

# **Strath Oykel Wind Farm**

## **Environmental Impact Assessment Report Non-Technical Summary**

April 2022

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# 1 INTRODUCTION

## Overview

- 1.1 This Environmental Impact Assessment (EIA) Report has been prepared by Energiekontor UK Ltd (hereinafter referred to as 'the Applicant') to accompany an application for consent to construct and operate the Strath Oykel Wind Farm (hereinafter referred to as 'the proposed development'). The Site is situated within Strath Oykel forest, in the Sutherland region of the Scottish Highlands, circa 1.85km south of the River Oykel, 2km south of the A837 and 1.5km south east of Doune (see Figure 1.1 – Site Location Plan).
- 1.2 As the proposed development has a generating capacity in excess of 50 MW, consent is required from Scottish Ministers under Section 36 of the Electricity Act 1989 (hereafter referred to as 'the Act'), in consultation with relevant statutory consultees including THC. In addition, a request is being made by the Applicant that planning permission is deemed to be granted under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended.
- 1.3 The application for consent is accompanied by an EIA Report which presents the findings of the EIA undertaken in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the Regulations') (as amended). The EIA Report includes a description of the proposed development, the location of the proposed development, and its design evolution; presents information on the identification and assessment of the likely significant environmental effects; and, where adverse effects are identified, measures to avoid, reduce, or remedy such effects are described.
- 1.4 The aim of the NTS is to summarise the content and main findings of the EIA Report in a clear and concise manner to assist the public in understanding what the potential environmental effects of the Proposed Development are likely to be. The full EIA Report (Volumes 1 to 5) provides a more detailed description of the proposed development and the findings of the EIA process.

## The Applicant – Energiekontor UK Ltd

- 1.5 Energiekontor UK Ltd is a renewable energy development company, active in the UK since 1999.
- 1.6 Energiekontor UK Ltd is part of the Energiekontor Group. The parent company, Energiekontor AG, was established in 1990 in Bremerhaven in Northern Germany. It has since grown to become one of the leading wind energy companies in Europe and is active in Germany, France, Portugal, the USA and the UK. The company has obtained consent for and built over 120 onshore wind farms in Europe and commenced construction of the first 'no-subsidy' wind farm in the UK, Witherwick II in East Riding, Yorkshire.

## Contacts for Further Information and Consultation

- 1.7 Following the introduction of the Electricity Works (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020 on the 24th of April 2020, the amendment has allowed a temporary relaxation to the requirement to provide hardcopies of the EIAR for public inspection. These measures were extended by the Scottish Government to cover the period to 30<sup>th</sup> September 2022.
- 1.8 Copies of the full EIA Report and its associated standalone documents can be found on the Energy Consents Unit website by searching for Strath Oykel Wind Farm. In addition, updates including a link to the case file are provided at the following web address: [https://www.energiekontor.co.uk/our-projects/Strath Oykel](https://www.energiekontor.co.uk/our-projects/Strath%20Oykel)
- 1.9 Alternatively, the Project Manager can be contacted for copies, as appropriate. There is no charge for provision of electronic documents or hard copies of the Non-Technical Summary on request.
- 1.10 Full printed copies can also be requested. Due to the size and cost of printed documents, charges for these are as follows:
- Volume 1: £50
  - Volume 2: £300
  - Volume 3: £500
  - Volume 4: £150
  - Volume 5: £500
- 1.11 Requests should be made to Calum Morris, Project Manager, Energiekontor UK Ltd, [calum.morris@energiekontor.com](mailto:calum.morris@energiekontor.com)
- 1.12 Any representations to the application may be submitted:
- via the Energy Consents Unit website at: [www.energyconsents.scot/Register.aspx](http://www.energyconsents.scot/Register.aspx);
  - by email to the Scottish Government Energy Consents Unit mailbox at [representations@gov.scot](mailto:representations@gov.scot); or
  - by post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU.

## 2 EIA METHODOLOGY

2.1 EIA is a process that identifies the potential environmental impacts (both beneficial and adverse) of a proposed development and proposes mitigation to avoid, reduce and offset any potential significant adverse environmental impacts.

2.2 The main activities in the EIA process can be summarised as follows:

- Definition of the project to be assessed;
- Description of the 'baseline' environment (i.e. the conditions that are likely to prevail at the commencement of the project);
- Definition of the scope of the assessment;
- Scoping and consultation with interested parties;
- Optimisation of the Proposed Development based on the consultation process;
- Prediction of the likely impacts of the Proposed Development;
- Evaluation of these impacts in terms of their potential significance;
- Description of the nature and effectiveness of measures / design evolution which could be adopted in order to mitigate significant adverse impacts;
- Identification of residual impacts;
- Submission of the EIAR and publicity.

### Approach to Technical Studies Undertaken

2.3 The EIA studies commenced at an early stage in the evolution of the application proposal.

2.4 At the outset, with the objective of avoiding or minimising potential environmental impacts, the findings of these baseline environmental studies played an important role in the design evolution of the Proposed Development. These studies defined the environmental sensitivities and constraints associated with the Proposed Development, the Site, and its surroundings.

2.5 The technical EIA studies have been undertaken in accordance with relevant guidelines and procedures.

2.6 The majority of assessments involved consultations with statutory and non-statutory bodies, desk-based research, site inspections and surveys, impact prediction and input of mitigation to the design, where appropriate.

2.7 The content and conclusions of the EIAR, which includes a clear, reasoned description of any potential adverse or beneficial impacts of the Proposed Development, are based on a comprehensive assessment undertaken with all information available at the time of writing.

### 3 PROJECT DESCRIPTION

- 3.1 The Site is situated within Strath Oykel forest, in the Sutherland region of the Scottish Highlands, circa 1.85km south of the River Oykel, 2km south of the A837 and 1.5km south east of Doune (see Figure 3.1 – Site Location Plan).
- 3.2 The site predominately consists of commercial forestry, hosting Sitka Spruce, Lodgepole Pine and Mixed Conifers. The topography of the Site generally rises from north to south, rising from areas of circa 100m above ordnance datum (AOD) to a high of circa 350m AOD in the south-western portion of the Site. The Site spans around 565 hectares (ha).
- 3.3 The landform of the site comprises north facing slopes below Beinn Ulbhaidh (496m AOD) to the south of the site. The site is covered with coniferous forest plantations and extends up to approximately the 350m contour that corresponds with the edge of the forest. The higher slopes of Beinn Ulbhaidh above the site are open moorland. The site extends downslope to the edge of the forest plantations above the minor road that runs along the south side of the strath, known as the Scree Road. The site boundaries to east and west are windbreaks through the forest or the edge of the plantation (to the north-west). The forest is at varied stages of development with some areas to the north-west (lower slopes) having been recently felled. There is a forest track that runs up the site from Inveroykel, past a small lochan, Loch Mhic Mharsaill, and exits the site area on the high south-west slopes.
- 3.4 The nearest settlement to the site is Rosehall/Invercassley, approximately 3km to the northeast of the site boundary, although a number of residential properties sit along the minor road to the immediate north of the site boundary.
- 3.5 There are a number of cumulative wind farm developments within 30km of the Site. Adjacent to the Site's southern boundary lies the Meall Buidhe scheme (planning) with Braemore Wind Farm (consented) and Rosehall Wind Farm (operational) lying to the northeast. Within 20km lies the Lairg (installed) and Lairg II (consented) wind farms, and within 30km lie the consented Coire na Cloiche, Beinn Tharsuinn, Novar and Novar extension wind farms. Figure 3.2 provides a more detailed overview of the cumulative wind farms within these respective boundaries to the Site.
- 3.6 The Proposed Development is illustrated on Figure 3.1 and would consist of the following principal components:
- 11 turbines;
  - Associated turbine compound areas including foundations and hardstanding areas for erecting cranes at each turbine location;
  - On-site tracks connecting each turbine;
  - An upgraded existing forestry track, with public access to benefit the Loch Mhic Mharsaill path;
  - An energy storage compound to store batteries with a 5MW capacity which would be within the construction compound footprint;
  - Underground cables linking the turbines to the substation;



- Up to three borrow pits for the extraction of stone on-site (indicated on Figure 3.1 as borrow pit search areas);
- A temporary construction compound including provision for onsite concrete batching; and
- On-site substation to provide a tee-in connection; and
- Forestry felling and restocking as proposed within Chapter 14: Forestry.

## 4 DESIGN EVOLUTION

4.1 Design evolution is an important component of wind farm design. The overall design layout principle of the proposed development has been to achieve a coherent and compact design, which minimises direct and indirect adverse effects on the local and wider landscape, while balancing commercial considerations and maximising energy production.

4.2 A key reason for the selection of this site was due to the proposed turbines being located within coniferous forestry on the upper slopes between the low-lying Strath Oykel in the north and the rounded summit of Beinn Ulbhaidh in the south. Beinn Ulbhaidh, together with adjoining hills to the south-east and west form a ridgeline between Strath Oykel and Strath Cuileannach which limits visibility to the south-west and south-east. In addition, the proposed development Site is within and surrounded by large areas of mixed and coniferous woodland plantation to the which limit both theoretical visibility and the numbers of likely visual receptors or people within 10km of the proposed turbines. The site was also subject to an initial GIS sifting exercise which set out broad constraints and provided a clear picture of those matters which should be considered in the design of the proposed development. Constraints noted as potentially relevant to the site included

- Scheduled Monuments;
- Gardens and Designed Landscapes;
- Listed Buildings;
- Conservation Areas;
- Special Protection Areas;
- Sites of Special Scientific Interest;
- Special Areas of Conservation ;
- Ancient Woodland Inventory;
- Carbon Rich Soils and Peatland;
- Areas of Panoramic Quality;
- National Scenic Areas;
- Core Paths;
- SPP Spatial Framework for Wind Energy;
- The pattern of settlement and distribution of residential properties in the vicinity of the site; and
- A 50m buffer applied to all watercourses located within the Site boundary.

4.3 The design process took place over a number of months and the proposed development has been progressively revised and refined during this time. The final design of the proposed development has been produced as a result of environmental surveys, design and pre-application meetings with statutory stakeholders and the findings of the EIAR.

4.4 A total of five design iterations were developed before the final iteration was reached resulting in a layout which is simple in composition, restrained in size and takes into account the constraints associated with the Site. The layout iterations are set out below:

### ***First Iteration – 17 Turbine Layout***

4.5 The First Iteration consisted of 17 wind turbines of up to 250m in height to blade tip, illustrated in Figure 4.1. The layout was based on land considered to be potentially available and the following environmental and technical considerations:

- Initial turbine ellipses used to position turbines.
- Applying a residential buffer of 1.2km between wind turbines and residential properties;
- Applying a watercourse buffer of 50m between wind turbines and watercourses; and;
- Taking cognisance of guidance within The Highland Councils Highland Wide Local Development Plan (HwLDP).

4.6 The first layout comprised a mix of 230m and 250m turbines, totalling 17. The turbines were placed on the southern part of the site. The turbines were placed to avoid site constraints. Watercourses were plotted, with a 50m buffer to ensure turbines were not placed on or near watercourses. The majority of turbines were placed within the central forestry section using the tightest spacing possible, to understand what a maximum potential layout may look like. This totalled 17 turbines, and Phase 1 peat depth was used where available to minimise effects. The completion of protected species surveys (except bats) suggested that the site was not host to a wide range of protected species, and design would not be adversely impacted by protected species.

4.7 With turbines necessarily becoming bigger via current technology availability, efficient and economics, this layout was deemed too visible and not viable, however lay the groundwork for following layouts.

### ***Second Iteration - 16 Turbines***

4.8 Illustrated in Figure 4.2, the Second Iteration comprised 16 wind turbines of up to 250 m to blade tip. This layout was the basis for the Scoping Opinion sought from The Energy Consents Unit (ECU) in March 2021 and was presented to the local community at the public exhibition held in May 2021. The layout maintained the buffers around watercourses and residential properties and also took account of ecological and ornithological onsite constraints. Following the survey works undertaken within the site boundary, the layout was amended to avoid areas of deep peat where possible. The angle of the slopes within the site boundary were also taken into consideration for construction purposes.

4.9 With the steep sloping topographic nature of the site, along with the scale of turbines proposed, it was considered necessary to remove the southernmost turbine. Given this was the highest turbine within the site. With the Dornoch Firth NSA located approximately 30 kilometres to the Southeast, views from this were respectfully considered due to the significance of this landscape designation. All turbines were therefore moved to lower

ground, of approximately 250m AOD, to avoid significant visibility from the NSA. Land much greater than the 250m AOD was therefore not considered suitable for development.

- 4.10 The Turbines were then all repositioned and spacing optimised to allow for an efficient layout which took accord of the landscape setting, NSA's and Wild Land, as well as respecting the on-site constraints. Where possible, turbines were placed close, or as close to existing forestry track infrastructure to avoid excess forest clearance.
- 4.11 The completion of protected species surveys (except bats) suggested that the site was not host to a wide range of protected species, and design would not be adversely impacted by protected species. The area around the large waterbody withing the centre of the site, Loch Mhic Mharsaill was avoided and not considered part of the developable area.
- 4.12 This layout was taken to Pre-App and Scoping, as well as being used as part of a public consultation exercise. The turbines comprised a mix of 230m, and 250m turbines, with the 4 southernmost turbines being 230m to help further minimise any potential impact on the Dornoch Firth NSA. The remaining 12 turbines were therefore proposed at 250m.

### ***Third Iteration – 13 Turbine Layout***

- 4.13 Illustrated in Figure 4.3, the Third Iteration comprised 13 wind turbines of up to 220m to blade tip and was presented to The Highland Council at a design workshop in August 2021. The Third Iteration was based on the feedback received from the scoping process, preapplication discussions and meetings undertaken with consultees.
- 4.14 Consultation with MOD and JRC identified conflicts with both Radar Line of Sight along the southern boundary and a telecoms link running therefore through the centre of the site, to which an appropriate buffer was agreed with JRC and applied. This therefore reduced the heights of the southern turbines to a height of 200m, whilst the turbines on the northern side of the site were repositioned to avoid conflicting with the identified telecoms link.
- 4.15 Northern turbines within the Scoping Layout were found to be especially dominant to locally sensitive key views running through the Strath, of particular note those from Rosehall, Invercassley and Altass. As such, these dominant turbines were reduced from 230m to 210m to appear less dominant and better fit with those turbines located behind. The reduction in height of Turbines 10 and 11 also helped to create a stronger alignment with the neighbouring proposed Meall Buidhe wind farm, located to the southeast of Strath Oykel.
- 4.16 Turbine height at this stage was revised mix of 220m, 210m, and 200m following the topographic logic that the middle of the site may be able to accommodate larger turbines.
- 4.17 Further consideration was also given to designing a layout which reflects the nature of the landscape. In addition, consideration was given to limiting the potential for the isolation of turbines, resulting in a layout which is evenly spaced when viewed from all directions.

## ***Final Iteration – 11 EIA Turbine Layout***

- 4.18 Following further consultation with The Highland Council and following further landscape assessment in accordance with The Highland Councils Onshore Supplementary Planning Onshore Wind Design Guidance, a further layout was produced.
- 4.19 Visually, it was clear that the 2 turbines north of the telecoms buffer, closest to the northern boundary of the site were visually dominant, and by removing these, the wind farm sits much better in the landscape, according with its character, whilst also reducing the dominance and impact of the proposal on views within the Strath.
- 4.20 Wireline assessments from the 3 key local viewpoints were then used to optimise the layout for best landscape fit. Based on the movement of turbines to lower ground, it was sought that a uniform approach to turbine tip height would assist in reducing views, from previous iterations in short to medium views and additional tweaks were made to minimise views from Rosehall and Altass as far as possible. With local settlements and key gateway locations benefiting from reduced views of the scheme due to wooded corridors and forested areas, the extent to which the proposed development would be prominent would be reduced by slightly lower turbines.
- 4.21 As such, turbines were reduced to 200m across the site in order to provide a better fit in the landscape and to reduce intrusion into the skyline from several viewpoints, with key locations only experiencing less prominent and transitional experiences of the development in accord with Criterion 1 & 2 of the Onshore Wind Guidance. The design and composition of turbines would ensure there would only be limited opportunity for settlements such as Rosehall to be 'encircled' by wind energy development due to the screening and enclosing effects of landform and trees, woodland and forestry. This revised also help improve the composition of the proposal in comparison with the proposed Meall Buidhe neighbouring scheme. The changes help demonstrate that the scheme fits' with the baseline pattern of other wind farm development in terms location within the Moorland Hills and Slopes LCT in accordance with Criterion 6 of the Onshore Guidance. This approach was discussing and seen as important from discussions with The Highland Councils planning and landscape officers.
- 4.22 The removal of the northern-most turbines then allowed the positioning of the remaining turbines, to go from a 4-row layout, down to a 3-row layout, whilst also reducing the southern row to be dropped again further in AOD to again help reduce visibility of the scheme on both Wildland and the NSA's. Overall, this created a much less visually dominant layout, respectful of constraints and landscape sensitivities.

## 5 RENEWABLE ENERGY AND PLANNING POLICY

### Introduction

- 5.1 The EIA Report is framed by the renewable energy and policy framework formed by a range of legislation, policy and guidance at UK, Scottish and regional level.
- 5.2 Relevant policy includes the following documents which together form the Development Plan for the consideration of this application at local authority level:
- The Highland-wide Local Development Plan (2012);
  - The Caithness and Sutherland Local Development Plan (CaSPlan)2018; and
  - Onshore Wind Energy: Supplementary Guidance (2016) with addendum (2017).
- 5.3 Whilst this EIA Report relates to an application for consent under Section 36 of the Electricity Act 1989 ('the Electricity Act'), deemed planning consent is also sought under Section 57(2) of the Town and Country Planning (Scotland) Act 1997 (as amended) (the TCPA). Section 57(2) of the TCPA requires all provisions of the Act to apply in relation to deemed planning permissions, meaning that section 25 applies in the determination of whether to grant deemed planning permission.
- 5.4 Section 25 of the TCPA states:
- "Where, in making any determination under the Planning Acts, regard is to be had to the development plan, the determination shall be made in accordance with the plan unless material considerations indicate otherwise."*
- 5.5 Whilst the Development Plan is the starting point for the decision making process, it must be considered in the context of both the policy hierarchy (governed by Scottish Government policy) which in turn is informed by the wider suite of Scottish, UK and international policy and law relating to renewable energy development. This includes emerging and adopted national policy, such as the National Planning Framework 3, the draft National Planning Framework 4 and Scottish Planning Policy.
- 5.6 The EIA Report is underpinned by other Scottish Renewable Energy Policy and Legislation, including the Climate Change (Scotland) Act 2009 and the more recent Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, as well as the Scottish Government's Energy Strategy, Onshore Wind Policy Statement, updated Energy Strategy Position Statement.
- 5.7 There are also several recent policy reports, papers and strategy positions which are relevant, which can be explored within Chapter 5 of the EIA Report, or the separate Planning Statement.
- 5.8 All policy and legislation relevant to individual environmental topics (e.g. policy and legislation regarding cultural heritage) can be found within individual subject chapters.

- 5.9 To maintain the impartiality of the EIAR, the chapter does not assess whether the proposed development would comply with the identified policies. A separate Planning Statement which assesses the conformity of the proposed development with the Development Plan and other material considerations has been submitted as a separate document in support of the planning application.

## 6 LANDSCAPE AND VISUAL

### Introduction

- 6.1 The LVIA has been undertaken in accordance with Guidelines for Landscape and Visual Impact Assessment 3 (GLVIA3) best practice guidance by chartered landscape architects at Wood Group UK Limited. The assessment process has encompassed the construction, operation, and decommissioning phases of the proposed development.
- 6.2 The proposed turbines would be located within coniferous forestry on the upper slopes between the low-lying Strath Oykel in the north and the rounded summit of Beinn Ulbhaidh (492m AOD) in the south. Beinn Ulbhaidh, together with adjoining hills to the south-east and west form a ridgeline between Strath Oykel and Strath Cuileannach which limits visibility to the south-west and south-east. In addition, the proposed development Site is within and surrounded by large areas of mixed and coniferous woodland plantation to the which limit both theoretical visibility and the numbers of likely visual receptors or people within 10km of the proposed turbines. Within approximately 10km theoretical visibility is mainly concentrated to the north-east covering parts of Strath Oykel and the Kyle of Sutherland between Rosehall and Linsidemore. Strath Oykel is a relatively broad strath to the north of the proposed turbines. To the west, the strath turns north-west and the landform narrows into a tighter glen near Loch Ailsh. To the north, across Stath Oykel, the River Cassley forms a narrow glen which widens as the glen heads north-west. At the confluence of the River Cassley and the River Oykel, the river body also widens and transitions into the Kyle of Sutherland which continues south-east towards Dornoch Firth. Visibility within 10km is therefore limited by strath and glen sides with coverage indicated along most of the south facing slopes to the north of Strath Oykel / Kyle of Sutherland and along the facing slopes to the east of Glen Cassley. To the north-west, the visibility transitions to the hills and slopes of the River Conacher glen to the south of Glen Oykel and to the south / south-east the visibility is contained by Beinn Ulbhaidh and the adjoining ridgeline which also continues to the west of the proposed turbines, containing visibility to within 4km in this direction. Very limited visibility to the south or south-east beyond the ridgeline, with visibility indicated on isolated summits.
- 6.3 Beyond 10km, visibility becomes fragmented and patchy and is mostly limited to the north, west and east. To the north, visibility continues along the facing slopes of Glen Cassley. To the west, patches of visibility continue in east-facing elevated areas to the south and south-west of Glen Oykel and along the River Conacher glen. To the east, visibility is indicated on the west facing slopes of Achany Glen. In other directions and further afield, visibility is limited to hill summits and sloping land orientated towards the proposed development that is not otherwise screened by intervening mountains and experienced as part of a much wider panorama and 360° views.
- 6.4 Essentially the Site is located in an area with potential for wind farm development, that which is made more suitable by the existing landscape character, forestry and landform of the area, which act to reduce the sensitivity of the Site and limit both the visibility and numbers of people close to the Site who might otherwise view the proposed turbines.



## Mitigation

- 6.5 The design of the proposed development has been reviewed against SNH's guidance *Siting and Designing Windfarms in the Landscape*, Version 3a, 2017 and the advice contained within the SNH *Landscape Character Assessment*, 2019, the relevant policies of the HwLDP and THC's *Onshore Wind Energy Supplementary Guidance*. As a result, the proposed development has been designed to reduce landscape, visual and cumulative effects and to reflect<sup>1</sup> the landscape characteristics and Special Landscape Qualities of the site location and its wider area which includes WLAs, SLAs and NSAs.
- 6.6 The proposed development has been designed to balance technical and project requirements with a need to safeguard the environment and satisfactorily accommodate the proposed development within its landscape setting.
- 6.7 All of the mitigation related to landscape, visual and cumulative effects is 'built-in' or embedded into the design of the proposed development with the exception of detailed reinstatement proposals for the borrow pits and a Landscape Plan for site access which would be provided as part of the construction phase of the development to integrate these features into their landscape setting. A Lighting Strategy for the aviation warning lights has been provided and assessed in TA 6.4 and TA6.6.
- 6.1 The 'simple' turbine layout is suitable for the underlying landform and simpler landscape character of the *Rounded Hills – Caithness and Sutherland* LCT and accords with general NatureScot guidance *Siting and Designing Windfarms in the Landscape*, Version 3a, 2017 for wind farm development to be simple, balanced and cohesive as well as being located within large-scale, broad and simple landscape character types. The proposed turbines have been cohesively located, slightly lower down within the landscape, set back from Strath Oykel and Kyle of Sutherland, to benefit from intervening screening and limit the visibility of the proposed turbines as well as reducing the horizontal and vertical extent of the proposed development from key views and particularly when perceived from Rosehall and the A837. The proposed development would create a simple, cohesive, balanced and clear design and visual composition that, to a reasonable degree, minimises excessive 'turbine clutter' in the form of uneven gaps / overlaps and outlying turbines.
- 6.2 Cumulatively, the nearby existing wind farms of Achany and Rosehall are located at a higher elevation appearing higher up within the hills. In most views, the existing wind farms appear visually separate from the proposed development. Notwithstanding that the proposed development fits with the baseline group of Achany and Rosehall (and Braemore consent) wind farms, this visual separation allows the proposed development to be perceived as a separate wind farm such that differences in turbine height, scale and rotation speed can be appreciated as distinctly separate, allowing both the existing / consented wind farms and the proposed development to be reasonably accommodated in the views.

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<sup>1</sup> The HwLDP Policy 61 advises that New developments should be designed to 'reflect' the landscape characteristics and special qualities identified in the Landscape Character Assessment of the area in which they are proposed.

## ***Significant Landscape, Visual and Cumulative Effects***

- 6.3 Significant landscape effects are restricted to an area of *Rounded Hills – Caithness and Sutherland LCT: South of Strath Oykel LCA* and *Strath – Caithness and Sutherland LCT: Strath Oykel LCA*, and a small area of the same Strath LCA due to the proposed Site entrance during the construction phase only. Significant visual effects are restricted to the views from part of Rosehall, short sections of the A837, A839 and three minor roads and six recreational routes. The proposed turbines have been cohesively located, slightly lower down within the landscape, set back from Strath Oykel and Kyle of Sutherland, to benefit from intervening screening and limit the visibility of the proposed turbines as well as reducing the horizontal and vertical extent of the proposed development from key views and particularly when perceived from Rosehall and the A837.
- 6.4 There would be no significant effects on the Assynt - Coigach NSA (or any other NSAs and WLAs within the study area) and no significant effects on other locally designated landscapes (SLAs), or their Special Landscape Qualities and integrity. There would also be no significant effects would result from the proposed aviation warning lights, due to the proposed Lighting Strategy. The exception to this is the WLQ's of WLA 34 would be significantly affected as a result of the un-mitigated aviation warning lights. These effects would affect the views out of the WLA from the southern lobes or extremities, within approximately 10km.

## 7 SOCIO ECONOMICS AND TOURISM

- 7.1 This chapter of the EIA Report assesses the likely significant effects of Strath Oykel Wind Farm (hereafter known as the 'Proposed Development') with respect to Socio-Economics, Land Use, and Tourism and Recreation.

### *Baseline*

- 7.2 The baseline has been established determine the existing socio-economic characteristics of the Site and its receptors, in terms of employment and economy, and tourism and recreation. Scotland's renewables sector has a turnover of over £5 billion, and employs over 20,0000 people. It is estimated that around 3,000 jobs are supported by the energy sector as a whole in the Highlands, which has an estimated turnover of over £760m.
- 7.3 The significance of tourism and recreation is greater in the Highlands than Scotland as a whole, and tourism expenditure will support a number of local jobs. Whilst there are a number of major tourist attractions in the Highlands, they are outwith the 45km study area identified, with smaller, localised attractions of relevance to the study area. Studies have found the impact of wind farms on tourism and recreation to be small, and opposition to renewable energy found to be very low.

### *Construction and decommissioning effects*

- 7.4 The proposed development would result in spend of between £2.5m and £5.5m in the Highland Council area during the construction phase, with 18-40 Full Time Employment direct jobs created and 45-100 FTE jobs supported in total. The construction and decommissioning effects on employment and economy and land use are found to be minor, beneficial, and not significant. Land use effects would not be significant, and only minimal and temporary disruption would occur during construction and decommissioning.
- 7.5 In terms of tourism and recreation, the temporary effects of construction and decommissioning have been scoped out.

### *Operation effects*

- 7.6 Operational effects on the economy have been scoped out of the assessment, due to the lower level of spend occurring on an annual basis than in the construction phase.
- 7.7 Assessment of effects on tourism and recreation at receptors were considered to be negative, with the majority of receptors (including 12 Munros and Corbetts) being not significant. Effects on the Silka Cycle trail (Core Path SU21.02) and the Ben Kilbreck Munro, would be significant when the Proposed Development is considered with the cumulative effect of other existing wind farms.

### *Mitigation*

- 7.8 In order to ensure that local communities share the socio-economic benefits which would be generated from the Proposed Development, an annual payment of £5,000 per MW to

a community benefit fund will be made over the lifetime of the project. This would equate to £12.7M during the 35 year operational period.

#### *Overall effects*

- 7.9 The assessments presented in this chapter demonstrate that the proposed development would result in a significant effect on recreational users of the Silka Cycle trail (Core Path SU21.02) and the Ben Kilbreck Munro, when the Proposed Development is considered with the cumulative effect of other existing wind farms. No other significant adverse effects would occur on recreational users or tourist attractions from the Proposed Development, either individually or cumulatively.
- 7.10 The Proposed Development would lead to beneficial economic effects, but these are not expected to be significant.

## 8 ECOLOGY

### Introduction

- 8.1 Chapter 8 of the EIA Report presents the findings and assessment of potential impacts in relation to the ecological features (flora and fauna) which may be impacted by the Proposed Development during the construction, operation, and decommissioning phases of the wind farm.
- 8.2 A baseline for the Proposed Development was established following desk study and field surveys to provide information on habitats and protected species which were present within the Survey Area and a buffer of 5km, where access permitted.
- 8.3 Baseline surveys established that one statutory protected site, River Oykel SAC, within 10km of the Proposed Development would potentially be impacted. Additionally, sensitive ecological features were identified which were subject to further assessment within the Chapter. Sensitive features included pine marten, water vole, otter, bats and FWPM. All other habitats and species were scoped out of further assessment. Reference to general mitigation, and good practice is included to avoid an offence being committed due to reckless killing or disturbance under the Wildlife and Countryside Act 1981 (as amended, Scotland).
- 8.4 Following good practice and embedded mitigation, and based on the data collected, it is not predicted that there will be any significant effects as a result of the construction phase of the Proposed Development. A CEMP will be created to detail mitigation measures to be followed during construction. The presence of an Ecological Clerk of Works (ECoW) will ensure the necessary advice is given to ensure legal compliance and to ensure the predicted effects do not worsen, resulting in an unexpected significant impact.
- 8.5 No significant impacts to pine marten, water vole, otter, or FWPM, or loss of habitats, are expected as a result of the operational stage. However, in the absence of mitigation, bats are likely to be significantly impacted. Following Nature Scot (2019) guidance, the implementation of a 76m (minimum) buffer between blade tips and plantation edge (which act as foraging corridor for bats) will reduce the impact to low flying bat species. Modification of the turbine blade angle ('feathering') and a post-construction monitoring plan to identify if mitigation has been successful, is likely to result in a non-significant to bat species.
- 8.6 A Species Protection Plan (SPP) will be created detailing good practice guidelines and post-construction in order to ensure the condition of the ecological features does not deteriorate over time as a result of the Proposed Development.
- 8.7 Overall, there is not expected to be any significant impacts to habitats or protected species as a result of the Proposed Development, providing best practice and embedded mitigation is followed.

## 9 ORNITHOLOGY

### Introduction

- 9.1 Chapter 9 of the EIA Report presents the findings and assessment of potential impacts in relation to the ornithological features (bird species) which may be impacted by the Proposed Development during the construction, operation, and decommissioning phases of the wind farm.

### Baseline

- 9.2 A baseline for the Proposed Development was established following desk study and field surveys to provide information on ornithological features which were present within the Survey Area and a buffer of up to 6km, where access permitted.
- 9.3 Baseline surveys established that no statutory protected sites, within 20km of the Proposed Development (with ornithological qualifying features) would likely be impacted. As a result, all ornithologically designated sites were scoped out of further assessment. Reference to general mitigation, and good practice measures are included to avoid an offence being committed due to reckless disturbance or killing under the Wildlife and Countryside Act 1981 (as amended, Scotland).

### Assessment

- 9.4 Following good practice and embedded mitigation, and based on the data collected, it is not predicted that there will be any significant effects as a result of the construction phase of the Proposed Development. An experienced Ornithological Clerk of Works or Ecological Clerk of Works (ECoW) with suitable ornithological experience will be appointed to the Proposed Development to ensure the necessary advice is given to ensure legal compliance and to ensure the predicted effects do not worsen, resulting in an unexpected significant impact.
- 9.5 No significant impacts to ornithological features, are expected as a result of the operational stage.

### Mitigation and Residual Effects

- 9.6 A Breeding Bird Protection Plan (BBPP) will be created detailing good practice guidelines both during and post-construction in order to ensure the condition of the ornithological features does not deteriorate over time as a result of the Proposed Development.
- 9.7 Overall, there is not expected to be any significant impacts to ornithological features as a result of the Proposed Development, providing best practice and embedded mitigation is followed.

- 9.8 It is recommended that a general best practise post-construction monitoring report is conducted to check what was predicted in the EIA baseline. This report should be in line with the most up to date best practise guidance, with a focus on white-tailed eagle.

## 10 GEOLOGY, HYDROLOGY AND PEAT

### *Introduction*

- 10.1 This chapter considers the potential effects of the proposed development on Geology, Hydrology and Peat.
- 10.2 Consultation relevant to the assessment was undertaken with the Highland Council (THC) NatureScot and SEPA who commented on aspects of methodology, sources of information, scope of assessment and cumulative development. SEPA has also provided advice on design aspects of the proposed development.
- 10.3 There are no geological SSSIs or Geological Conservation Review sites within the study area. The British Geological Survey digital geology mapping indicates that bedrock within the site boundary is comprised of igneous (volcanic) rock. This is generally classified as having limited to no groundwater potential.
- 10.4 Peat probe surveys were undertaken in 2020 and 2021. Overall, of the 878 peat probes advanced during all of the peat surveys, peat depth was recorded as less than 50cm at 580 probe locations (66.1%), defined as peaty or organo-mineral soils. At 158 (18%), peat probes were recorded at between 51cm to 100cm depth, defined as peat. Peat depths over 100cm were recorded at 140 probe locations (15.9%), defined as deep peat.
- 10.5 The entire site falls within the catchment of the River Oykel. The River Oykel Special Area of Conservation (SAC) is protected for its Atlantic salmon and freshwater pearl mussel features.
- 10.6 Loch Mhic-Mharsaill is located centrally within the site and covers an area of approximately 2 hectares.
- 10.7 There are three main watercourses which flow through the site boundary. Allt an Easain Duibh flows for approximately 3km from the southern site boundary in a northerly direction before discharging into Loch Mhic-Mharsaill. Allt Loch Mhic-Mharsaill flows north from Loch Mhic-Mharsaill for approximately 5km to the northern site boundary and then eventually discharges into the River Oykel. Allt na h-Innse Tioraim rises in the south-eastern edge of the site and flows generally north through east of the site for approximately 2.5km before discharging into the Allt Innis nan Damh which forms the eastern boundary of the site and which discharges into the River Oykel.

### *Mitigation*

- 10.8 A number of mitigation measures have been committed to in the assessment to ensure protection of peatland and watercourses. No significant potential effects on hydrological, geological and peat receptors have been predicted when taking account of mitigation by design and embedded mitigation. As such, all residual effects on hydrological, geological and peat receptors are assessed as being negligible or minor, and not significant.



## 11 SOCIO-ECONOMICS AND TOURISM

### Introduction

- 11.1 This chapter of the EIA Report assesses the likely significant effects of Strath Oykel Wind Farm (hereafter known as the 'proposed development') with respect to Socio-Economics, Land Use, and Tourism and Recreation.
- 11.2 The baseline has been established determine the existing socio-economic characteristics of the site and its receptors, in terms of employment and economy, and tourism and recreation. Scotland's renewables sector has a turnover of 2.8 billion, and 6,440 FTE employment. A higher number of the Highland's population of working age are economically active, compared to Scotland as a whole. Being a popular tourist destination, the Highlands has a higher percentage of employment in accommodation and food service industries than Scotland and England as a whole, and gross weekly pay in the Highlands is lower. It is estimated that 600 jobs are supported by the renewables sector in the Highlands, giving an estimated GVA of £15m.
- 11.3 The significance of tourism and recreation is greater in the Highlands than Scotland as a whole, and tourism expenditure supports a number of local jobs. Whilst there are a number of major tourist attractions in the Highlands, they are out with the 15km study area identified. Studies have found the impact of wind farms on tourism and recreation to be small, and opposition to renewable energy found to be very low.

### Construction and Decommissioning Effects

- 11.4 The proposed development would result in spend of between £14.2m and £74.9m in the Highland Council area during the construction phase, with 103-186 FTE direct jobs created. An additional 128-230 FTE jobs would be supported within the existing economy. The construction and decommissioning effects on employment and economy and land use are found to be minor, beneficial, and not significant. Land use effects would not be significant, only minimal and temporary disruption would occur during construction and decommissioning.
- 11.5 In terms of tourism and recreation, the temporary effects of construction and decommissioning have been scoped out.

### Operational Effects

- 11.6 There would be no change to land use during the operational phase. In terms of employment and economy, the proposed development would contribute between £1.18m and £4.6m per year to the local economy and provide between 22.9 and 90.6 direct FTE jobs.
- 11.7 Assessment of effects on tourism and recreation at receptors were considered negative, the Cape Wrath Trail and Eve's Road core path being not significant, effects upon Gleann

Cia-gig drive Road Heritage Path being moderate and potentially significant, and users of the Four Munros and four Corbetts, would experience significant adverse effects.

## **Mitigation**

- 11.8 In order to ensure that local communities share the socio-economic benefits which would be generated from the proposed development, an annual index linked payment of £5,000 per MW community benefit over the lifetime of the project - £11.7M during the 35 year operational period.

## **Overall effects**

- 11.9 The assessments presented in this chapter demonstrate that the proposed development would result in a possible significant effect on recreational/tourism users of Four Munros (Creag a' Mhaim, Gairich, Gleouraich and Spidean Mialach); and Four Corbetts (Beinn Loinne, Meall Dubh, Geal Charn and Meall na h-Eilde) as well as significant negative effects on recreational/tourism users of the Gleann Cia-aig Drive Road Heritage Path; and The Cape Wrath Trail (Great Glen option), but that there would be no other significant adverse effects from the proposals.
- 11.10 The proposed development would lead to beneficial economic effects, but these are not expected to be significant.

## 12 NOISE

### *Introduction*

- 12.1 Chapter 12 addresses the potential effects of construction, operational and decommissioning noise on noise sensitive receptors nearby.

### *Baseline*

- 12.2 Background noise has been measured at two receptor locations.

### *Construction effects*

- 12.1 Worst-case construction noise is shown to exceed acceptable daytime limits for a very brief period when forestry and access track construction activities are very close to receptors. The noise falls below acceptable limits when the activities are more than 134 m from receptors.

### *Operation effects*

- 12.2 Considered alone, the operational noise of the Proposed Development is shown to be below the ETSU-R-97 limit.
- 12.3 Considered cumulatively with other existing and planned wind farms, a simple modelling shows a small excess over the daytime limit. When wind direction is taken into account, this excess disappears.

### *Decommissioning effects*

- 12.4 Decommissioning is expected to be no noisier than construction.

### *Mitigation*

- 12.5 Construction will be scheduled, unless otherwise agreed, from Monday to Friday 07:00 to 19:00 and Saturday 07:00 to 13:00. Unattended plant equipment will be kept to a minimum.

### *Overall effects*

- 12.6 Construction noise will be audible at receptors for a short period, but at acceptable levels. Operational noise is predicted to be extremely low.

## 13 TRAFFIC AND TRANSPORTATION

### **Introduction**

- 13.1 The proposed development would take access from an upgraded junction located on the C1136. The turbine blades will be delivered using a blade lifting trailer and will access the site from the A9 via the A839, A837 and the C1136.

### **Baseline**

- 13.2 The Study Area comprises the following road links:
- The A9;
  - The A836 (from the Ardgay to Lairg);
  - The A839 (between the A9 at The Mound and Rosehall);
  - The A837 (Between its junction with the A839 at Rosehall and Oykel Bridge);
  - The B9176 (to the south of its junction with the A836); and
  - The C1136 (from the A839 junction through to the newly provided priority junction along the C1136, to the southwest of Rosehall village).
- 13.3 Traffic count data for the study area has been collected to develop baseline traffic flows for the proposed year of construction. In addition, the road network has been considered and active travel links reviewed where they would intersect with the proposed construction routes. Accident data has also been compiled.

### **Construction Effects**

- 13.4 The proposed development would lead to a temporary increase in traffic volumes on the study road network during the construction phase. Traffic volumes would decrease considerably outside the peak period of construction.
- 13.5 The maximum traffic impact associated with construction is predicted to occur in Month 4 of the programme. The greatest impact would occur at the site access where an additional 139 trips (43 Cars & Lights and 96 HGVs) are included to the network.
- 13.6 The assessment of significance suggests traffic flows interacting with the existing road users and Core Path users to the west of Lairg are considered significant effects, prior to the application of mitigation measures. The construction effects on residents in Lairg, Bonar Bridge and Ardgay are considered mainly Slight and not significant as there are located in the vicinity of an A Class road which is designed to accommodate HGV and higher traffic flows. Reduced speed limits are in place through these locations.
- 13.7 HGV traffic movements will increase to the west of Lairg. While the increases in flows are statistically significant, it is generally caused by low total flows along this network.

### **Operational Effects**

- 13.8 Traffic levels during the operational phase of proposed development would be one or two vehicles per week for maintenance purposes. Traffic levels during the decommissioning of the proposed development are expected to be lower than during the construction phase as some elements could be left in situ and others broken up on-site.

### **Decommissioning Effects**

- 13.9 The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 35 years on from the completion of the site. As elements of the development are likely to remain in-situ (such as cable trenches, access tracks, etc), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst case assessment and as such, no further assessment of the decommissioning phase has been considered at this point in time and has been scoped out of the assessment.

### **Mitigation**

- 13.10 The movement of ALL traffic would require road enhancement works, primarily located to the west of Lairg. These will include the following measures which THC may wish to make permanent to the benefit of all road users:
- To include the lengthening and widening of A837 and A839 passing places to allow 6m passing width and to accommodate two HGV tipper vehicles and designed in accordance with THC standards;
  - To provide additional passing places to THC standards within the limits of the existing road adoption at locations to be agreed with THC local road managers;
  - The construction of a new bridge over the River Oykel that could be adopted by THC to replace the temporary structure that the C1136 uses to cross the river currently;
  - Improved road signage along the routes to the west of Lairg; and
  - Strengthening of fragile sections of road and resurfacing where required and identified by THC officers.
- 13.11 A detailed Construction Traffic Management Plan and proposals for a Core Path Management Plan have also been developed to offset and improve the effects of construction traffic on the network.

### **Overall Effects**

- 13.12 The construction period is transitory in nature and all impacts would be short lived and temporary. No significant residual effects are predicted during construction.
- 13.13 The assessment confirms the effects would be minor in nature and they would be not significant. The traffic effects are transitory in nature. No long-lasting detrimental transport or access issues are associated with the construction phase of the proposed development.

## 14 FORESTRY

### Introduction

- 14.1 this forestry chapter addresses the responses to the Scoping Opinion, in particular to those of Scottish Forestry, the Scottish Government agency responsible for forestry policy, support and regulations. The significant relevant policy is the Scottish Government's policy on Control of Woodland Removal.

### Baseline

- 14.2 the forestry study area within the proposed development consists of a single privately owned forest consisting of unplanted ground, native woodland and 581 ha coniferous plantation.

### Construction Effects

- 14.3 the proposed development requires felling of some 14.73 ha for permanent infrastructure with a further 10.21 ha of management felling. The permanent infrastructure felling is permanent woodland loss and will be mitigated through compensatory planting within the Site. Temporary felling will be replanted in situ. No woodlands listed in the Ancient Woodland Inventory are affected by the development.

### Operation Effects

- 14.4 the remainder of the forest areas will continue to be maintained, felled and replanted in accordance with approved forest plans. On this basis, there would be no operational effects on forestry or woodland

### Decommissioning Effects

- 14.5 at the time of decommissioning, any previously forested areas designated as restoration may be replanted with trees in keeping with the Proposed Development's decommissioning plan.

### Mitigation

- 14.6 compensatory planting is calculated in accordance with the Scottish Government's Policy on Control of Woodland Removal. compensatory planting arrangements shall be provided for at least 14.73 ha of woodland. Some 27.93 ha have been identified on Site as potential new planting areas.

### Overall Effects

- 14.7 The residual construction effects on forestry are a reduction of planted ground within the single forest unit, in total by 14.73 ha. However, when considering the proposed mitigation

measures, including compensatory planting, the overall magnitude of impact would be negligible and therefore Not Significant.

## 15 OTHER ISSUES

### Introduction

15.1 This chapter considers potential effects and features which have been scoped out of full assessment but raise pertinent points for the proposed development or link to other areas of assessment contained within this Volume. The topics covered are:

- Aviation Lighting, which includes a summary of the approach taken and layout agreed with the Civil Aviation Authority (CAA);
- Results of the carbon calculator exercise to understand and report on the carbon payback of the proposed development, and;
- Telecommunications.

### Aviation Lighting

15.2 To fulfil all MoD and Civil Aviation Authority specifications for aviation lighting, the site must be fitted with infra-red and visible aviation lights. As such, of the 11 turbines that make up the proposed development, nine will be fitted with MoD compliant infra-red lighting (which is invisible to the naked eye and so does not have any impact on the surrounding environment), while eight will be fitted with visible aviation lighting.

15.3 Visible aviation lights are only operated at their maximum brightness when visibility is less than 5km in all directions, such as during thick mist or heavy rain. In all other conditions, which account for approximately 95% of the time, visible aviation lights are operated at 200cd, or 10% of their maximum brightness. This means that maximum brightness is only required for approximately 5% of the time.

### Telecommunications

15.4 Telecommunication links across the Site were investigated as part of initial constraint investigations. One telecommunications link was identified within the Site boundary, located in the north-east. The direction of the links then travel north-west, out with the Site boundary.

15.5 The closest turbine lies approximately 250m to the south of the telecommunication links.

15.6 Given the distance between the links and the turbine envelope, it is considered that the turbines are located suitably out with the telecoms links and therefore will not result in any effects upon these assets.

### Carbon Calculator

15.7 Climate and Carbon Balance

15.8 This assessment uses the Scottish Government's Carbon Calculator for wind farms on peat to estimate the benefit of displacing conventionally generated electricity in the grid



compared to the predicted direct and indirect emissions of carbon resulting from the construction and operation of the Proposed Development over its lifetime, including losses of stored carbon from felled forestry and affected peatland. The Carbon Calculator provides an estimate of the carbon payback time for the Proposed Development.

- 15.9 The results of the Carbon Calculator for the Proposed Development show that the Proposed Development is estimated to produce annual carbon savings in the region of 55,316 tonnes of CO<sub>2</sub>e per year, and lifetime savings of over 1.9 Mt of CO<sub>2</sub>e through the displacement of grid electricity, based on the current average grid mix.
- 15.10 The assessment of the carbon losses and gains has estimated an overall loss of just over 176,000 tonnes of CO<sub>2</sub>e, mainly due to embodied losses from the manufacture of the turbines, provision of backup power to the grid and losses due to forestry felling, which should be minimised through the provision of on-site energy storage. Ecological carbon losses account for only 8% of the total emissions resulting from the Proposed Development construction and operation.
- 15.11 The estimated payback time of the Proposed Development, using the Scottish Government Carbon Calculator, is estimated at 3.2 years, with a minimum/maximum range of 2.4 to 4.5 years. The carbon intensity of the electricity produced by the Proposed Development is estimated at 0.023 kgCO<sub>2</sub>e/kWh. This is below the outcome indicator for the electricity grid carbon intensity of 0.05 kgCO<sub>2</sub>e/kWh required by the Scottish Government in the Climate Change Plan (2018-2032) and therefore the Proposed Development is evaluated to have an overall beneficial effect on climate change mitigation.

### ***Mitigation***

- 15.12 Following implementation of mitigation through design and best practice as well as the mitigation measures identified above, it is considered that there would be no significant effects on aviation, telecommunications, and climate change.

## 16 SUMMARY

- 16.1 This NTS has summarised the impacts and resultant effects arising as a result of the proposed development.
- 16.2 The EIA for the proposed development has been carried out in accordance with regulatory requirements and guidance on good practice. The proposed development has been designed following full baseline surveys and a range of technical and stakeholder inputs, including from the public. Design has aimed to minimise effects where possible.
- 16.3 As identified within the EIAR, Significant landscape effects are restricted to an area of Rounded Hills – Caithness and Sutherland LCT: South of Strath Oykel LCA and Strath – Caithness and Sutherland LCT: Strath Oykel LCA, and a small area of the same Strath LCA due to the proposed Site entrance during the construction phase only.
- 16.4 Significant visual effects are restricted to the views from part of Rosehall, short sections of the A837, A839 and three minor roads and six recreational routes.
- 16.5 With the use of mitigation as described in detail within the EIA Report and respective technical chapters, it is not considered likely that significant effects would occur in relation to any other environmental discipline.