ACHANY EXTENSION WIND FARM

EIA Report Volume 1: Non-Technical Summary

July 2021



For a better world of energy

NON-TECHNICAL SUMMARY

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Preface

This document forms the Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report for Achany Extension Wind Farm located approximately 4.5 kilometres (km) north of the village of Rosehall and 11km west-north-west of Lairg, in the Highlands of Scotland. The Proposed Development would comprise a generating station, consisting of a wind farm with up to 20 wind turbine generators (WTG) and a maximum tip height of up to 149.9 metres (m), supported by ancillary development.

The Proposed Development would be an extension to the operational Achany Wind Farm. The installed generation capacity of the existing operational Achany Wind Farm is 38 megawatts (MW) and the total installed capacity of the Proposed Development alone, whilst dependent on the rated power of the turbine model procured, is anticipated to be in excess of 80MW. Therefore, the combined capacity of Achany Wind Farm and the Proposed Development is anticipated to be in excess of 118MW.

The EIA Report accompanies an application by SSE Generation Limited (hereafter referred to as "the Applicant") to the Scottish Ministers for consent under Section 36 of the Electricity Act 1989 and deemed planning permission under Section 57 of the Town and Country Planning (Scotland) Act 1997. The EIA Report has been prepared in accordance with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, as amended (hereby referred to as the "EIA Regulations") and The Electricity Works (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020.

The EIA Report comprises seven volumes:

- Volume 1: Non-Technical Summary;
- Volume 2: Main Report;
- Volume 3: Figures;
- Volume 3A: Landscape and Visual Photomontages (NatureScot Methodology);
- Volume 3B: Landscape and Visual Photomontages (The Highland Council Methodology);
- Volume 4: Technical Appendices; and
- Volume 5: Confidential Annex.

Additional documentation that has been submitted with the Section 36 application for consent includes:

- Planning Statement;
- Pre-Application Consultation Report; and
- Cover letter.

A copy of the EIA Report is available on the application website at https://www.sserenewables.com/achanyextension/ or on the Scottish Government Energy Consents website at www.energyconsents.scot.

Copies of the EIA Report may be obtained from SSE Generation Limited (contact: SSE Renewables, FAO Karen Anderson, 1 Waterloo Street, Glasgow, G2 6AY or via email at karen.anderson@sse.com) at a charge of £450 for a hard copy, or on electronic USB or DVD free of charge. Copies of this Non-Technical Summary are also available free of charge.

Any representations in respect of the application may be submitted via the Energy Consents Unit website at www.energyconsents.scot/Register.aspx; by email to The Scottish Government, Energy

Consents Unit 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.

Representations should be dated, clearly stating the name of the project (in block capitals), full return email and postal address of those making representations. 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, although Ministers may consider representations received after this date. Additional information which is submitted by the Applicant will be subject to further public notice in this manner, and representations to such information will be accepted as per this notice.

The EIA Report will be advertised on the project website¹ and in the following newspapers upon submission of the application:

- Edinburgh Gazette;
- The Herald; and
- The Northern Times.

¹ https://www.sserenewables.com/achanyextension/

1. Introduction

1.1 Overview

- 1.1.1 SSE Generation Ltd (SSEG), hereafter referred to as "the Applicant", is proposing to construct an extension to the operational onshore Achany Wind Farm to maximise the renewable electricity generation potential at the Site. The proposed wind farm, called 'Achany Extension Wind Farm' and referred to in this report as 'the Proposed Development', is located on adjoining land to the north-west of the existing Achany Wind Farm. The location of the Proposed Development is shown by the "Site Boundary" on Figure 1: Location Plan.
- 1.1.2 The application for Section 36 consent has been prepared by SSE Renewables Developments (UK) Limited (SSE Renewables), "the Developer", on behalf of the Applicant. Deemed planning permission under Section 57(2) of the Town and Country Planning Act 1997, as amended, is also sought. The Applicant holds the necessary generation licence required to operate the Proposed Development.
- 1.1.3 The Proposed Development comprises a generating station, consisting of a wind farm with up to 20 Wind Turbine Generators (WTGs), supported by ancillary development, and would be an extension to the 19 WTGs of the operational Achany Wind Farm. The maximum tip height of the proposed WTGs is 149.9 metres (m). Access to the Proposed Development would be achieved by utilising the existing track infrastructure in place for the operational Achany Wind Farm, accessed from the A839.
- 1.1.4 The Proposed Development, as a generator of renewable electricity from wind, could contribute to legislated climate change targets and government policy objectives by adding a minimum of 80MW of installed renewable onshore wind capacity.

1.2 Background

- 1.2.1 There was a previous proposal to construct a wind farm in the area. An application to construct and operate a 26 turbine wind farm and associated works on Glencassley Estate, 'Glencassley Wind Farm', was submitted to the Scottish Governments Energy Consents Unit in 2012. The Highland Council North Planning Applications Committee recommended to raise no objection to this application in 2013, however, it was refused by Scottish Ministers in 2015, on the grounds of perceived impacts on the Assynt Coigach National Scenic Area (NSA) and on the Reay-Cassley Wild Land Area (WLA).
- 1.2.2 As the Site offers excellent potential for a wind farm development due to its wind resource, proximity to existing wind development and in context with the climate emergency² and legislated climate change targets, the Applicant revisited the potential opportunity to locate WTGs in the area of the previous application boundary.
- 1.2.3 In doing so, the Applicant has sought to review and address the grounds for refusal of the Glencassley Wind Farm application, taking previous concerns raised about the prominence and proximity of turbines in views from the nearby Assynt Coigach NSA and to core areas of wild land, into consideration. The proposed WTGs are therefore located approximately 2km closer to the operational Achany Wind Farm in comparison to the

² On 28th April 2019, Scotland's First Minister declared a climate emergency.

previous Glencassley Wind Farm proposal. As a result, it is considered that the theoretical visibility of the Proposed Development would be largely limited to areas where there are already existing external influences on the WLA, including existing wind turbines in close proximity, other features and associated infrastructure.

1.3 Environmental Impact Assessment

- 1.3.1 This EIA Report is required to accompany the Section 36 Application under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as the Proposed Development comprises a wind farm with a generation capacity greater than 50MW and for which Section 36 consent is required.
- 1.3.2 This EIA Report is therefore submitted in support of the application for consent and assesses the likely significant environmental effects of the Proposed Development. In terms of the application for Section 36 consent, deemed planning permission under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997, as amended, is also sought.

2. Site Selection and Design Evolution

2.1 Site Selection

- 2.1.1 The Proposed Development is situated adjacent to the operational Achany Wind Farm, has an excellent and proven wind resource, as well as existing access tracks and other infrastructure connecting to the local road network, which would be used during construction and operation. This revised location would minimise requirements for new tracks and other infrastructure.
- 2.1.2 Whilst a previous application to construct and operate a 26 turbine wind farm and associated works on Glencassley Estate was refused by Scottish Ministers in 2015, due to impacts on the Assynt Coigach NSA and on wild land, in the context of the Climate Emergency and increased renewable energy generation targets, the Applicant decided to review and optimise the 2012 Glencassley Wind Farm design. As such, the project proposals have evolved considerably since the previous application, taking previous concerns raised about the prominence and proximity of turbines in views from the nearby Assynt Coigach NSA and to wild land, particularly the Reay-Cassley Wild Land Area (WLA), into consideration (discussed further in Section 2.3).
- 2.1.3 The Proposed Development is not situated in any areas designated for nature conservation, albeit there are European and National designated sites in close proximity (see Figure 2: Site Context). The closest statutory landscape designation is the Assynt Coigach NSA, approximately 10km to the north west. The Proposed Development is located within the southern fringes of the Reay-Cassley Wild Land Area (WLA34). Although WLAs are not designated landscapes, these areas are given protection within the Planning System through Scottish Planning Policy (SPP) (Scottish Government, 2014). Potential effects on the qualities of the WLA have been given due consideration during the design iteration process.
- 2.1.4 Taking cognisance of the Climate Emergency, renewable energy targets and the location of the Proposed Development on adjoining land to the Applicant's operational Achany Wind Farm, developing an extension to Achany Wind Farm is seen as an opportunity to expand an operational wind farm site, increasing operating efficiency whilst minimising additional environmental effects when compared to a new site for a project of a similar size.

2.2 Design Evolution

- 2.2.1 The starting point for the design evolution process was to take account of the previous concerns and points of objection, whilst also considering the opportunities presented by moving the Site further from the NSA and towards the existing Rosehall and Achany Wind Farm developments.
- 2.2.2 Initial site optimisation and early design work focused on moving the Site further from the Assynt Coigach NSA towards the southern margins of the Reay-Cassley WLA, with the aim of reducing the potential for significant landscape and visual effects as far as possible and to ensure that the integrity of both the NSA and the WLAs were preserved.
- 2.2.3 During the design evolution process, careful consideration was given to the height of turbines, particularly in relation to landscape and visual matters, and likely significant effects on the NSA and WLAs. Although turbines of up to 200m were considered, these

would require a visible lighting scheme to comply with requirements of the Civil Aviation Authority (CAA). It was determined that the maximum turbine tip height would be 149.9m, meaning that no visible lighting would be required and infrared lighting could be installed to meet CAA requirements.

2.2.4 A series of design workshops allowed the project team to discuss and develop the evolving layout to ensure that site specific constraints were fully considered, reviewed and revisited. This included consideration of turbine locations, tracks, and all other infrastructure requirements. In addition to landscape and visual considerations, other notable considerations during the design evolution process included minimising effects on sensitive habitats and deeper areas of peat where possible, protected species, ornithology, maintaining sufficient buffer distances to natural watercourses and cultural heritage. This extensive process ensured that likely significant environmental effects were minimised as far as practicable, prior to reaching a design fix in March 2021.

3. Description of the Proposed Development

3.1 Development Components

- 3.1.1 The Proposed Development would include the following key components (see Figure 3):
 - Up to 20 no. Wind Turbine Generators (WTGs) of up to 149.9m tip height with internal transformers;
 - Crane hardstanding and associated laydown area at each wind turbine location;
 - On site access tracks (of which approximately 17.3km are new access tracks and approximately 6.6km are existing tracks where upgrades may be required to facilitate delivery of the wind turbine components);
 - A new on-site substation, welfare building and store;
 - Potential extension to the existing operations building at Achany Wind Farm to accommodate additional staff;
 - A network of underground cabling to connect each wind turbine to the on-site substation;
 - A LiDAR unit to collect meteorological and wind speed data, and associated hard stand; and
 - Any associated ancillary works required.
- 3.1.2 In addition to the permanent components, the construction phase would comprise the following temporary facilities:
 - Site compound areas, including welfare facilities, site cabins, and parking;
 - Batching plant facilities for temporary concrete batching plants;
 - Temporary telecommunications infrastructure; and
 - Borrow pits, comprising both new and reworking of borrow pits used for Achany Wind Farm.
- 3.1.3 The Proposed Development would utilise existing access tracks constructed for Achany Wind Farm to access the Site, including the existing Achany Wind Farm site entrance off the A839. A Traffic Management Plan (TMP) would be prepared and agreed with THC and Transport Scotland (TS) prior to works commencing.
- 3.1.4 It is estimated that the maximum permanent development footprint of the Proposed Development would be approximately 13.29Ha. During the construction period it is estimated that a further 10.95Ha would be temporarily required which would be reinstated following completion of the construction works.
- 3.1.5 A Habitat Management Plan (HMP) will be implemented as part of the Proposed Development to compensate for the loss of blanket bog habitat as a result of the Proposed Development. The core aim of the habitat management plan is to restore and enhance degraded or modified blanket bog and wet heath habitats both within the Site boundary and in other areas of Glencassley Estate.

3.2 Construction Programme and Environmental Management

3.2.1 A typical construction period for a wind farm of this size is estimated to be 18 months, dependent on weather and ground conditions experienced at the Site.

- 3.2.2 On-going consultation with the local community during the construction of the Proposed Development would be an important consideration for the Applicant and the Principal Contractor. A community liaison group would be set up by the Applicant to provide the local community with information about key construction activities and a mechanism by which concerns from within the local community could be shared and discussed.
- 3.2.3 Prior to construction works, sensitive ecological areas, and other specific sensitive locations (e.g. watercourses) would be marked out as appropriate on site by specialist advisers in order to avoid unnecessary encroachment and protect sensitive areas during construction.
- 3.2.4 A Construction Environmental Management Plan (CEMP) would be implemented during construction. The principal objective of the CEMP is to provide information on the proposed infrastructure and to aid in avoiding, minimising and controlling adverse environmental impacts associated with the Proposed Development. Furthermore, the CEMP aims to define good practice as well as specific actions required to implement mitigation requirements as identified in the EIA Report, the planning process and / or other licensing or consenting processes.
- 3.2.5 The Principal Contractor would have overall responsibility for environmental management on the Site. The services of specialist advisors, such as the project Environmental Clerk of Works (ECoW) would be retained as appropriate and called on as required to advise on specific issues. Other factors which would be controlled during construction of the Proposed Development include:
 - Waste management;
 - Health and Safety; and
 - Site reinstatement.

3.3 Site Decommissioning

3.3.1 Following the anticipated operational lifespan of the Proposed Development, anticipated to be 50 years, detailed decommissioning proposals would be established and agreed with relevant authorities prior to commencement of decommissioning activities.

4. EIA Process and Methodology

4.1 Baseline

- 4.1.1 EIA is a process which considers how a proposed development will change existing environmental conditions and what the consequences of such changes would be. These changes are measured against the existing conditions at the Site, known as the baseline.
- 4.1.2 The baseline scenario for the Proposed Development was established from:
 - Site visits and surveys;
 - Desk-based studies;
 - Review of existing information;
 - Modelling;
 - Review of relevant national and local planning policies;
 - Consultation with relevant statutory consultees; and
 - Identification of sensitive receptors.

4.2 Assessment of Environmental Effects

- 4.2.1 Assessment of environmental effects is achieved through comparison of the sensitivity of environmental features against the magnitude of change likely to be brought about by the Proposed Development.
- 4.2.2 The sensitivity of the baseline conditions was defined according to the relative importance of existing environmental features within or in the vicinity of the Site, or by the sensitivity of receptors which would potentially be affected by the Proposed Development. Criteria for the determination of sensitivity or of importance were established based on prescribed guidance, legislation and / or statutory designation. Where no published standard exists, each technical chapter (Chapters 7-16) of the EIA Report sets out professional judgements which underpin applied significance.
- 4.2.3 The magnitude of change for each effect has been identified and predicted as a deviation from the baseline conditions. This takes into account:
 - The degree to which the environment is affected (e.g. whether its quality is enhanced or impaired);
 - The scale or degree of change from the baseline;
 - Whether the effect is temporary or permanent, indirect or direct, short term, medium term or long term;
 - Any in-combination effects; and
 - Potential cumulative effects.
- 4.2.4 The sensitivity and magnitude of change are taken into account to determine whether the effect upon an environmental receptor is "significant" in the context of the EIA Regulations. This varies between receptors, and there is no general definition of what constitutes significance therefore the assessment of significance or the importance of effects ultimately involves professional judgement based on values which reflect environmental, social and economic criteria.
- 4.2.5 The assessment of significance also considers the extent to which mitigation and enhancement will reduce or reverse adverse effects. Against this background, the

environmental assessment for the Proposed Development has been progressed through the identification of four levels of impact as appropriate:

- Major;
- Moderate;
- Minor; and
- Negligible
- 4.2.6 Major and moderate effects are generally considered to be significant in the context of the EIA Regulations. Minor and negligible effects are not considered significant. Occasionally, where it assists in describing the level of impact, a "Not Significant" category is also used. These terms are generally used to define the level of impact arising for the environmental factors. Where different terms or levels of effect to the above are used, they are defined within the methodology section for the topic area as appropriate.
- 4.2.7 Where significant effects are identified, mitigation measures are proposed to prevent, reduce or remedy these effects, beyond that already taken into account as normal good practice (i.e. embedded mitigation). Each technical chapter (Chapters 7-16) of Volume 2 of the EIA Report details the measures recommended to mitigate any identified significant effect, and a summary of the recommended mitigation measures is provided in Volume 2, Chapter 18: Schedule of Mitigation.
- 4.2.8 Any remaining effects following implementation of available mitigation measures are known as "residual effects". An assessment of residual effects is undertaken within each technical chapter (Chapter 7-16) of Volume 2 of the EIA Report, where residual effects have been identified. The residual effects assessment takes into account the mitigation specified in the EIA Report, to identify the remaining (residual) effects with this mitigation implemented. The residual effects are discussed for each potential effect and a significance level identified.
- 4.2.9 Cumulative effects are also assessed within each technical Chapter of the EIA Report in accordance with the EIA Regulations. Cumulative impact assessment is concerned with identifying situations where a number of potential effects from separate projects could combine to cause a significant impact on a particular resource.
- 4.2.10 For the Proposed Development, cumulative impacts are considered with other wind farms in the vicinity. These include operational wind farms, those under construction, consented sites and those whereby applications for consent have been submitted and are yet to be determined. Potential wind farm sites at the scoping stage (i.e. those that have not submitted a formal application) are not typically considered, given the uncertainty associated with such sites.

5. Scoping and Consultation

5.1 Scoping

- 5.1.1 An EIA should describe the likely significant effects of a proposed development on the environment. Scoping of potential issues against the physical and operational aspects of a proposed development provides a basis for ensuring that the assessment of environmental effects is appropriately limited to issues of genuine potential significance. This ensures a proportionate approach focused on likely significant effects that have not already been considered. Consultation and engagement with stakeholders early in the process, with advice and input from key consultees being sought at the early stages of a project, helps greatly to inform decisions about the Proposed Development.
- 5.1.2 A Scoping Report was issued to the Energy Consents Unit (ECU) on 15 August 2019 to seek a Scoping Opinion from the Scottish Ministers on the environmental information to be provided in the EIA Report. A Scoping Opinion (herein referred to as 'the 2019 Scoping Opinion') was subsequently provided by the ECU on 22 October 2019.
- 5.1.3 As no application for consent for the Proposed Development was made within 12 months of the 2019 Scoping Opinion, a letter requesting a refreshed scoping opinion (herein referred to as 'the 2020 Scoping Refresh letter') was issued to Scottish Ministers on 19 November 2020.
- 5.1.4 The responses contained within the 2019 Scoping Opinion and received as part of the 2020 Scoping Refresh Letter were considered in detail during the EIA process.

5.2 Pre-Application Consultation

5.2.1 Further engagement has been undertaken with relevant statutory and non-statutory consultees since receipt of the 2019 Scoping Opinion, notably the Energy Consents Unit, The Highland Council, NatureScot, Scottish Environment Protection Agency, the John Muir Trust and RSPB Scotland.

5.3 Gate Check

5.3.1 A Gate Check Report was issued to the Scottish Ministers and key stakeholders in April 2021 which outlined consultations with statutory and non-statutory consultees, engagement (or proposed engagement) with the local community and how matters raised during the Scoping process have been dealt with in the EIA Report. Consultation responses to the Gate Check Report were considered prior to finalisation of the EIA Report.

5.4 Consultation with the Local Community

Public Exhibitions

5.4.1 Public exhibition events were held within the local area in November 2019 to allow members of the general public to obtain information and pass comment upon the Proposed Development.

Virtual Online Exhibitions

- 5.4.2 Due to the ongoing Covid-19 pandemic in 2020 and 2021, a virtual online exhibition was held between 24 and 30 May 2021, to allow members of the general public to obtain information and pass comment upon the Proposed Development. The Virtual Online Exhibition included two live chat sessions with the Applicant at the following times:
 - 25 May 2021 (5pm to 7pm); and
 - 27 May 2021 (2pm to 4pm).
- 5.4.3 Live chat sessions were available during the virtual online exhibitions to allow attendees to ask the Applicant questions about the Proposed Development. Online feedback forms were also available on attendees to complete.

Consultation with Community Councils and Local Representatives

- 5.4.4 Meetings with Community Councils included:
 - Creich Community Council: Presentation (via Zoom call) to the Community Council regarding the Proposed Development on 19 January 2021; and
 - Ardgay and District Community Council: Presentation (via Zoom call) to the Community Council regarding the Proposed Development on 08 March 2021.
- 5.4.5 A representative from the Kyle of Sutherland Development Trust and the local MP attended the presentation presented to Creich Community Council on 19 January 2021.
- 5.4.6 Lairg Community Council and Rogart Community Council were also contacted by the Applicant. Lairg Community Council confirmed that they did not require an update on the Proposed Development, as they had received a copy of the presentation from a neighbouring Community Council. However, Lairg Community Council did request a separate meeting with the Applicant to discuss Community Benefit. Rogart Community Council did not respond to the Applicant's invitation to provide an update on the Proposed Development.
- 5.4.7 The Applicant held a meeting with representatives from Creich and Ardgay & District community councils on 8 June 2021, to discuss community benefits.
- 5.4.8 The feedback received during the community council meetings, public exhibitions and virtual online exhibitions, as well as any correspondence with local representatives, is recorded within a Pre-Application Consultation Report, submitted with the Section 36 Application.

6. Planning

6.1 Overview

- 6.1.1 Since the electricity generating capacity of the Proposed Development exceeds 50MW, the application for consent requires to be determined by Scottish Ministers under Section 36 of the Electricity Act 1989.
- 6.1.2 Various energy policy documents provide the backdrop for wind energy in particular, including:
 - Climate Change (Scotland) Act 2009;
 - Scottish Energy Strategy (2017);
 - Onshore Wind Policy Statement (2017);
 - The Scottish Government: Climate Change Plan (February 2018);
 - Climate Change (Emissions Reduction Targets) (Scotland) Act 2019;
 - Scotland's Climate Change Plan (2020); and
 - Scotland's Energy Strategy Position Statement March 2021.

6.2 Planning Policy

- 6.2.1 The National Planning Framework 3 (NPF3) (The Scottish Government, 2014) and Scottish Planning Policy (SPP) (The Scottish Government, 2014a) set out the long-term vision for the development of Scotland and the policies which reflect Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. Both seek to move towards a sustainable, low carbon, resilient and connected Scotland.
- 6.2.2 The Fourth National Planning Framework ('NPF4) 'Positions Statement' (The Scottish Government, 2014b) was published to provide an indication of the Scottish Government's current thinking on issues to be addressed by the emerging NPF4. It is not a policy document, but a consultation was undertaken on the document to inform the development of NPF4 which once published will become part of the Development Plan. It confirms the necessary shift required to achieve net zero-emissions by 2045.
- 6.2.3 At the development plan level, the Proposed Development lies wholly within THC area. The adopted development plan comprises the Highland-Wide Local Development Plan (HwLDP), adopted in April 2012 (The Highland Council, 2012). A number of policies within the HwLDP are relevant to the Proposed Development, as set out in Volume 2, Chapter 6: Planning of the EIA Report, and assessed within the Planning Statement accompanying the application and EIA Report.
- 6.2.4 The Proposed Development also sits within the area covered by the and Caithness and Sutherland Local Development Plan, adopted in 2018 ('CaSPlan') (The Highland Council, 2018). The CaSPlan focuses predominantly on settlements within the Plan area and there are no general policies which are considered to be relevant to the Proposed Development. The relevant strategy includes the intention to grow the communities, employment, connectivity and transport, and Environment and Heritage. This includes an economic strategy which recognises the benefits of renewable energy in achieving national climate change targets, but also in delivering economic benefit for the area.
- 6.2.5 Several Supplementary Guidance documents produced by THC also apply to the Proposed Development, including Onshore Wind Energy Supplementary Guidance, November 2016

(with addendum, December 2017), which provides details of the matters which THC will take into account when determining applications for onshore wind, including where they are a statutory consultee to Scottish Government on Section 36 applications.

7. Landscape and Visual Amenity

7.1 Introduction

- 7.1.1 A landscape and visual impact assessment (LVIA) has been undertaken for Proposed Development to consider the potential effects on landscape character, designated and protected landscapes, and also the potential effects of the Proposed Development on the visual amenity of those present within the landscape, including established views from residential areas, routes and recreational areas. It also gives full consideration to the cumulative landscape and visual effects of the Proposed Development when considered in addition to other existing and proposed wind farm developments.
- 7.1.2 The Proposed Development is located in close proximity to the operational Achany and Rosehall Wind Farms which already result in landscape and visual effects within the study area and thereby reduce the sensitivity of the landscape and visual resource to additional wind farm development.

7.2 Landscape Effects

- 7.2.1 The assessment of landscape effects has considered potential effects on Landscape Character Types (LCTs) identified by NatureScot, National Scenic Areas (NSAs), Wild Land Areas (WLAs), Special Landscape Areas (SLAs) and sites included on the Inventory of Gardens and Designed Landscapes.
- 7.2.2 The majority of landscape effects resulting from the Proposed Development would not be significant. **Significant effects** are anticipated to occur within a relatively localised area up to around 10km from the Proposed Development, largely confined to areas within Glen Cassley, and across the elevated plateau moorland to the east and west of Glen Cassley.
- 7.2.3 The Proposed Development would be located within the southern tip of WLA 34. Reay Cassley, and significant landscape effects across the plateau areas to the east and west of Glen Cassley would also lead to some **significant effects** on a localised area within the southern part of the WLA, although the greater majority of the WLA would not be affected and the integrity of the WLA would be retained.
- 7.2.4 There would be **no significant effects** to any NSAs, SLAs or sites included on the Inventory of Gardens and Designed Landscapes.

Visual Effects

- 7.2.5 Twenty-one representative viewpoints (VPs) have formed the basis of the assessment of the effects on visual amenity. The assessment also considered potential visual effects on residential areas within 20km of the Proposed Development, and transport and recreational routes. The visual effect at the majority of visual receptor locations was identified as being not significant. Potential **significant effects** are anticipated within an area largely contained within 10km of the Proposed Development, and not greater than 12.5km away. These would affect visual receptors located at six of the twenty-one VPs and nearby residential areas and routes focussed within three parts of the study area:
 - Around Achnairn and Shinness on the north-east side of Loch Shin, comprising VP9 (Achnairn Caravan and Camping Site Entrance) and VP14 (A838 near West Shinness), surrounding local residential areas and a short section of the A838;

- Near the confluence of Glen Cassley with Strath Oykel and Kyle of Sutherland, comprising VP6 (Rosehall) and experienced from some nearby residential areas, and a Core Path (SU21.03: Allt an Tuir Burn Walk), but not anticipated to affect users of the A837; and
- To the west and north-west of the Proposed Development, in and around Glen Cassley, comprising two VPs in Glen Cassley, VP11 (Glencassley Road to South of Castle) and VP12 (Glencassley Road by Langwell Hill) and the associated U2117 Glen Cassley Road, and also in a localised area to the west of Glen Cassley, comprising VP21 (Meall an Aonaich) and a localised part of a longer distance walking route which passes below Meall an Aonaich.
- 7.2.6 Visual effects for receptors in all other locations within the study area would **not be** significant.

Cumulative Landscape and Visual Effects

- 7.2.7 The cumulative landscape and visual assessment (CLVIA) has considered the potential landscape and visual effects of the Proposed Development with other operational and consented sites, those sites at application or appeal stage, as well as selected scoping sites within 40km of the Proposed Development, in agreement with THC.
- 7.2.8 The CLVIA identified few additional significant effects in relation to the Proposed Development compared to the assessment on the basis of the current baseline. The CLVIA identified that the cumulative effect could be slightly greater in extent across a small area of WLA 34 to the east of Glen Cassley as the Sallachy Wind Farm would also be located in this WLA. However, the integrity of the WLA would be retained and, overall, cumulative effects would remain relatively localised, with the majority of **significant effects** occurring within 10km of the Proposed Development and none at a distance greater than 12.5km from the Proposed Development.
- 7.2.9 There would be **no significant cumulative effects** to any NSAs, SLAs or sites included on the Inventory of Gardens and Designed Landscapes.

Summary

7.2.10 Overall, the LVIA has concluded that the Proposed Development would result in a limited number of localised **significant effects** on landscape character and visual amenity, affecting relatively localised parts of the landscape and visual resource up to 10km, and locally to 12.5km from the Proposed Development. This would affect a range of residential, recreational and route-based visual receptors in areas to the north-east of Loch Shin, around Rosehall and Glen Cassley and recreational users within a localised part of the upland area to the west of Glen Cassley, and would result in some increased influence of wind turbines on the landscape character within parts of Glen Cassley, the upland plateau areas to either side of it, and a localised part of WLA 34, Reay – Cassley. Outwith these areas, landscape and visual effects would **not be significant**.

8. Ecology

- 8.1.1 An assessment has been carried out which considers the potential impacts and their associated effects on ecological features, such as designated nature conservation sites, habitats and protected species in line with best practice guidance (CIEEM, 2018) from the Chartered Institute of Environmental Management (CIEEM).
- 8.1.2 The study area was surveyed in 2020 to provide baseline information on habitats and faunal species. Surveys included an extended Phase 1 habitat survey and National Vegetation Classification surveys, which included a Peatland Condition Assessment. The dominant habitats within the Site were wet heath and blanket bog. Five potential Groundwater Dependent Terrestrial Ecosystems were recorded but it is considered that these are unlikely to be groundwater dependent in the setting of the study area. Protected species surveys identified the presence of otter, water vole and bats, and aquatic ecology surveys identified the presence of brown trout in very low densities.
- 8.1.3 Potential effects on the River Oykel SAC, Caithness & Sutherland Peatlands SAC, Grudie Peatlands Site of SSSI were considered, as well as other important ecological features such as blanket bog, bats, otter, and water vole. Effects were assessed during construction, operation and decommissioning phases of the Proposed Development with assumed embedded mitigation.
- 8.1.4 In the absence of further mitigation, **significant effects** in terms of the EIA Regulations are predicted for blanket bog.
- 8.1.5 Following the implementation of proposed mitigation and good practice measures such as an outline Habitat Management Plan, which seeks to restore and enhance blanket bog habitat, and a Deer Management Plan, **no significant residual effects** are predicted.

9. Ornithology

- 9.1.1 An assessment has been carried out to determine the potential effects of the Proposed Development on bird species of conservation concern and their supporting habitats.
- 9.1.2 There are no statutory or non-statutory natural heritage designations within the Site. The Caithness and Sutherland Peatlands SPA does adjoin the Site to the north-east, as does the SPA's underlying Ramsar Site and the Grudie Peatlands SSSI. The SPA is designated for a range of breeding birds. The Ramsar site is designated for its blanket bog and breeding bird assemblage and the SSSI features of interest are blanket bog and three upland breeding waders (dunlin, golden plover and greenshank).
- 9.1.3 The nearest other international sites designated for birds are the Strath Carnaig and Strath Fleet Moors SPA, approximately 15km to the east, Inverpolly, Loch Urigill and nearby Lochs SPA and Lairg and Strath Brora Lochs SPA. These are both approximately 11km from the Site.
- 9.1.4 Breeding red-throated and black-throated divers were absent from the study area, and no flights of either species were recorded over the survey period. No breeding raptors were identified on, or in proximity to the Proposed Development .
- 9.1.5 Moorland breeding bird surveys identified a characteristic assemblage of species present, including dunlin, golden plover and greenshank (qualifying species of the Caithness and Sutherland Peatlands SPA/Ramsar and Grudie Peatlands SSSI).
- 9.1.6 There were no black grouse recorded on-site, breeding (or in flight).
- 9.1.7 In terms of other flight activity, the comprehensive surveys conducted over the 2019 and 2020 breeding seasons revealed golden eagle activity to the north-east and north-west of the Site, the distribution of which was taken into account during the turbine layout iterations. Flight activity of other raptors was limited, including SPA qualifying species hen harrier and merlin.
- 9.1.8 Using the combination of desk study data and survey results, the assessment of the Proposed Development's effects on Important Ornithological Features (IOFs) has taken into account the area's bird populations, and specifically on the Caithness and Sutherland Peatlands SPA. The assessment considered predicted effects on the SPA qualifying species against the SPA's conservation objectives.

The assessment also identified the likely significance of effect on the IOF's of the Caithness and Sutherland Peatlands Ramsar site and ornithological features of its underlying Strath Grudie Peatlands SSSI. The assessment work on IOF's and on these designated sites addressed the likely significance of effects predicted to result from the Proposed Development both alone, and in combination with other plans and projects. The assessment concluded that there would be **no significant effects** on any IOFs, and it concluded beyond reasonable scientific doubt, there would be **no likely significant effects** that would adversely affect the integrity of these designated sites.

10. Hydrology and Hydrogeology

- 10.1.1 An assessment of the potential effects on the hydrological and hydrogeological environment associated with the construction, operation and decommissioning of the Proposed Development has been carried out.
- 10.1.2 The Proposed Development is located within the River Cassley hydrological catchment which forms part of the River Oykel SAC. Several smaller named and unnamed watercourses flow directly from the Site to the River Cassley.
- 10.1.3 Following proposed mitigation measures and adherence to regulatory guidance, there would be **no significant effects** on the hydrology or hydrogeology of the Site associated with the construction, operation and decommissioning of the Proposed Development.
- 10.1.4 There are no Private Water Supplies (PWS) within 250m of the Site, however the catchment area of one PWS extends into the Site and this has been used to inform the sensitivity of surface watercourses.
- 10.1.5 The layout of the Proposed Development has been designed to ensure infrastructure is located outwith the indicative flood extent of 'natural watercourses' and their 50m watercourse buffer. The layout has also been designed to avoid habitats identified as potentially groundwater dependent where possible. Seven watercourse crossings over 'natural watercourses' have been identified as required, of which five will likely be in the form of circular culverts and two single-span bridges.
- 10.1.6 Following the application of proposed mitigation measures and best practice methods during the construction phase, residual adverse effects on hydrology and hydrogeology are considered to be **not significant**.

11. Geology and Carbon Balance

- 11.1.1 The potential effects of construction and operation of the Proposed Development on geology and carbon balance have been identified and assessed as **not significant** in terms of the EIA Regulations.
- 11.1.2 In order to optimise the proposed wind farm design layout, the disturbance of peat has been minimised by avoiding areas of thick peat deposits where possible and the re-use of peat would be maximised in accordance with best practice management.
- 11.1.3 Potential effects in relation to geology and carbon balance are most likely during the construction phase of the Proposed Development and may relate to effects on peat stability and excavation. The results of a peat slide risk assessment have helped to better inform the layout design, allowing for micro-siting of the wind farms infrastructure.
- 11.1.4 Ground conditions have been assessed during a preliminary desk study, site walkover and four phases of peat probing to establish peat depths across the Site. The assessments identify sensitive areas across the Site, namely areas of nationally important carbon rich soils including prioritised peatland habitats (known as Class 1 or 2 peatland). Peat is generally of limited thickness across the Site, however, in siting of infrastructure, efforts have been made to minimise impact on the peatland habitat with particular care taken to avoid isolated deeper pockets of peat.
- 11.1.5 An assessment of the carbon impact of the Proposed Development has been carried out using the SEPA Carbon Calculator Tool v1.6.01. This calculates that once the wind farm is operational, it is expected to result in an annual savings of 53,490 tonnes of CO2e versus grid-mix electricity generation. As such, the project has a payback time of 3.2 years compared to grid-mix electricity generation. These savings are even greater (and payback time faster) when compared to fossil fuel-mix electricity and coal-fired electricity.

12. Cultural Heritage

- 12.1.1 An assessment of the archaeological and cultural heritage value of the site and the direct and indirect likely significant effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development has been carried out.
- 12.1.2 Impacts upon the setting of designated heritage assets have generally been mitigated through the iterative design process. A **significant** effect has been identified on the setting of Dail Langwell, Broch (Asset 45) Scheduled Monument. However, it is concluded that the asset's key relationship with the River Cassley and the glen would still be appreciable and the ability to understand its defensive position would not be diminished as a result of the Proposed Development. On this basis, there would not be an adverse effect upon the integrity of the asset's setting.
- 12.1.3 The assessment identified six known non-designated heritage assets within the Site. These assets are primarily post-medieval or modern in date and relate to estate management. Where possible, the Proposed Development has been designed to avoid direct impacts upon known heritage features within the Site. However, two assets, the fractured remains of boundaries/ fence lines, could potentially be directly impacted by the Proposed Development. Both assets are considered to be of Negligible importance and impacts would be at worst, of negligible magnitude. This is because any disturbance of these features would be restricted to very small elements of the assets and would lead to a barely measurable loss of information content. As such, it is considered that no mitigation is required.
- 12.1.4 The possibility of cumulative effects has been assessed. **No significant cumulative effects** were identified.
- 12.1.5 Given the presence of large zones of, generally shallow, peat moorland within the Site, there is a low probability that currently unknown buried remains might be disturbed by ground-breaking works on the Site during construction. Accordingly, it is recommended that a representative proportion of these works, in areas of relatively greater archaeological potential, is subject to an archaeological watching brief during these works. The extent and location of such works would be agreed with THC Historic Environment Team through a Written Scheme of Investigation (WSI).

13. Traffic and Transport

- 13.1.1 An assessment of traffic and transport effects on the public road network associated with the Proposed Development has been undertaken. The preferred access strategy proposes that all turbine abnormal loads would originate from either Nigg or Invergordon and access the Site via the A9 to Loch Fleet then the A839 passing through Lairg before entering the Site entrance from the east.
- 13.1.2 The assessment considers the impacts during the construction phase of the Proposed Development, when volumes of traffic generation are anticipated to be at their greatest due to the delivery of equipment and construction materials. In line with IEMA guidelines (IEMA, 1993), severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation as well as accidents and safety have been evaluated in isolation for the Proposed Development. Following the implementation of a Construction Traffic Management Plan (CTMP), proposed mitigation measures and discussion with stakeholders, the environmental effect is considered to be **not significant**.
- 13.1.3 Traffic volumes, as a result of construction activities, are likely to increase on the public roads approaching the Site. Heavy Goods Vehicles (HGV) traffic volumes are anticipated to temporarily increase by more than 30% on the A836 and A949 with total traffic volumes likely to increase by more than 30% on the A839. The environmental effect is considered to be **not significant** following the implementation of the proposed mitigation measures, such as a comprehensive CTMP.
- 13.1.4 For the purposes of the cumulative assessment, it has been assumed that all construction programmes for committed developments; Lairg 2, Creag Riabhach and Braemore Wind Farms coincide with the Proposed Development. Although, this is highly unlikely due to supply chain constraints associated with the transport of construction materials including wind turbines, the cumulative assessment has considered the worst-case scenario. Prior to mitigation measures being implemented. **Significant cumulative effects** in this worst case scenario are predicted in relation to pedestrian amenity and fear and intimidation for users of the A839 west of Lairg, and in relation to pedestrian amenity for users of A836, A949 and within Bonar Bridge.
- 13.1.5 Should cumulative construction phases occur concurrently, enhanced CTMP mitigation measures would be developed through liaison with stakeholders including the THC roads officers, developer representatives and the emergency services are introduced within Bonar Bridge and Lairg, in order to manage the impact of increased cumulative HGV movements. Following the implementation of suitable mitigation measures, to minimise conflict between construction traffic and all road users, **no significant residual cumulative effects** are anticipated.

14. Socio-Economic, Recreation and Tourism

- 14.1.1 An assessment of the potential effects on socio-economic activity, recreation and tourism activity during construction and operation of the Proposed Development has been undertaken.
- 14.1.2 As a significant investment (approximately £80 million) in a key economic sector, it will provide contract and employment opportunities for Scottish and Highland based businesses throughout the construction and operational phases.
- 14.1.3 Renewable energy brings competitive advantages and opportunities for economic development within the Highlands and an opportunity to create employment and attract investment. The construction sector is well represented in the Highlands, suggesting the local area is well positioned to benefit from this aspect of the Proposed Development. This can be further evidenced through other notable capital investments by SSE in the area, including the Gordonbush, Strathy and Achany Wind Farms.
- 14.1.4 The tourism sector has continued to grow over recent times, despite an increasing number of wind farms across the Highlands and locally. The energy sector can support its continued growth, not only in terms of providing increased renewable energy to visitors but providing financial support through the wind farm community fund to local tourism resources, activities and initiatives.
- 14.1.5 The Site itself has low recreational and tourism value, other than some game shooting activity and fishing through the estates. Potential effects of construction and operation of the Proposed Development on recreational and tourism receptors in the study areas are assessed as negligible and **not significant**.
- 14.1.6 The total value of contracts that could be secured in the Highlands has been estimated as £9.6 million and in Scotland businesses could secure contracts worth £28.8 million.
- 14.1.7 The Proposed Development could support an additional 204.7 job years (equivalent to 20.5 FTEs³) in Scotland including 74.6 (7.4 FTEs) in the Highlands during the construction phase.
- 14.1.8 The operations and maintenance of the Proposed Development could support an additional 28.5 FTE jobs in Scotland per annum, of which 18.7 could be in the Highlands.
- 14.1.9 Local businesses will have the opportunity to benefit from the contracting requirements to be awarded by the Applicant. These range from civil engineering and ground work contractors, haulage businesses through to suppliers of water, as well as local service-based companies including hotels, restaurants and local shops.
- 14.1.10 There will be a Community Fund associated with the Proposed Development, which will provide funding to local communities and community projects.
- 14.1.11 The Applicant is committed to using local contractors and services where possible and a 'Meet the Buyer' event would take place prior to construction to promote local procurement opportunities and to encourage regional and national firms to apply for opportunities provided by the Applicant and other companies in the supply chain.

³ It is standard practice in economic impact terms to assume that ten job years are equivalent to one full time equivalent (FTE) post

14.1.12 The assessment demonstrates that there are notable beneficial, albeit **not significant**, socio-economic effects across the construction and operational phases of the Proposed Development. For example, the local economy would be supported by the Proposed Development through distribution of community funds and through direct and indirect employment and expenditure opportunities. There may also be beneficial cumulative effects associated with the Proposed Development, of an existing supply chain in Highland, which may increase the beneficial impacts associated with construction.

15. Noise and Vibration

- 15.1.1 An evaluation of the potential effects of noise and vibration from the Proposed Development on nearby noise-sensitive receptors (NSRs) (typically residential dwellings) during construction, operation and decommissioning has been undertaken.
- 15.1.2 During construction, noise may result from the use of plant and machinery to carry out construction activities. However, due to the substantial (1.5km) separation distance between any part of the Proposed Development infrastructure and residential dwellings, **no significant effects** are likely to occur. Notwithstanding this, best practice mitigation measures will be adopted to manage noise emissions during construction, including restrictions on construction working hours.
- 15.1.3 Operational noise has been assessed in accordance with current best practice and is compliant with requirements at all NSR locations and is therefore **not significant** in terms of the EIA Regulations.
- 15.1.4 The cumulative effects of the Proposed Development in conjunction with nearby wind energy developments either operational, consented or the subject of a current planning application were taken into consideration and found to be acceptable and therefore **not significant** in terms of the EIA Regulations.
- 15.1.5 Noise during decommissioning is understood to be of a similar nature to that of construction and will be managed through best practice or other guidance and relevant legislation at the time.

16. Aviation

- 16.1.1 An assessment of the potential effects of the Proposed Development on aviation and radar in the surrounding area have been assessed. This includes a review and assessment of military and civil interests. **No significant effects** are predicted with implementation of appropriate mitigation measures.
- 16.1.2 The nearest on-airfield radar is located at Inverness Airport, which is located 61.1km from the Proposed Development. **No significant effects** on Inverness Airport Primary Surveillance Radar (PSR) are predicted.
- 16.1.3 Prior to the implementation of mitigation measures, a **significant effect** on Military Low Flying is predicted due to its location within a high priority military low flying area.
- 16.1.4 An appropriate infrared aviation lighting scheme will be discussed with the Ministry of Defence (MOD) and implemented by the Applicant. With implementation of appropriate mitigation measures, **no significant effects** are predicted on Military Low Flying.
- 16.1.5 The potential effects of the Proposed Development were considered in the context of existing, consented, and proposed developments in the surrounding area. Based on the results of the assessment, **no significant cumulative effects** on aviation or radar are predicted.

17. Other Issues

17.1 Telecommunications, TV and Radio Links

17.1.1 With respect to telecommunications, television and radio, based on previous information provided by Joint Radio Company (JRC), British Telecom (BT) and Ofcom, as well relevant scoping responses and review of the Ofcom Spectrum Information Portal data, no potential effects on television, radio and microwave links are anticipated as a result of the construction, operation or decommissioning of the Proposed Development.

17.2 Shadow Flicker

- 17.2.1 Shadow flicker can arise from the moving shadow of the turbine rotor blade passing over a narrow opening such as the window of a nearby residence. The likelihood and duration of shadow flicker depends upon the positioning of the sun, turbine and window locations, turbine orientation, time of day and year and weather conditions.
- 17.2.2 As the nearest occupied property to the Proposed Development is located more than 11 rotor diameters⁴ from the nearest WTG, the distance within which shadow flicker effects may occur within, there is no potential for shadow flicker effects to occur and no further assessment is required.

17.3 Ice Throw

17.3.1 Given the remote location of the Proposed Development, the potential for ice throw to affect members of the public is likely to be extremely low. With the implementation of appropriate mitigation measures, including turbines being fitted with vibration sensors which detect any imbalance that might be caused by icing, the risk of ice throw affecting members of the public or operational staff would be very low and **not significant**.

17.4 Air Quality

17.4.1 An operational wind farm produces no notable atmospheric emissions. The operation of the Proposed Development would therefore have no discernible adverse effects on air quality. Relevant mitigation measures for air quality and pollution control during the construction phase are captured within the CEMP. With the implementation of mitigation measures, **no significant effects** on air quality are anticipated as a result of the construction, operation or decommissioning of the Proposed Development.

17.5 Climate Change

17.5.1 Gaseous emissions with GWP associated with the Proposed Development would include exhaust gases and the release of carbon dioxide from dewatering and exposing peat during construction. Neither source is considered likely to be significant in terms of GWP. In terms of climate adaptation, consideration would be given to the potential implications of climate change on design of turbines; however, **no potential for significant effects** have been identified.

⁴ From the candidate turbine

17.6 Population and Human Health

17.6.1 Potential effects on population and human health as a result of the Proposed Development could relate to noise, air quality or shadow flicker. **No significant effects** are predicted.

17.7 Risk of Major Accidents and / or Disasters

17.7.1 Relevant types of accident and / or disasters to the Proposed Development include severe weather events, fire, traffic related accidents, and mass movement associated with ground instability. With the implementation of appropriate mitigation measures, **no significant effects** associated are anticipated.

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