity grid;
- Site access suitability for the delivery of turbine components, such as the blades;
- Landscape and Visual impacts;
- Military and Aviation constraints;
- Environmental constraints such as ecology, archaeology, hydrology etc;
- Health and Safety requirements such as stand offs from public roads;

- Underground and overground services such as pipelines, cables, overhead lines and telecommunication links;
- Appropriate ground conditions; and
- Cumulative effects with other wind farm developments.

Site Selection

2.2.3. Since being founded in the 1990s the Applicant has engaged in a continual search and assessment of potential sites throughout Scotland to progress and develop into wind farm applications. The Applicant has built up a comprehensive geographic information system (GIS) that has allowed robust identification of sites with the key characteristics for renewable energy development in Scotland. This process has yielded a number of sites which have progressed to operational wind farms.

2.2.4. The Applicant was made aware of an opportunity to investigate the potential to develop a wind farm on the Culachy Estate. Following on from this opportunity for development, the Applicant undertook an initial desk-based GIS assessment to identify the site's potential for a wind farm, which made use of the following resources:

- Maps of existing and planned local, regional, national and international designated areas for landscape, natural heritage and cultural heritage;
- Scottish Natural Heritage (SNH) (now NatureScot) Carbon and Peatland 2016 map;
- Residential postcode information;
- Watercourse and waterbody maps;
- The Ministry of Defence (MoD) low flying area maps and Tactical Training Area (TTA) maps;
- National Air Traffic Services (NATS) safeguarding maps;
- National Grid network operators' distribution and transmission maps for the 33 kV and 132 kV network;
- Telecommunications infrastructure and links maps;
- Renewable Energy Resource maps (e.g. wind and/or solar irradiance);
- Up-to-date and emerging Development Plans;
- Location maps of existing and proposed wind farms; and
- 1:50,000, 1:25,000 and 1:10,000 Ordnance Survey (OS) maps and contour data.

2.2.5. To supplement the above resources, the Applicant also considered the site's potential in the context of:

- The local planning history of similar proposals in the vicinity, in particular the decision on appeal to refuse a Town and Country Planning application for a wind farm on this site in 2018 (PPA-270-2151), the key sensitivities identified, and consultee advice received in respect of that application;
- 'Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations' (SNH, updated in June 2015);
- Highland Wide Local Development Plan (HwLDP) (THC, 2012);
- The Onshore Wind Policy Statement 2022; and
- National Planning Framework 4 (Scottish Government, 2023).

2.2.6. A detailed feasibility study and workshop was undertaken with planning and environmental consultants who had recent, local and relevant renewable development experience. This stage included an initial review of potential cumulative impacts including landscape and visual considerations.

2.2.7. The Culachy Wind Farm site was successful in this feasibility stage and as such taken forward for consultation with stakeholders, via The Highland Council's (THC) pre-application process, and further investigation and survey.

Proposed Development Site Suitability

2.2.8. The feasibility work summarised above identified the following technical and environmental considerations as supporting the identification of the site as suitable for a wind energy development:

- Strong wind resource;
- Distance to residential properties over 3 km from turbine development area;
- Good opportunity for genuine community engagement and benefit;
- Opportunities for peatland habitat restoration and biodiversity enhancement, given historical modification and degradation of the peat resource and peatland habitat at the site;
- Potential to make use of existing infrastructure and tracks put in for construction of the Beauly Denny Overhead Line (BDOHL);
- No aviation constraints; and
- The potential for the development to positively and significantly contribute to regional and national renewable energy and carbon reduction targets.

2.2.9. The Proposed Development site was the subject of a previous planning application in 2014 for a wind farm, Culachy Wind Farm, comprising 13 wind turbines up to 149.5 m (14/04782/FUL). The application was refused at appeal in 2018 (PPA-270-2151).

2.2.10. Since planning permission was refused for this scheme in 2018, there have been significant changes in the national energy and planning policy picture in Scotland. In 2019 the Scottish Government introduced legislation which sets a legally binding requirement to deliver net-zero greenhouse gas emissions by 2045, with associated interim targets. In addition, National Planning Framework 4 (NPF4) was adopted by the Scottish Ministers on 13 February 2023, following approval by the Scottish Parliament in January 2023. NPF4 replaces NPF3 and Scottish Planning Policy (SPP) and forms part of the statutory development plan. A key objective of NPF4 is to tackle the global climate emergency and nature crises. The changed legal position and planning and energy policy are addressed in **Chapter 5: Planning and Energy Policy** as well as the accompanying Planning Statement.

Consideration of Alternatives

2.2.11. The Applicant has considered a number of alternative turbine layouts for the Proposed Development, as outlined in **Section 2.4** below.

2.2.12. The main alternatives including design, turbine specification, location, size and scale have been considered for the Proposed Development. The following section explores these options and explains how the final design of the Proposed Development has evolved.

2.3. Design Process

Design Principles

2.3.1. Current best practice guidance contained in the Siting and Designing Wind Farms in the Landscape SNH 2017 guidance provides a framework for the consideration of key design issues including turbine size, layout composition, wind farm design in relation to landscape character and designing for multiple wind farms.

2.3.2. The design process of the Proposed Development was led with Landscape and Visual Design Objectives as outlined below and further described in **Section 2.5.**

- Create as compact a layout as possible to contain effects on wildness qualities to the northern corner of Wild Land Area (WLA) 19 which largely aligns with areas where the BDOHL incurs baseline influence.
- In creating a compact layout, minimise effects on the nearby Loch Lochy and Loch Oich Special Landscape Area (SLA), Loch Ness and Duntelchaig SLA, and WLA 19 Braeroy - Glenshirra - Creag Meagaidh.
- Reduce turbine visibility from within the area of Fort Augustus, scattered settlements and surrounding road network within the Great Glen.
- Create a compact layout with a clear design rationale and simple appearance so it would be viewed as a cohesive arrangement in longer distance views from the surrounding landscape and hilltops (including elevated sections of the Great Glen Way).

2.3.3. The following environmental and technical principles were adopted during the design iteration process to ensure that the final design of the Proposed Development was the most suitable for the site:

- Minimise effects on cultural heritage receptors as far as possible and avoid direct effects.
- Minimise impacts on AWI by utilising existing tracks on site.
- Avoid areas of deep peat wherever possible.
- Avoid siting turbines on steep slopes.
- Maintain a minimum 50 m buffer around watercourses except where crossings are required.
- Maintain suitable buffers from protected species and around bird breeding sites.
- Maintain suitable buffers from private water supplies.
- Create a scheme which maximises the potential of the site to generate renewable energy.
- Consideration of the BDOHL and application of a 312 m buffer to turbines
- Respect other environmental and technical constraints and associated buffers.

2.3.4. The above factors were carefully evaluated, as evidenced by the number of design iterations of the proposed site. The final development layout is the 20th iteration; noting some iterations involved only limited and minor changes, the iterations have been grouped into six principal stages (Layouts A to G), as described in **Section 2.4** and illustrated on **Figures 2.1 to 2.4.**

2.4. Layout Evolution

Turbines and Associated Infrastructure

2.4.1. The layout of the Proposed Development has been an iterative process which started early in 2022, each time taking into consideration information gathered at the site or comments from consultees, as well as the professional judgement of technical experts.

2.4.2. The design of hardstandings and tracks evolved together with the turbine layout, to arrive at the final design shown on **Figure 2.5 (a-d).**

2.4.3. **Figure 2.5 (a-d)** also shows the key on-site constraints which were considered in the design iteration process noted above. This figure seeks to illustrate how the final design has appropriately responded to and avoided key constraints, while maintaining suitable turbine spacing. The aesthetic design of the development and potential landscape and visual effects, as well as effects on the settings of off-site cultural heritage assets, have also been carefully considered in arriving at the final design (see **Section 2.5** below).

2.4.4. The design iterations made between Layout A to Layout C were largely driven by landscape and visual considerations, this is further explained in **Section 2.5** below.

2.4.5. The results of phase 2 peat probing and design comments received from SEPA largely informed the final layout iterations (Layout E to Layout G). The Design Freeze (Layout G) was also shown

to SEPA and they provided further design comments on this layout. These design suggestions were investigated but none taken forward as they resulted in greater excavations of peat. Details on the layout evolution and rational for final design was provided to SEPA directly and is shown in **Appendix 2.1**.

Layout A (February 2022)

2.4.6. Layout A was the initial layout with ten turbines at 230 m tip height; maximising yield and capacity against known constraints at the time identified through a desk-based study and survey data from the previous wind farm planning application, included avoiding impacts on deep peat. This was the scoping layout which was taken to the first round of public exhibitions.

Layout B (July 2022)

2.4.7. Layout B sees the number of turbines reduced from ten to nine. T1 was removed and the other nine turbines shifted further south to further set back the layout from settled areas in the Great Glen which also reduced the degree of horizontal visibility of the turbines from views in the wider landscape, enabling a more compact design layout.

Layout C (July 2022)

2.4.8. Sees the removal of T7, the closest turbine to the largest watercourse on site Allt Lagan a'Bhaine. The removal was based on further hydrology and riverbank stability assessment which revealed steep banks that required a larger standoff than the standard 50 m. With the removal of T7, Layout C comprised a total of eight turbines.

Layout D (August 2022)

2.4.9. Layout D sees the tip height of the eight turbines reduced from 230 m to 200m and T7 and T8 moved to lower elevations to minimise visibility from settled areas and along the Great Glen. The movement of T7 and T8 also minimised the cut and fill required to construct on-site access tracks and turbine hardstands. Additionally, T1, T3, T4, T5 and T6 were microsited to further minimise impacts on deep peat.

Layout E (September 2022)

2.4.10. Layout E sees further adjustment of T1 and T2 locations to avoid areas of deep peat and increase the setback distance from watercourses.

2.4.11. An initial outline design of crane hardstandings and access tracks was developed based on this layout. This was based on recommendations for hardstanding size and specification, and ensuring suitable track alignment to allow safe access and delivery of components, taking account of topography. Siting and layout of hardstandings and tracks sought to avoid deep peat. Where track routes could not entirely avoid deep peat, floated construction is proposed to avoid the requirement for excavation of peat.

2.4.12. Layout E was considered 'design chill' and was presented as part of Gatecheck 1 process (**Appendix 4.3**) and was presented at the second round of public exhibitions. This layout was also discussed with SEPA at a meeting held in October 2022 after which SEPA provided design comments. At this stage Phase 2 peat probing had not yet been complete.

Layout F (November 2022)

2.4.13. Following receipt of design comments from SEPA and processing of Phase 2 probing data, a number of moves were made to inform further Phase 2 peat probing and refinement of the design. These changes included:

- Removal of the batching plant along the access track and re-sited next to the borrow pit location.
- Modification of track between T1 and T2 to enable a one track spur (two alternatives considered for this, see Figure 2.).

- Movement of T2 72 m south-east to avoid hardstand infrastructure on a pocket of deep peat.
- T3 hardstand flipped so the permanent portion of the hardstand could be located on shallower peat.
- Movement of T5 hardstand to avoid deep peat (track also realigned here to meet new location).
- Slight move of T8 to reduce peat disturbance.

Layout G (June 2023)

2.4.14. This is the 'Design Freeze' layout and the layout assessed as part of the EIA and application submission. This design was informed by additional Phase 2 peat probing of the new infrastructure locations and some further moves were made to avoid deepest areas of peat. The moves incorporated into this final design iteration were:

- T1 moved approximately 25 m north-west, and hardstand flipped along the track to move the largest and permanent part of the hardstand to shallower peat.
- T2 relocated 78 m south-west to avoid permanent infrastructure sited on deep peat.
- Track between T1 and T2 was realigned to accommodate these moves.
- T4 moved 30 m north-east to move hardstand from a pocket of deep peat.
- T5 moved 79 m further south-east to avoid the hardstand being located on deep areas of peat.
- Tracks and junction between T4, T5 and T6 were realigned to accommodate turbine moves.

Site Access and Site Tracks

2.4.15. The proposed access route on site has been carefully considered throughout the design process. The Proposed Development is to be accessed from a newly constructed junction on the U1667 Ardachy Road, entering the site from the north.

2.4.16. There is a large amount of existing track within the site boundary which was put in place for construction of the BDOHL. The main objective of designing the site tracks was to use as much of this existing track as possible with the Proposed Development utilising 5470 m of the existing track. There are no plans to reinstate any of the existing track which will not be used as part of the Proposed Development, as the Estate use these existing tracks for their own activities.

2.4.17. Proposed new tracks have been designed to take into account existing site topography, ground conditions including peat depth, and to minimise and appropriately locate water crossings. Comments from consultees, such as SEPA and THC, were also taken into consideration and the layout amended to incorporate their suggested changes (refer to **Figure 2.6** and the standalone **Pre-Application Consultation Report**). These changes included streamlining the track to T1 and T2 to reduce impacts on peat, rerouting the tracks to T7 and T8 in order to utilise a more suitable watercourse crossing, amending the route of the access track to avoid private water supplies, and realigning the track to increase set back from woodland listed on the Ancient Woodland Inventory.

2.4.18. Full details of on site tracks, including the total length of existing, new, and floating tracks and details and locations of watercourse crossings can be found in **Chapter 3: Project Description**. Areas of floating, new, and existing tracks are illustrated on **Figure 1.2** and **Figure 2.5.**

Borrow Pits

2.4.19. Borrow pits are required as a source of rock to be used in the construction of the tracks, hardstandings and foundations. During design optimisation, the locations of infrastructure and track design was refined to minimise the volume of earthworks and cut and fill required to construct the Proposed Development. Potential locations for the borrow pits were identified

based upon a review of geological mapping and site reconnaissance. The borrow pit locations are discretely located in the landscape and minimise any additional visual effects. The borrow pit search areas would not be visible from any of the viewpoints. The total number and size of borrow pit search areas was selected to meet the estimated volume of rock required to construct the tracks, crane hardstands and foundations.

2.4.20. There are two borrow pit locations included as part of the Proposed Development. One of these is an existing borrow pit used for construction of the BDOHL track and the other was identified as having potential to yield a substantial amount of rock for construction.

2.4.21. If the Proposed Development was consented, further intrusive geotechnical investigation would be carried out to identify which of the two borrow pit locations would yield the required quality of rock for each aspect of the infrastructure (**Appendix 9.7**).

Compounds

2.4.22. The locations of the temporary construction compounds, substation and energy storage facility are shown in **Figure 1.2**. These have been considered through the iterative design process and have been sited to avoid areas of deep peat and watercourses with the aim of limiting the effects on sensitive habitats and cultural heritage features. Steep areas have been avoided to reduce the requirement for cut and fill. The construction compounds have also been located for practical purposes; to control traffic entering the site, to be located close to turbines and to facilitate construction of the substation and energy storage facility.

2.4.23. The substation and energy storage facility are located within one of the borrow pit locations and sited over 1 km from the closest residential receptors so as not to cause any noise impacts.

Micrositing

2.4.24. To be able to address any localised environmental sensitivities, unexpected ground conditions or technical issues that are found during detailed intrusive site investigations and construction, it is proposed that agreement is sought for a 50 m micrositing allowance around all wind farm infrastructure. The technical assessments (presented in **Chapters 6 to 15**) have considered the potential for micrositing and it is considered that the proposed infrastructure could be microsited without resulting in potential new effects. During construction, the need for any micrositing would be assessed and agreed with the onsite Environmental Clerk of Works (ECoW) and Archaeological Clerk of Works (ACoW).

2.5. Landscape Design Response

Introduction

2.5.1. The design of the layout has involved consideration of the landscape and visual resource within the study area to gain an insight into the manner in which the design evolution potentially mitigates effects on those key sensitivities within the landscape and visual resource of the Landscape and Visual Impact Assessment (LVIA) study area.

Landscape and Visual Context of the Site

2.5.2. The Proposed Development is located to the south of Fort Augustus to the east of the Great Glen (the turbines approximately 7.5 km from Fort Augustus). The BDOHL is aligned on a north-west to south-east axis, through the site. General Wades Military Road (GWMR), a Scheduled Monument and the Corrieyairack Pass are to the north-east of the Proposed Development connecting Fort Augustus to Laggan.

2.5.3. The landscape characteristics of the site and immediate area include a series of large-scale, smooth rounded hills and the steep-sided Glen Tarff. Moorland ground cover dominates the site with some small rocky outcrops and jagged local hill summits punctuating the moorland

terrain in the surrounding context of the site. The topography of the site itself is typical of the smooth moorland ridges / rolling uplands of the immediate area. Local summits and high points with the immediate area include Mullach a' Ghlinne (528 m Above Ordnance Datum (AOD)), Carn Bad na Circe (495 m AOD), Meallan Odhar (south-west) (535 m AOD) and Eilrig Cairn (552 m AOD). The site area is contained by the larger hills that surround this area to the south and east including Glas Charn (790 m AOD), Poll-gormack Hill (806 m AOD), Meallan Odhar (south-east) (605 m AOD), Corrieyairack Hill (806 m AOD) and Carn a Chuilinn (816 m AOD). **Figure 2.7** shows the site context and **Figure 2.8** shows the local landscape and visual context.

2.5.4. The BDOHL and its steel lattice towers are the most influential existing development within the immediate context of the Proposed Development. It crosses the same area in which the Proposed Development turbines are found, and it is its large scale infrastructure which strongly influences the sense of naturalness and remoteness in the northern parts of WLA 19. There are several operational wind farm developments within the immediate area including the Operational Wind Farms of the Millennium Cluster and Beinneun to the north-west and Stronelairg to the north-east. Consented developments in this immediate context are located close to these operational schemes with the consented Dell to the north of Stronelairg and Millennium South to the east of the Millennium cluster. Of the applications in the immediate context, Cloiche is the closest and is close to the Operational Stronelairg Wind Farm. Bunloinn is to the north-west, beyond Beinneun and the Millennium cluster. LVIA **Figures 6.19 and 6.20** illustrate the cumulative wind farm context.

Layout Evolution

2.5.5. The EIA process has included a number of specialist desk and site-based surveys in order to establish an account of existing conditions that in addition to providing a suitable baseline in which to use in the EIA also provide baseline information to inform the design process. The key technical and environmental constraints for the Proposed Development have been drawn together as shown on **Figure 2.5.** These technical and environmental constraints have informed the design of the layout. The layout evolution of the Proposed Development has also included a series of landscape and visual design objectives and site specific design considerations outlined in the following section.

2.5.6. The key design iterations for the Proposed Development are shown on **Figures 2.1 – 2.4**, Layouts A-G. Layout A is the Scoping Layout, from an early point in the design process, landscape and visual considerations strongly influenced the position, number and scale of turbines. This is most clearly evident between Layout A (Scoping) which included 10 turbines at 220 m to tip and Layout C which included 8 turbines at 200 m to tip.

2.5.7. In subsequent layout progression, the layout footprint has evolved more subtly ensuring that the landscape and visual considerations were maintained whilst the other environmental and technical constraints were also met before arriving at the Final Layout, as shown on **Figure 1.2** with the site infrastructure and tracks.

Landscape and Visual Design Objectives

2.5.8. The design of the Proposed Development has been designed to minimise the effect on the surrounding landscape and visual resource applying the criteria set out below, in particular the design has sought to minimise effects on the Great Glen, Fort Augustus and WLA 19. The design process has taken into account the following broad landscape and visual design objectives:

- To ensure the turbine layout appears as a simple form, which relates to the landscape character of the site and its surroundings.

- To ensure that the design and layout of the turbines expresses the function of the Proposed Development as an energy generator as clearly as possible by avoiding complexity and visual confusion.
- To ensure the turbine layout relates to the scale of the landscape in which it is located and relates well to the surrounding landform.
- To ensure a visually balanced composition of turbines is achieved against the landscape, skyline and in association with other cumulative windfarm developments.

2.5.9. In addition, the design of the Proposed Development focused on the following specific design objectives which have formed the basis of the landscape and visual design strategy for the Proposed Development.

- Reduce turbine visibility from within the area of Fort Augustus, scattered settlements and surrounding road network within the Great Glen.
- Create as compact a layout as possible to contain effects on wildness qualities to the northern corner of WLA 19 which largely aligns with areas where the BDOHL incurs baseline influence.
- Create as compact a layout as possible to minimise effects on the GWMR Scheduled Monument found in the Corrieyairack Pass.
- Minimise effects on the nearby Loch Lochy and Loch Oich SLA and Loch Ness and Duntelchaig SLA.
- Create a layout with a clear design rationale and simple appearance so it would be viewed as a compact and cohesive arrangement in longer distance views form the surrounding landscape and hilltops (including elevated sections of the Great Glen Way).
- Locate Proposed Development infrastructure (such as borrow pit search areas, construction compound, battery energy storage compound, access tracks and hardstands) to minimise landscape and visual impacts where possible, with key infrastructure elements located on or behind slopes that are relatively concealed from key visual receptors, see also **Figure 2.6** for site tracks design iteration.

2.5.10. Key design viewpoints utilised in the design process include – viewpoint 2 – General Wades Military Road; viewpoint 5 – Carn Dearg; viewpoint 6 – Fort Augustus, car park adjacent to A82; viewpoint 9 – A82 North of Fort Augustus; viewpoint 11 – Great Glen Way, Carn an Doire Mhoir; viewpoint 14 – Ben Tee; viewpoint 16 – A87, Loch Garry; and viewpoint 20 – Meallan Odhar. Comparative wireframes illustrating the differences between the Scoping and Final Layout of the Proposed Development are shown on **Figures 2.12a-h**.

Design Response

2.5.11. **Figure 2.7** shows the location of the Proposed Development to the Great Glen and the Loch Lochy and Loch Oich SLA and Loch Ness and Duntelchaig SLA. The locations of the Proposed Development turbines have been set further back from the steep southern slopes of the Great Glen (the leading ridgeline) in order to minimise visibility of proposed turbines from within it. This setting back has resulted in a greatly reduced zone of theoretical visibility (ZTV) across the Great Glen and the corresponding SLA designations, particularly from lower lying areas on Loch Ness and Loch Oich. In setting back the Proposed Development turbines from the leading ridgelines that contain the Great Glen, visibility from Fort Augustus, scattered settlement and the surrounding road network has also been greatly reduced.

2.5.12. A ZTV of the final layout of the Proposed Development is shown alongside the local landscape and visual context on **Figure 2.8**. A further ZTV has been prepared to show the comparison of theoretical visibility between the Scoping and Final Layout of the Proposed Development to illustrate the reduction of visibility in the local context resulting from the design evolution, see **Figure 2.9**.

2.5.13. The BDOHL and its steel lattice towers cross the same area in which the Proposed Development turbines are found, and it is its large scale infrastructure that strongly influences the sense of naturalness and remoteness in the northern parts of WLA 19. As can be seen on **Figure 2.10**, theoretical visibility of the Proposed Development largely sits within the extent of theoretical visibility of the BDOHL towers. In the northern of the WLA a consolidated level of theoretical visibility is shown for the BDOHL towers which is similar in extent to that shown for the Proposed Development in this area. The compact design of the Proposed Development has minimised potentially additional areas of visibility within WLA 19 and consequently minimised effects on the wildness qualities of this WLA.

Response to THC Criteria

2.5.14. **Appendix 6.4** of the EIA Report responds to the ten landscape and visual criteria set out in The Highland Council's Onshore Wind Energy Supplementary Guidance (OWESG). Each of the criterion are considered in respect of the potential effects that would arise as a result of the Proposed Development. The key aspects that relate to specific design considerations have also been drawn out in more detail below:

Criterion 1 'Relationship between Settlements / Key locations and wider landscape'.

- The setting back of proposed turbines from the leading ridgeline of the Great Glen reduces visibility within the Great Glen and for settlements in the area.
- As a result of this design response the Proposed Development will have no significant effects on any of the settlements within the study area and visibility from Fort Augustus settlements is minimal.

Criterion 2 'Key Gateway locations and routes are respected' and criterion 5 'The amenity of transport routes is respected'.

- The setting back of proposed turbines from the leading ridgeline of the Great Glen reduces visibility within the Great Glen and for key transportation routes in the area such as the A82 and B862.
- Whilst there is visibility of the Proposed Development turbines on the elevated section of the A87 to the west of Invergarry. The Proposed Development appears in the distant view in a broad upland, set back from steeper valley slopes, backdropped by a simple ridge of higher hills, factors which are attributable to the siting and design of the Proposed Development.

Criterion 3 'Valued natural and cultural landmarks are respected' and criterion 4 'The amenity of key recreational routes and ways is respected'.

- Most of the cultural landmarks in the study area occur in the surrounding straths and valleys, in particular within the Great Glen which has limited extent of visibility ensuring that the Proposed Development will have a limited effect. This is due to the setting back of proposed turbines from the leading ridgeline of the Great Glen.
- The exception occurs for the Corrieyairack Pass and GWMR which is in close proximity to the north of the Proposed Development. Significant visual effects are found for a section of this route, however, the affected section is short and already affected by the presence of the BDOHL in terms of setting.

Criterion 6 'The existing pattern of Wind Energy Development is respected'.

- The Proposed Development is compact and contained within a single upland landscape plateau which is surrounded by larger hills and uplands resulting in a ZTV that is not widespread, particularly within areas beyond approximately 10 km.
- Whilst significant effects have been found to occur within the northern part of WLA 19, these effects are localised and moderated by the existing influence of the BDOHL which already has an influence on the wild land qualities of a similar area that the Proposed Development would affect.

- The Proposed Development turbine layout has been designed to minimise significant effects on landscape and visual receptors by setting turbines back from the Great Glen and settled landscape of Fort Augustus and by arranging the turbines in a compact layout which for most views appears as a cohesive and consistently spaced grouping of turbines.
- As a result of the compact and well-designed layout the effects of visible aviation lighting have been minimised to very few locations where they would be visible by the local population including on nearby settlements and roads.
- The compact nature of the layout also results in a relatively small horizontal field of view and when viewing the Proposed Development from the wider landscape context, the Proposed Development would appear as a relatively small component of the very wide skyline formed by the broad upland plateau on which it is located.

Criterion 7 'The need for separation between developments and/or clusters is respected' and criterion 9 'Landscape setting of nearby wind energy developments is respected'.

- The Proposed Development lies within the same strategic context as the existing developments which have been clustered in this geographic area. By that rationale the 'need for separation' is respected. In relation to 'combined' cumulative effects, the LVIA concludes that the Proposed Development would not alter the current perception of a 'landscape with wind farms' characteristic currently experienced within the central highlands and in the context of the Great Glen. The addition of the Proposed Development would result in the redefining of a localised area of upland landscape (the site area), including the northern part of WLA 19 as a 'wind farm landscape character type' at the local level but not in the wider landscape context where the 'landscape with wind farms' characteristic would be maintained at the regional level and as such would not give rise to a perception of a 'wind farm landscape' in the central highlands.
- The Proposed Development would be experienced in the strategic landscape context as the existing wind energy development and as such would minimise the spread of wind energy development to other areas. Through its large scale and simplicity of pattern, the upland landscape of the site and surrounding landscape context has the capacity to accommodate the Proposed Development and on balance, therefore it is considered that the Proposed Development achieves a threshold whereby 'proposal relates well to the existing landscape setting', accepting that there would be an increased perception of wind turbines in the area.

Criterion 8 'The perception of landscape scale and distance is respected' and criterion 10 'Distinctiveness of Landscape character is respected'.

- The effect on perceptions of landscape scale and distance will be limited by the limited occurrence of receptors within the close to middle range of the Proposed Development and when in close proximity, will be moderated by the presence and influence of the BDOHL.
- The containment of the Proposed Development in this upland area, would associate it with an appropriate location where infrastructure and wind farm development already have an influence and help maintain the integrity and variety of the more sensitive landscape character areas.
- The siting and location of the Proposed Development within the upland plateau adjacent to existing infrastructure are therefore key factors for these criteria.

Landscape Design Response Summary

2.5.15. The design of the Proposed Development has evolved as part of an iterative process which has aimed to provide an optimal design in environmental, as well as technical and economic terms and landscape and visual mitigation measures have been a central consideration in the design process. The landscape and visual design strategy for the Proposed Development has had a substantial influence on the appearance of the Proposed Development within the immediate context of the Great Glen and surrounding landscape in particular the design has minimised effects on the Great Glen, Fort Augustus and WLA 19.

2.6. Summary

2.6.1. The final Proposed Development layout has been informed by a robust design iteration process, taking into account potential environmental, landscape and visual impacts and their effects, physical constraints, and health and safety considerations.

2.6.2. The final turbine layout and scale has been designed to maximise renewable energy generation from the site, whilst minimising potential impacts on the environment.

2.6.3. The EIA process has been an iterative one, so that potential effects identified throughout the design process could be avoided and overall impacts of the Proposed Development avoided or reduced.

2.6.4. This EIA Report is prepared to address the final layout selected for the Proposed Development. The final layout comprises eight turbines up to 200 m in height and associated access tracks, crane hardstandings, substation and energy storage facility, temporary construction compound, batching plant and borrow pit search areas. The final layout of the Proposed Development is described in detail in **Chapter 3: Project Description** and shown on **Figure 1.**

References

Scottish Government (2013). *Planning Advice Note (PAN) 1/2013.* Available at: https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/

Scottish Government (2017). *The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.* Available at: https://www.legislation.gov.uk/ssi/2017/101/contents/made

SNH (now Nature Scot) (updated 2015). *Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations* '. Available at: https://www.nature.scot/doc/guidance-spatial-planning-onshore-wind-turbines-natural-heritage-considerations-june-2015

SNH (now NatureScot) (2017). Siting and Designing Wind Farms in the Landscape. Version 3a. Available at: https://www.nature.scot/siting-and-designing-wind-farms-landscape-version-3a

THC (2016) HwLDP, Supplementary Guidance (SG): Onshore Wind Energy