

STRATHY SOUTH WIND FARM **SECTION 36C**

EIAR Volume 1:
Non-Technical Summary

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Introduction

SSE Generation Limited ('the Applicant') has submitted an application to the Scottish Ministers under Section 36C ('the S36C application') of the Electricity Act 1989 ('the 1989 Act').

Introduction

The S36C application proposes the variation of the Section 36 consent granted by the Scottish Ministers on 27 April 2018 under the 1989 Act ('the 2018 Consent'), for the construction and operation of the Strathy South Wind Farm T39 Layout ('the Consented Scheme'). The proposed wind farm development that is the subject of the S36C application, which encompasses all of the proposed variations to the Consented Scheme is hereinafter referred to as 'the Proposed Varied Development'. The Applicant is also seeking a direction from the Scottish Ministers that planning permission be deemed granted¹.

The purpose of the application for variation of the 2018 Consent is to vary the Description of the Development to change the specification of the 39 turbines by increasing the maximum tip height from 135 m to up to 200 m and capacity from 133 MW to 208 MW. The increase in turbine height would lead to a consequent increase in rotor diameter (162 m), land take to accommodate larger turbine foundations and also the regulatory² requirement for turbine lighting, as the turbines would exceed 150 m. The Applicant has also reviewed the on-site access tracks and removed sections of track to avoid the deepest areas of peat where possible.

Strathy South Wind Farm has been subject to three principal design iterations over the life of the project and the layout has evolved to respond to feedback from consultees and an extensive amount of information collated over years of surveys on and surrounding the site. The three principal iterations are summarised below under reference to the environmental impact assessment reports relating to each layout:

- Original 2007 Scheme (77 turbines) - 2007 Environmental Statement (ES);
- Modified 2013 Scheme (47 turbines) - 2013 ES Addendum; and
- Consented Scheme (39 Turbines) - 2014 Further Information Report (FIR).

¹ Under section 57(2) of the Town and Country Planning (Scotland) Act 1997

² The Air Navigation Order 2016

³ Scottish Government (2018) *Climate Change Plan - the Third Report on Policies and Proposals 2017-2032 (RPP3)* (February, 2018 updated April 2018)

⁴ Scottish Government (2017) *Scottish Energy Strategy: The future of energy in Scotland*

Further Information

The Environmental Impact Assessment Report (EIAR) and other documents lodged in relation to the S36C application will be available to view on the Scottish Government's portal at www.energyconsents.scot. Application documents, including the EIAR, will also be available to view on an application website: <https://www.sserenewables.com/onshore-wind/in-development/strathy-south>

A copy of the S36C application and the EIAR would normally be available for public inspection in person at a local location. At the time of submission, due to restrictions in place relating to the Covid-19 pandemic, it has not been possible to make hard copies of the S36C application and EIAR available.

In addition to the EIAR being available for viewing on the websites above, copies of the EIAR may be obtained from SSE Generation Limited (contact: SSE Generation, FAO Laurie Winter, Inveralmond House, 200 Dunkeld Road, PH1 3AQ) or at a charge of £350 for a hard copy (at the Applicant's discretion), or electronic USB copies are available free of charge. The EIAR is available in other formats if required. For details, including costs, contact Laurie Winter at laurie.winter@sse.com or the address above.

The Proposed Varied Development would make a valuable contribution to legislated climate change targets and government policy objectives whilst increasing local economic benefits.

Needs Case

Wind turbine technology is continually evolving with more productive and efficient designs coming on to the market place each year. The increase in tip height and rotor diameter would substantially increase the energy output and associated carbon dioxide (CO₂) emission reductions from the site (increase in CO₂ emission savings from the Proposed Varied Development compared to the Consented Scheme would be 69% over the operational life).

The Scottish Climate Change Plan 2018³ outlines a new target of reducing greenhouse gas emissions by 66% by 2032. The Scottish Energy Strategy⁴ also includes a new 2030 target for the equivalent of 50% of Scotland's heat, transport and electricity consumption to be supplied by renewable sources.

This application can draw substantial support from Scottish Government policy in the respect that the Proposed Varied Development would make a valuable contribution to legislated climate change targets and government policy objectives whilst increasing local economic benefits.

Taking account of the policy context, there are a number of benefits associated with the proposed increase in turbine tip height, including:

- it would make a considerably more valuable contribution to the achievement of the UK and Scottish Government decarbonisation targets by increasing the zero-carbon energy yield;
- improvement of the commercial viability of the project increasing the energy yield and alternative turbines available to the Applicant, as the wind farm is designed to operate in the absence of government subsidies;
- increase in energy production would lead to an equivalent increase in homes supplied with clean, renewable energy and an increase in CO₂ reduction, making a valuable contribution to the Scottish Climate Change Plan targets;
- the contribution to public finances through non domestic rates would increase in line with the increased installed megawatt (MW) capacity, thus increasing the total contribution to funding for public services in Scotland; and
- MW based community benefit fund would build upon the existing Strathy North Joint Community Fund.

Commenting on the Application

If you would like to comment on the application, comments can be submitted via the Energy Consents Unit (ECU) website at www.energyconsents.scot/Register.aspx; by email to The Scottish Government, ECU mailbox at representations@gov.scot or by post, to The Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds of representation.

Written or emailed representations should be dated, clearly stating the name (in block capitals), full return email and postal address of those making representations. Only representations sent by email to representations@gov.scot will receive acknowledgement. All representations should be received not later than the date falling 30 days from the date of the last published notice.

EIA Process and Methodology

The aim of the Non-Technical Summary (NTS) is to summarise the content and main findings of the EIAR in a clear and concise manner to assist the public in understanding what the environmental effects of the Proposed Varied Development are likely to be. The full EIAR provides a more detailed description of the Proposed Varied Development and the findings of the EIA process.

Overview

As the changes to the Consented Scheme proposed through the S36C application may have significant adverse effects on the environment, an EIA was required to be carried out. The EIAR is provided to present information on both the direct and indirect significant effects of the Proposed Varied Development on the environment. It also provides information on where it is considered that the likely significant effects on the environment of the Proposed Varied Development would differ from the Consented Scheme.

Baseline

The 2017 EIA Regulations⁵ require the EIAR to include a description of “*the main respects in which the developer considers that the likely significant effects on the environment of the proposed varied development would differ from those described in any EIA report or environmental statement, as the case may be, that was prepared in connection with the relevant section 36 consent.*” On that basis, the first step in the methodology used for the EIA has been to establish and provide a summary of the likely significant effects of the Consented Scheme against the current baseline conditions at the site.

The EIAR has been prepared with reference to baseline information collected and presented as part of previous reports (such as the 2013 ES Addendum and the 2014 FIR), subject to updates to that baseline where this was deemed to be necessary and proportionate.

The EIAR then provides an assessment of the effects of the Proposed Varied Development in the context of the same baseline or updated baseline where appropriate. Finally, the EIAR provides a description of the main respects in which the effects of the Proposed Varied Development differ from those identified for the Consented Scheme. This approach ensures that the EIAR provides an assessment of the Proposed Varied Development as a whole and describes any additional effects associated with the proposed variations when compared to the summary of the likely significant effects of the Consented Scheme.

⁵ Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)

Consideration of Reasonable Alternatives

The only reasonable alternative considered in the context of the Proposed Varied Development is the ‘do nothing’ alternative that would involve implementation of the 2018 Consent. In the ‘do nothing’ alternative scenario, the 2018 Consent would remain unchanged. The main reasons for deciding to proceed with the Proposed Varied Development are set out in the Needs Case above.

A comparison of the predicted residual environmental effects between the Consented Scheme and the Proposed Varied Development is presented in Chapter 3: Comparative Environmental Assessment (EIAR Volume 2), a summary of which is provided under ‘Assessment Of Environmental Effects’ below.



Description of the Proposed Varied Development

The application site ('the site') covers an area of approximately 1,785 hectares (ha) and lies approximately 12 km south of Strathy Village in Sutherland. (Figure 1). The site is located within the Strathy South conifer plantation, a non-native conifer plantation. No residential properties are located within the site.



Key

 Site Boundary

Figure 1: Site Location

Description of the Proposed Varied Development

Infrastructure

The Proposed Varied Development would include the following key components:

- Up to 39 turbines, each with a maximum tip height of 200 m and rotor diameter of up to 162 m, and associated crane pads;
- Turbine foundations and hardstandings;
- Access tracks;
- Watercourse crossings;
- Substation;
- Up to seven borrow pits;
- Temporary lay down areas;
- Temporary construction compounds;
- Temporary batching plant; and
- Welfare building.



Table 1 on page 7 provides a summary of the proposed changes between the Consented Scheme and the Proposed Varied Development. Figures 2 and 3 on pages 8 and 9 show the Consented Scheme and Proposed Varied Development respectively.

Construction Activities

The construction phase is anticipated to be approximately 24 months. The envisaged construction hours of work would be 0700 to 1900 Monday to Friday, and 0700 to 1200 on Saturday. However, to ensure that optimal use is made of fair-weather windows and daylight, or at critical periods within the programme, it could be necessary to work out with these hours and on Sundays. In particular it could be necessary to make use of low wind speed weather windows during turbine installation.

A Construction Traffic Management Plan (CTMP) would be written in consultation with The Highland Council (THC) to avoid and reduce effects associated with construction traffic during working hours. A Construction Environmental Management Plan (CEMP) would be implemented during construction to avoid, reduce or control any associated adverse environmental effects.



Operational Management and Maintenance

The Proposed Varied Development has been designed with an operational life of 50 years. Turbines would operate automatically responding via control systems to changes in wind speed and direction. The Proposed Varied Development would be connected to a remote control room, as well as an on-site control building, from where output and key alarms would be monitored.

Routine maintenance and servicing would be carried out on each turbine approximately every six months, in addition to the initial service three months after commissioning. On average two people would take five days to service each turbine. At regular periods, oil and components would require changing and blade inspections would be required, increasing the service time per turbine. There would be regular safety inspections, maintenance of tracks, fencing and other infrastructure.

Table 1: Summary of Key Changes between the Consented Scheme and the Proposed Varied Development

Infrastructure Element	Consented Scheme	Proposed Varied Development	Summary of Key Change
No. of Turbines	39	39	No change
Tip Height	Up to 135 m	Up to 200 m	Up to 65 m increase
Rotor Diameter	Up to 104 m	Up to 162 m	Up to 58 m increase
Hub Height	83 m	119 m	Up to 36 m increase
Access Track Length	32.0 km	31.4 km	Deletion of up to 0.5 km of track ⁶ .
Turbine Foundations & Hardstanding (per turbine)	Temporary infrastructure land take: 0.098 hectares (ha). Permanent land take: 0.122 (ha).	Temporary infrastructure land take: 0.080 hectares (ha). Permanent land take: 0.250 (ha).	Additional 0.113 ha land take (combination of temporary and permanent) per turbine.
Borrow Pits	Four borrow pits	Up to seven borrow pits	Up to three additional borrow pits have been identified in the northwest of the site.
Lighting	The 2018 Consent conditions required aviation infra-red lighting would be fitted to turbines and omni-directional red lighting would be fitted to turbines at the cardinal points.	Aviation lighting requirements for turbines up to 200 m to be agreed with consultees. For the purposes of the EIA a 'worst-case' of all 39 turbines being lit with 2,000 candela visible red lighting has been presented.	The EIAR for the S36C application is based on the worst case scenario that assumes all turbines would be required to be lit; however the precise requirements for aviation lighting will be subject to the outcome of consultation and agreement with the Civil Aviation Authority (CAA).
Substation	The switching station as consented was located to the south of the spur road to T9.	The proposed substation and associated temporary laydown area are now located to the west of T4.	The Consented Scheme's switching station has been replaced by a substation to accommodate the additional capacity. The location has been revised to allow for the increased substation size (150 m x 200 m) and temporary laydown area.
Laydown Areas	Two laydown areas; one located to the north of T43 and one within the borrow pit to the east of T8.	Two laydown areas; one located to the north of T43 and one located to the east of the track between T11 and T17.	The laydown area previously located within the borrow pit to the east of T8 has been relocated to the east of the track between T11 and T17.
Construction Compounds	A construction compound located to the west of the track between T4 and T8.	One construction compound located to the east of T4.	Relocated north and east from consented location.
Permanent Met Masts/ LiDAR	Three permanent met masts	Two permanent LiDAR.	LiDAR equipment would replace the consented met masts.
Concrete Batching Plant	One 100 m x 100 m concrete batching plant to the north of T43.	One 100 m x 100 m batching plant located to the east of the track between T11 and T17.	Dimensions of batching plant remain as consented; location has been revised.
Watercourse Crossings	15 watercourse crossings	16 watercourse crossings	One new watercourse crossing has been identified.
Yellow Bog Road	Permitted for 4x4 vehicle usage	Proposal to upgrade Yellow Bog Road for initial construction phase.	Upgrades to Yellow Bog Road would be contained within the non-qualifying habitat either side of the existing track to allow for mobilisation of plant to the western side of the site.

⁶ Please note that this is for the Applicant's 'preferred route' the 'alternative route' would result in 32 km of track, so the same as the Consented Scheme.

Description of the Proposed Varied Development

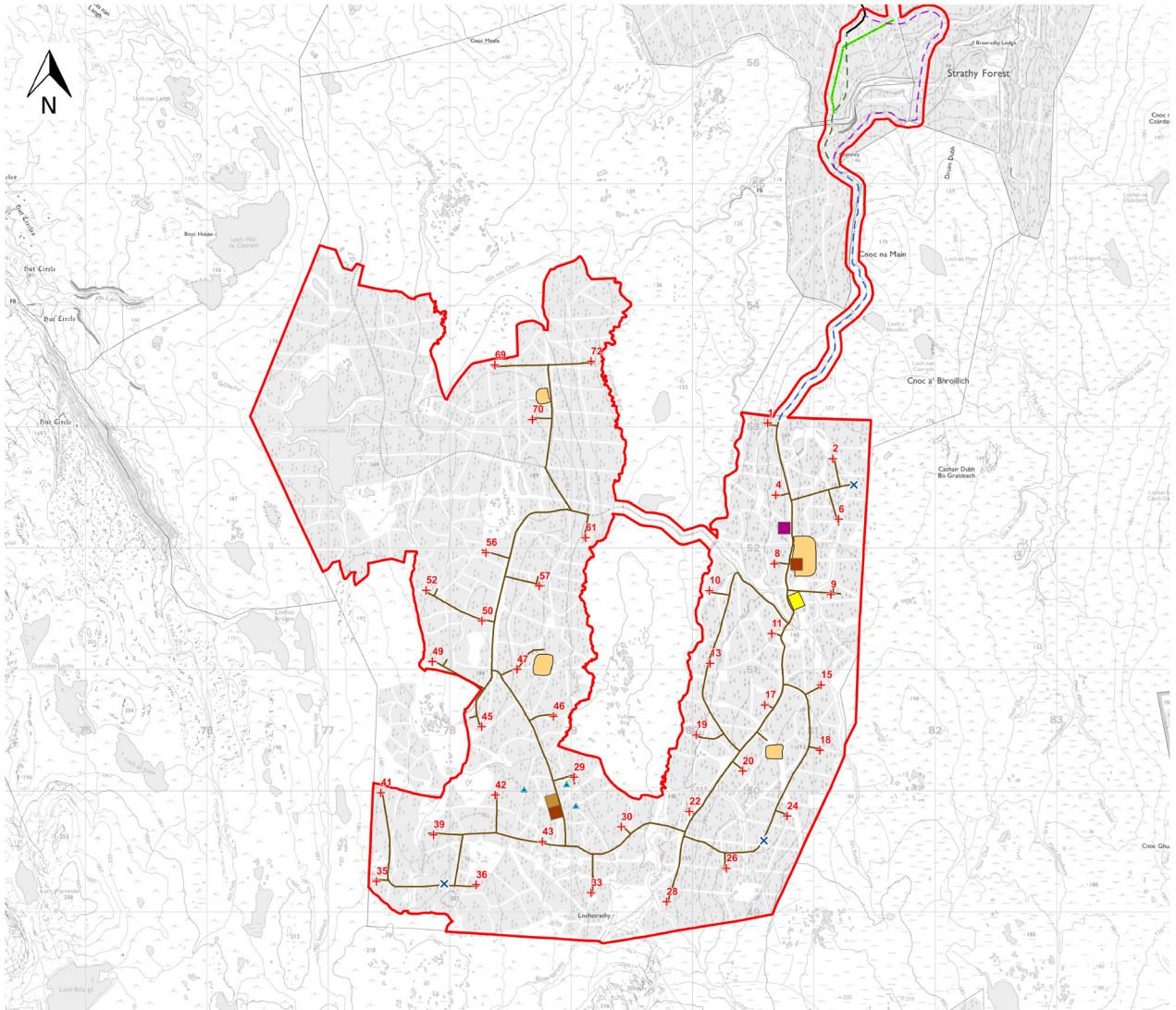
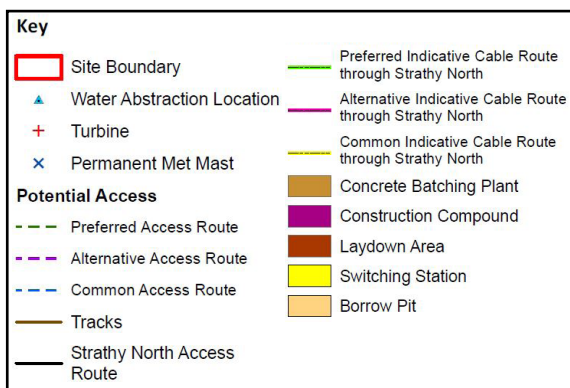


Figure 2: Consented Layout



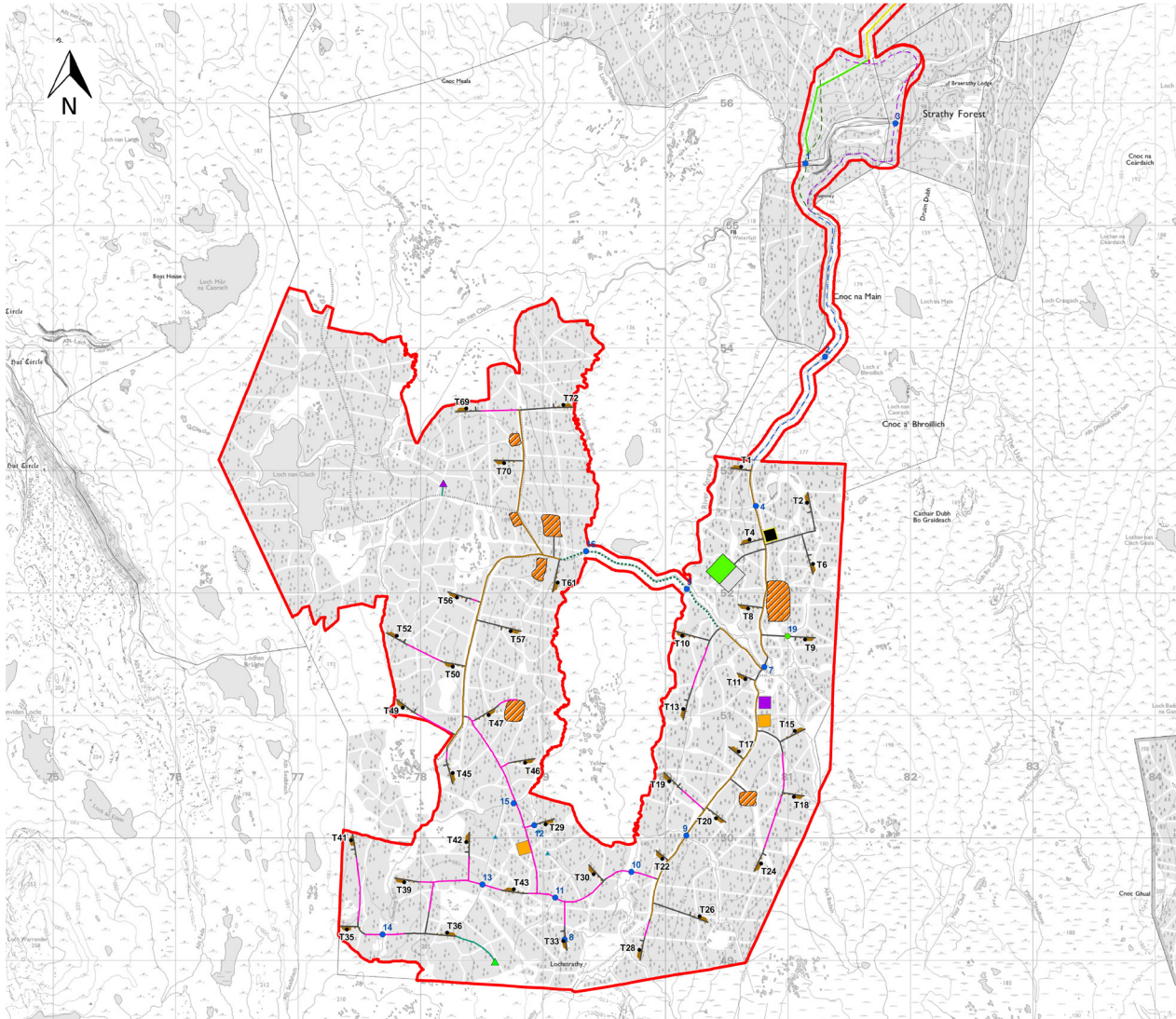
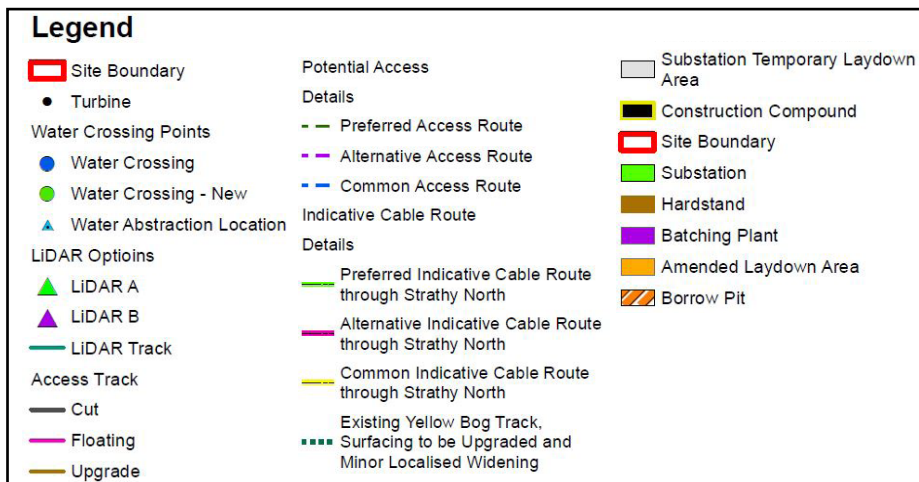


Figure 3: Proposed Varied Development



Residues and Emissions

With the implementation of the CEMP, no significant residues or emissions have been identified during the construction phase.



The EIA has considered the potential for residues and emissions associated with the construction and operation of the Proposed Varied Development, including consideration of water, air, noise and vibration, light, soil pollution and waste. All discharges would be managed in accordance with relevant guidance and regulations. With the implementation of the CEMP, no significant residues or emissions have been identified during the construction phase. As a result of the increased height of the turbines specified for the Proposed Varied Development, a scheme of aviation lighting would be required. This would result in potential significant adverse effects on visual amenity in the hours of darkness.



Assessment of Environmental Effects

The EIA process is designed to identify the potential significant effects that the Proposed Varied Development could have on the environment.

Comparative Assessment

A summary of the comparative assessment between the Consented Scheme and Proposed Varied Development is shown in Table 2 on p.12. Further detail is provided in Chapter 3: Comparative Environmental Assessment (EIAR Volume 2). The table provides a summary of the difference between the likely significant residual effects predicted for the Consented Scheme and the Proposed Varied Development, where the change is material.

The following topics did not result in a material change between the likely significant residual effects predicted for the Consented Scheme and the Proposed Varied Development and therefore are not included in Table 2:

- Ornithology (all development phases);
- Noise (all development phases);
- Cultural Heritage (all development phases);
- Roads and Traffic (all development phases);
- Ecology (non-avian) (all development phases);
- Soils and Water (all development phases);
- Socio-Economics, Recreation and Tourism (all development phases); and
- Other Issues: Climate Change and Carbon Balance (cumulative construction and cumulative operational phases).



Key

Construction	Operation	Cumulative Construction	Cumulative Operation	Construction, Operation and Decommissioning
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Table 2: Summary of Comparative Assessment

Topic	Difference between likely significant effects predicted for Consented Scheme and Proposed Varied Development
Landscape and Visual Amenity	<p><i>Landscape receptors</i></p> <ul style="list-style-type: none"> Additional significant effects identified for localised parts of Wild Land Area (WLA) 39: East Halladale Flows WLA. Effects across the wider WLA are considered to be Minor. This would represent a material change.
	<p><i>Visual receptors</i></p> <ul style="list-style-type: none"> Significant effects were identified for four receptors as a result of the Consented Scheme. Additional significant effects resulting from the Proposed Varied Development were identified for one viewpoint and localised parts of two routes and represents a material change. However, when viewed in the context of the overall scheme they would represent a small change to the overall effects.
	<p><i>Landscape receptors</i></p> <ul style="list-style-type: none"> Additional significant effects were identified for localised parts of WLA 39: East Halladale Flows, effects across the wider WLA would be considered to be Minor. This would represent a material change. In the absence of an agreed scheme of mitigation, aviation lighting effects would result in significant effects. The Applicant is engaging with aviation stakeholders and the CAA to agree an aviation lighting solution which could result in a reduced visual effect.
	<p><i>Visual receptors</i></p> <ul style="list-style-type: none"> Significant effects were identified for four receptors as a result of the Consented Scheme. Additional significant effects resulting from the Proposed Varied Development were identified for one viewpoint and localised parts of two routes and represents a material change. However, when viewed in the context of the overall scheme they would represent a small change to the overall effects. In the absence of an agreed scheme of mitigation, aviation lighting effects would result in significant effects. The Applicant is engaging with aviation stakeholders and the CAA to agree an aviation lighting solution which could result in a reduced visual effect.
	<p>Significant construction effects resulting from the Proposed Varied Development were identified for one viewpoint and this would be considered a material change. However, when viewed in the context of the overall scheme this represent a small change to the overall effects.</p> <p>Significant operational effects resulting from the Proposed Varied Development were identified for one VP and this would be considered a material change. However, when viewed in the context of the overall scheme this represents a small change to the overall effects.</p>
Other Issues: Climate Change and Carbon Balance	<p>Influence of the Proposed Development on Climate Change</p> <ul style="list-style-type: none"> The results of the carbon calculator for the Consented Scheme concluded that the carbon payback period would be expected to be 1.1 years while it would be 1.5 years for the Proposed Varied Development. The estimated expected carbon dioxide saving from fossil fuel mix electricity generation would be 228,808 tCO₂yr⁻¹ for the Consented Scheme and would be 387,420 tCO₂yr⁻¹ for the Proposed Varied Development. The main difference in the carbon payback period is due to the increase in losses of carbon dioxide associated with the Proposed Varied Development compared to the Consented Scheme. However, estimated expected carbon dioxide savings for the Proposed Varied Development are 69% more than those for the Consented Scheme.

Assessment of Environmental Effects

Likely Significant Residual Effects of the Proposed Varied Development

The EIA process is designed to identify the potential significant effects that the Proposed Varied Development could have on the environment. The EIA considered the environmental impacts across a range of factors, as required by the EIA Scoping Opinion. Following the assessment and implementation of mitigation (where required) no predicted significant residual effects were identified for the following topics:

- Ornithology;
- Roads and Traffic;
- Soils and Water;
- Climate Change and Carbon Balance.
- Noise;
- Ecology (non-avian);
- Socio-Economics, Recreation and Tourism; and

Proposed mitigation includes the implementation of a number of site-specific plans including the CEMP, CTMP, the Strathy South Outline HMP and Peat Management Plan (PMP).

The conclusions of the EIA were that predicted significant residual effects (after the implementation of mitigation) were only identified for landscape and visual and for cultural heritage (significant cumulative effects only). A summary of these predicted significant residual effects is set out below. Further detail is provided in Chapters 4-12 of the EIAR (EIAR Volume 2).

Landscape and Visual Amenity

The vast majority of landscape effects resulting from the Proposed Varied Development would not be significant. This is largely due to the proximity of the Proposed Varied Development to Strathy North wind farm which already results in landscape and visual effects within the wider area and thereby reduces the sensitivity of the landscape and visual resource to additional wind farm development. Significant effects would be limited to an area within close proximity of the site, affecting relatively discrete parts of the landscape within 15 km of the turbines of the Proposed Varied Development.

The significant visual effects (excluding the effects of turbine lighting) would be limited to changes in the views from Ben Griam Beg; Loch nan Clach Geala; Bettyhill; A836 west of B871; localised parts of the A836 (Tongue / NC500 / Cycle Route 1); and Scottish Hill Track 344: Strath Halladale (Trantlebeg) to Strathy. The visual assessment has demonstrated that of the few residential areas where views would be theoretically obtained, no significant visual effects would occur.

The Proposed Varied Development would result in a significant cumulative effect to one viewpoint, Ben Griam Beg, located approximately 8.6 km to the south, where turbines would appear closer, larger and more prominent than the other wind farm cumulative developments leading to an increased prominence of wind turbines within northward views. All other cumulative effects to viewpoints, routes and residential receptors would be not significant.

It was concluded that lighting every turbine would result in significant effects during low light conditions and the hours of darkness. However, the Applicant is engaging with aviation stakeholders to agree a lighting solution which could result in a reduced effect.

Assessment of Environmental Effects

Likely Significant Residual Effects of the Proposed Varied Development

Cultural Heritage

Ben Griam Beg is a fort which is designated as a Scheduled Monument. The surroundings in which a heritage asset is experienced (the 'setting') is important. Assessment of the cumulative impact on the Scheduled Ben Griam Beg identified seven cumulative wind farm developments, largely located to the north and northwest of the fort. The addition of the Proposed Varied Development would increase the proportion of the view occupied by wind farm development and would also be located in closer proximity than the other cumulative developments. It would also constitute a notable alteration to the wide and long, currently uninterrupted, northern view from Ben Griam Beg across the peatland to the north coast and North Sea. A moderate and significant adverse cumulative effect on the setting of the fort is anticipated. No other significant cumulative effects have been identified.



Summary

Environmental constraints and considerations have been taken into account in the site layout and design. As a result, most of the potentially significant effects have been avoided or reduced.

The EIAR reports on the potential for significant effects under the following headings:

- Landscape and Visual;
- Ornithology;
- Noise;
- Cultural Heritage;
- Roads and Traffic;
- Ecology (non-avian);
- Soils and Water;
- Socio-Economics, Recreation and Tourism; and
- Other Issues (which included Air, Climate, Human Health, Major Accidents and/or Disasters, Shadow Flicker).

The EIAR has identified that the Proposed Varied Development would result in some residual significant effects only in relation to landscape and visual and cultural heritage. No residual significant effects are predicted for ornithology, noise, roads and traffic; ecology (non-avian); soils and water; socio-economics, recreation and tourism; and other issues including climate change.



Please note that all images of turbines are indicative only and construction images taken from the adjacent Strathy North Wind Farm and Gordon Bush Wind Farm.

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