

**Glen Ullinish Wind Farm – Section 42 Application
Environmental Impact Assessment Report Update**

Main Report

March 2020

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1 Application Context & Policy Background

1.1 Introduction

The Highland Council (THC) granted planning permission for Glen Ullinish Wind Farm on the 24th of August 2015 under the Town and Country Planning (Scotland) Act 1997 as amended by the Planning etc (Scotland) Act 2006 (THC Planning Reference 14/03964/FUL). The existing consent allows for the installation of fourteen turbines with a tip height of 119m and shall be herein referred to as the 'Consented Development'.

The UK Government announced in 2015 that it would end all new subsidies for onshore wind developments. Glen Ullinish Wind Farm was designed prior to this date when subsidies guaranteed a minimum price for every unit of electricity produced. The withdrawal of subsidies has meant that the project, as originally designed, is no longer financially viable. However, the proposed use of larger turbines would enable the project to generate sufficient additional electricity to offset the removal of subsidy revenue. Additionally, the use of the latest turbine technology will result in a greater contribution towards national energy targets and increase Scotland's overall generation from renewable sources.

Following discussions with THC it has been agreed that an application under Section 42 of the Town and Country Planning (Scotland) Act 1997 will be submitted to alter condition 1 attached to the Consented Development. This application is therefore seeking to increase the permitted height of the turbines from 119m to 149.9m. It also seeks to alter four turbine locations and reduce the quantity of turbines from 14 to 11. These adjustments will improve the productivity of individual turbines and the overall electricity output from the site.

In altering the site layout, the environmental information submitted in support of the Consented Development has been reviewed. The design principles agreed throughout the original consenting process have been adopted by this assessment and the same development constraints evaluated.

All proposed infrastructure remains within the red line boundary as specified by the original consent.

1.2 Energy production

The choice of wind turbine to be installed at the site is yet to be confirmed. For the purpose of this application, a candidate turbine has been assumed with a tip height of 149.9m.

At this tip height, whichever turbine is selected for installation will have a larger rotor diameter than those described in the Consented Development. However, because a model has not yet been selected, the precise rotor diameter remains unknown. For the purpose of Environmental Impact Assessment, each subject area has been assessed according to a reasonable worst-case scenario given the turbine models currently available within the proposed tip height limit. For example, the collision risk assessment uses a candidate turbine which has the largest possible rotor sweep area. The developer considers this to be the most prudent approach in terms of assessing the potential effects of the development.

The proposed increase in tip height and associated growth in rotor diameter would substantially improve the Average Energy Production (AEP) from the site. Indicative comparisons are shown in **Table A1.1**.

Table A1.1: Energy Generation Comparison¹

Estimated Figures	Original 2015 application based on a 3MW turbine with updated assumptions	Varied application based on modern turbines with updated assumptions
Energy Production	113,300 MWh/p.a.	134,600 MWh/p.a.
Homes Powered Equivalent	30,389 p.a.	36,095 p.a.
CO₂ Offsetting	5,085 tonnes/p.a.	6,050 tonnes/p.a.

1.3 Proposed alterations to the Consented Development (14/03964/FUL)

The proposed alterations to the consented development consist of:

- The removal of three turbines;
- The relocation of a further four turbines; and
- The variation of their maximum blade tip height from 119m to 149.9m.

Should this application gain consent, it is requested that a commencement period of 5-years is applied, as per the original application.

Table A1.2, shown below, summarises the proposed alterations being sought by this application.

Table A1.2: Summary of Proposed Changes

Characteristic	Consented Development	Proposed Alterations
Number of wind turbines	14	11
Tip Height	Up to 119m	Up to 149.9m
Blades	3 bladed modern design	No change
Turbine Colour	Light grey colour	No change
Turbine Foundation	20.5m diameter	25m diameter
Micro-siting	50m	No change
Total Length of Access Track	9.5km	7.5km
Number of Watercourse Crossings	5	3
Size of Crane hardstanding	40m x 22m	50m x 30m

¹ Table calculated using data published by Renewable UK. (Accessed 01.10.2019. Available from URL: <http://www.renewableuk.com/page/UKWEExplained>)

1.4 Government policy

Climate Change Policy

There is an increasing public realisation that the impacts of climate change demand urgent attention and this is reflected in current Government policy. On 26th June 2019 the UK Government introduced a legally binding net zero target to end the UK's contribution to global warming entirely by 2050².

More recently, on the 3rd of September 2019, the Scottish Government published 'Protecting Scotland's Future: the Government's Programme for Scotland 2019-2020'³. This programme is unequivocal in the language it uses about the threat posed by Climate Change and the urgency with which action must be taken. It states:

'Scotland is facing a climate emergency. Like the rest of the world, we must act to mitigate the worst impacts of climate change on our people and our planet.'

Furthermore, the Scottish Government passed legislation on the 25th September 2019 committing Scotland to net-zero emissions by 2045 – five years before the rest of the UK⁴. As part of this commitment a significant emissions reduction was also announced:

*'The Scottish Government will also respond to the global climate emergency by adopting an ambitious new target to reduce emissions by 75% by 2030 – the toughest statutory target of any country in the world for this date.'*⁵

These are clearly ambitious targets which require a supportive policy environment to enable the deployment of low carbon energy producing technologies.

Renewable Energy Policy

In May last year, the Scottish Government announced that by 2030, 50% of all Scottish energy consumption should come from renewable sources⁶. This commitment follows on from the Onshore Wind Policy Statement (OWPS), published in December 2017, which states:

*'In order for onshore wind to play its vital role in meeting Scotland's energy needs, and a material role in growing our economy, its contribution must continue to grow. Onshore wind generation will remain crucial in terms of our goals for a decarbonised energy system, helping to meet the greater demand from our heat and transport sectors, as well as making further progress towards the ambitious renewable targets which the Scottish Government has set.'*⁷

Despite a clear desire for the deployment of renewables, the main subsidy support for onshore wind – the Renewables Obligation – closed to new projects on the 31st of March 2017. As such, Glen Ullinish Wind Farm will now be reliant entirely on the wholesale market where prices are significantly lower than those achieved through the Renewables Obligation. This removal of support continues to act as a major and significant barrier to new onshore wind development. Optimisation of the site is therefore essential for reasons of economic viability.

The OWPS recognises the need for site optimisation in the context of a post subsidy era and states in Paragraph 23:

² The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (S.I. 2019/1056), <http://www.legislation.gov.uk/ukSI/2019/1056/contents/made>

³ Protecting Scotland's Future: the Government's Programme for Scotland 2019-2020 <https://www.gov.scot/publications/protecting-scotland-s-future-governments-programme-scotland-2019-20/>

⁴ Climate Change (Emissions Reduction Targets) (Scotland) Bill, 2019 [https://www.parliament.scot/S5_Bills/Climate%20Change%20\(Emissions%20Reduction%20Targets\)%20\(Scotland\)%20Bill/SPBill30BS052019.pdf](https://www.parliament.scot/S5_Bills/Climate%20Change%20(Emissions%20Reduction%20Targets)%20(Scotland)%20Bill/SPBill30BS052019.pdf)

'[Scottish Ministers] acknowledge that onshore wind technology and equipment manufacturers in the market are moving towards larger and more powerful (i.e. higher capacity) turbines and that these by necessity – will mean taller towers and blade tip heights.'

More explicitly, in an address to industry in 2016 the Head of the Scottish Government Energy Consents, Frances Pacitti stated:

*"We will acknowledge the need for us to be much more realistic in where the onshore wind industry is as a market and how to attract investment into Scotland". She said Holyrood will work towards "normalcy" around higher tip heights. "The dialogue to date has been capped at 132 metres but it's time to move that on. The discussion is 150 metres-plus for most applications going forward."*⁸

Policy Contribution

The Proposed Development will contribute positively towards Scottish, UK and international carbon reduction targets. It will also contribute towards the national goal of generating 50% of Scotland's energy consumption from renewable resources by 2050. Relative to the Consented Development, the proposed variations will achieve a larger contribution towards these policy targets and do so with fewer turbines. See **Table A1.1** for a full comparison.

Environmental Impact Assessment

As the application is being made under the Town and Country Planning (Scotland) Act 1997 as amended by the Planning etc (Scotland) Act 2006, the provisions of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the 2017 EIA Regulations') apply. This report, together with the Environmental Statement (ES) which accompanied the application for the Consented Development forms the overall Environmental Impact Assessment Report (EIA-Report). The ES prepared for the Consented Development was published in October 2014 and shall be herein referred to as the '2014 ES'.

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 introduced the requirement to consider the potential effects on several areas which were not covered by the 2014 ES. The additional areas include:

- The potential effects on climate change;
- The potential effects on human health; and
- The vulnerability of projects to major accidents and/or natural disasters and any implications of this for the likelihood of significant effects on the environment.

These three areas are covered in **sections 1.5.1 to 1.5.3** below.

1.4.1 Climate

By servicing the demand for electricity without reliance on fossil fuels and without producing harmful emissions, Glen Ullinish Wind Farm will have a positive effect on the environment and therefore on climate change. This benefit is quantified in **Table A1.1**.

⁵ Scottish Government News Published: 25 September 2019. 'Scotland to become a net-zero society' <https://www.gov.scot/news/scotland-to-become-a-net-zero-society/>

⁶ Scottish Government Annual Energy Statement 2019. Published: 15 May 2019 <https://www.gov.scot/publications/annual-energy-statement-2019/>

⁷ Scottish Government Onshore Wind: Policy Statement.

<https://www.gov.scot/publications/onshore-wind-policy-statement-9781788515283/>

⁸ 'Scotland set to raise roof for turbines', Renewable Energy News, Issue 346 October 2016, Page 9.

1.4.2 **Human Health**

This issue is considered broadly under the topics of emissions, landscape and visual effects and noise. In summary, no significant effects on human health are considered likely. It is also important to note that the wind farm will be constructed and operated in accordance with health and safety legislation.

1.4.3 **Risk of Major Accidents and Disasters**

The proposed Glen Ullinish Wind Farm is not located in an area with a known history of natural disasters or other extreme weather events.

Effects in terms of flooding were considered within the 2014 ES for the Consented Development. The construction methods originally stated remain unchanged for the Proposed Development. On this basis, the variations applied for through this application will not lead to increased accident or disaster risk levels.

In addition, the construction and operation of Glen Ullinish Wind Farm will be managed within the requirements of all appropriate health and safety regulations, including the Construction (Design and Management) Regulations 2015 and the Health and Safety at Work etc. Act 1974.

1.4.4 **Statement of Competency**

The 2017 EIA Regulations state that *“In order to ensure the completeness and quality of the EIA report:*

- (a) the developer must ensure that the EIA report is prepared by competent experts; and*
- (b) the EIA report must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.”*

Table A1.3 details the lead author and their expertise for each chapter of this report.

Table A1.3: Statement of Competencies

Topic	Expertise
Ecology	<p>Lead Author: Dr. Mortimer MCIEEM of <i>IMT Ecological Consultancy</i></p> <p>Dr. Mortimer MCIEEM has a PhD in bat ecology, is a licensed bat consultant and bat ringer, radio tracked bats and given talks on bats at both national and European Conferences. He is also a highly experienced ornithologist, active member of the Scottish Raptor Group, had Schedule 1 licenses for several species and is a qualified “A” bird ringer. He is also highly experienced in survey work and assessments of various mammal species including otter, badger, water vole and red squirrel. He has worked on over 175 wind farm projects, plus hydro schemes, commercial land etc.</p>
Ornithology	<p>Lead Author: E.S. Lawrence PhD CEnv CIEEM of <i>Lawrence Environmental Consultants</i></p> <p>Lawrence Environmental Consultants have more than 30 years experience of pre and post construction bird surveys monitoring/mitigation at all forms of renewable and infrastructure projects in Scotland and elsewhere in the UK. We deliver environmental impact statements and cover other landuse changes such as forestry and woodlands.</p> <p>The consultancy is recognised as a competent authority on ornithological and ecological issues by a number of Scottish Councils in relation to their consents procedure (which includes appropriate assessments for Natura sites & species). We act as ecological clerk of works on wind energy, power line and hydro electric projects (all ecological aspects).</p> <p>The principal & surveyors hold Schedule 1 licenses from SNH/NIE for the purposes of surveys on conservation sensitive species of bird.</p>

LVIA	<p>Lead Author: Jo Phillips of <i>Optimised Environments Limited (OPEN)</i></p> <p>Jo is a Chartered Member of the Landscape Institute and an Associate of Optimised Environments Limited (OPEN). Jo is an experienced landscape architect and urban designer, the past twenty years having been spent covering a wide range of environmental projects, including Landscape and Visual Assessments, Townscape Assessments, Urban Regeneration and Masterplanning.</p> <p>Jo’s experience in energy projects includes the preparation of representations on strategies and guidance, initial feasibility studies, participation and organisation of public exhibitions and presentations, preparation of landscape and visual assessments, preparation of materials for public inquiry and attendance as an expert witness at informal hearings. Jo keeps up-to-date on renewables news and attends conferences and exhibitions.</p>
Noise	<p>Lead Author: Rob Shepherd of <i>Hayes McKenzie Partnership Ltd</i></p> <p>Rob graduated from the University of Southampton in 2005 with a Master of Engineering (MEng) degree in Acoustical Engineering. He is a principal acoustic consultant at Hayes McKenzie Partnership Ltd, and a Member of the Institute of Acoustics (MIOA). He has worked in the field of acoustical engineering for over 15 years and has specialised in the field of noise from on-shore wind farms involving work on over 300 wind farm projects and appearing as an expert witness in the UK and Ireland. The Hayes McKenzie Partnership Ltd are sponsor members of the Institute of Acoustics (IOA) and members of the Association of Noise Consultants (ANC).</p>
Cultural Heritage	<p>Lead Author: Ross Jamison of <i>Muirhall Energy Ltd</i></p> <p>Ross graduated from Heriott Watt University in 2009 with an MSc in Carbon and Energy Management alongside a BSc in Planning and Property Development (RTIP & RICS accredited). Ross has a background in residential development and recently moved to Muirhall Energy where he works as a Project Officer, supporting internal projects through the planning consents process.</p>
Hydrology, Hydrogeology & Geology	<p>Lead Author: Ross Jamison of <i>Muirhall Energy Ltd</i></p> <p>Ross graduated from Heriott Watt University in 2009 with an MSc in Carbon and Energy Management alongside a BSc in Planning and Property Development (RTIP & RICS accredited). Ross has a background in residential development and recently moved to Muirhall Energy where he works as a Project Officer, supporting internal projects through the planning consents process.</p>
Traffic & Transport	<p>Lead Author: Scott McGarva of <i>Pell Frischmann</i>.</p> <p>The assessment has been carried out by Scott McGarva CMILT, MCIHT, Associate Director of Pell Frischmann. He has 21 years’ experience of transport planning, engineering and preparation of abnormal route reviews</p>
Socio-Economics & Tourism	<p>Lead Author: Ross Jamison of <i>Muirhall Energy Ltd</i></p> <p>Ross graduated from Heriott Watt University in 2009 with an MSc in Carbon and Energy Management alongside a BSc in Planning and Property Development (RTIP & RICS accredited). Ross has a background in residential development and recently moved to Muirhall Energy where he works as a Project Officer, supporting internal projects through the planning consents process.</p>

1.5 *Structure of the Report*

Having reviewed the previously submitted information and consultation responses, it is the view of the applicant that there are eight areas where the proposed variations are likely to impact the original judgements. These areas are as follows:

- Ecology
- Ornithology
- Landscape and Visual Impact Assessment
- Noise
- Cultural Heritage
- Hydrology, Hydrogeology and Geology
- Traffic and Transport
- Noise
- Socio-Economics and Tourism

A series of figures and tables are provided throughout this application. For the ease of cross referencing with the 2014 ES, all references used for within this application have the addition of a prefix 'A' (Addendum).

The full 2014 Environmental Statement Report is available on request at the following costs:

- Environmental Statement Report (Text, Figures and Technical Appendices) on CD in PDF format: £10
- Environmental Statement Report (Text, Figures and Technical Appendices) printed: £150;

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2 Description of the Development

2.1 Introduction

This Chapter should be read in conjunction with Chapter 2 of the 2014 ES. The proposed site layout and associated infrastructure is presented in **Figure A2.1** and a table of changes is presented in **Table A1.2**. All site infrastructure omitted from this chapter is not subject to change under the scope of this variation application.

2.2 Turbine Specification

This application seeks consent to install turbines of up to 149.9m in tip height. A range of machines are available within this design envelope and the final selection is yet to be made.

An elevation drawing of a typical candidate turbine is provided in **Figure A2.2**.

Turbine numbers 4, 7 and 11 are proposed to be removed from the Consented Development layout. Subsequently, turbine numbers 1, 3, 6 and 10 have each been adjusted under 50m to avoid oversailing the planning application boundary.

Table A2.1: Turbine Locations

Turbine Number	Easting	Northing
1 <i>(Adjusted 28.5m North)</i>	133696	841273
2	133767	841702
3 <i>(Adjusted 41.5m North)</i>	134072	841577
4	DELETED TO IMPROVE TURBINE SPACING & PRODUCTIVITY	
5	134601	842035
6 <i>(Adjusted 31.8m North West)</i>	134996	842200
7	DELETED TO IMPROVE TURBINE SPACING & PRODUCTIVITY	
8	135361	442493
9	135183	842824
10 <i>(Adjusted 48.4m North)</i>	135780	842755
11	DELETED TO IMPROVE TURBINE SPACING & PRODUCTIVITY	
12	135399	843240
13	136005	843107
14	135805	843377

2.3 Site Tracks

The adjusted track layout has been designed taking into consideration the environmental constraints previously identified. Consented routes are followed as far as possible and water crossings have been reduced from 5 to 3.

The updated layout requires approximately 7.5km of onsite access track – a reduction of approximately 2.0km compared to the Consented Development. Assuming an average track width of 5m, the overall developed area will be reduced by approximately 1.0 hectare. See **Figure A2.3** for more detail.

The proposed track will follow the construction techniques stated in the 2014 ES and will be guided by the following:

- ‘Good Practice during Wind Farm Construction’, Scottish Natural Heritage, Edition 4, 2019;
- ‘Constructed tracks in the Scottish Uplands’, Scottish Natural Heritage, 2015;
- ‘Floating Roads on Peat - A Report into Good Practice in Design, Construction and Use of Floating Roads on Peat with particular reference to Wind Farm Developments in Scotland’, Forestry Civil Engineering & Scottish Natural Heritage, 2010.

2.4 Turbine Foundations

Due to the increased turbine dimensions the foundations are also likely to increase in size. Although the exact foundation design is dependent on the final turbine selection, manufactures guidelines and geotechnical investigation works indicate that foundations will measure approximately 25m in diameter on a hexagonal base.

A typical turbine foundation specification can be seen in **Figure A2.4**.

2.5 Turbine Crane Hardstanding

Due to the increased turbine dimensions the crane hardstanding areas are also likely to increase in size. Although the exact hardstanding design is dependent on the final turbine selection, manufactures guidelines and geotechnical investigation works indicate that hardstanding areas are expected to measure approximately 50m by 30m.

3 Proposed Condition Alterations

3.1 *Consented Condition*

Condition 1 of the Consented Development states:

For the avoidance of doubt, unless amended by the terms of this permission, the development shall be constructed and operated in accordance with the provisions of the application, the submitted plans, and the Environmental Statement. This permission shall be for 14 turbines, with a maximum height to tip of 119m, to be sited as shown on the Development Layout Plan (APP-OOI) dated 18.06.2014.

3.2 *Proposed Condition*

It is proposed, given the updated assessments presented in this report, that Condition 1 is revised as follows, with varied wording in red:

*For the avoidance of doubt, unless amended by the terms of this permission, the development shall be constructed and operated in accordance with the provisions of the application, the submitted plans, and the Environmental Statement. This permission shall be for **11** turbines, with a maximum height to tip of **149.9m**, to be sited as shown on the Development Layout Plan (**Figure A2.1**) dated **04.03.20**.*

4 Ecology

4.1 Introduction

GLM Ecology was commissioned by Muirhall Energy to assess and overview the present Environmental Statement (ES) that was submitted and accepted to Council whilst obtaining planning permission for 14 wind turbines at Glen Ullinish, Isle of Skye (14/03964/FUL). The rationale behind this assessment is to determine if the present ES and all its relevant ecological determinations are adequate for a Section 42 to decrease the number of turbines from 14 to 11 but with an increase in height. The application 14/03964/FUL was consented for 14 turbines with a maximum tip height of 119m, the Section 42 is seeking to increase the tip height of 11 of the turbines to 149.9m and remove 3 turbines.

Site visits were carried out in September 2019 to survey or determine whether otters, bats or any European Protected Species (EPS) or legally protected species were present or suitable habitat was present at Glen Ullinish. This report does not include any ornithology issues, which are detailed separately in Chapter 5. The survey area was an approximate buffer of 500m around the construction footprint.

These assessments were carried out by GLM Ecology, an experienced ecology consultancy with 15 years experience of ecological assessments at over 150 wind farm sites in the UK. The findings of the field and desktop surveys are considered in regards to the legal obligations and guidance that currently exists for all protected species of flora and fauna when considering proposals for wind projects.

Dr. Mortimer MCIEEM has a PhD in bat ecology, is a licensed bat consultant and bat ringer, radio tracked bats and given talks on bats at both national and European Conferences. He is also a highly experienced ornithologist, active member of the Scottish Raptor Group, had Schedule 1 licenses for several species and is a qualified "A" bird ringer. He is also highly experienced in survey work and assessments of various mammal species including otter, badger, water vole and red squirrel.

The visits also looked at whether baseline habitat conditions have varied on site and if any new ecological surveys are required. Surveys previously carried out by GLM Ecology & Alison Averis up to 2012 include:

- Otter
- Bats
- Habitats including NVC & Ground Water Dependent Terrestrial Ecosystems (GWDTE).

The updated surveys and assessment of previous work carried out was to determine the following:

- To assess the potential ecological constraints to any development of this site;
- To assess the ecological value of such a site;
- To carry out appropriate survey work;
- To assess previous ecological survey work and determine if that work was still valid and
- To recommend further survey work if required.

4.2 Legislative context

A number of sites, habitats and species are protected under European and UK legislation, and may present constraints to site development.

Principal legislation and guidance which will be considered are:

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) 1992;
- Conservation (Natural Habitat &c.) Regulations 1994 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act 2004;
- Protection of Badgers Act 1992;
- Assessing the impact of small-scale wind energy proposals on the natural heritage: Scottish Natural Heritage (2016);
- Recommended bird survey methods to inform impact assessment of onshore wind farms, Scottish Natural Heritage, 2014;
- Assessing connectivity with Special Protection Areas (SPAs), SNH 2012;
- Technical Information Note 59 Bats and single large wind turbines: joint agencies interim guidance Natural England 18 September 2009; and
- Technical Information Note 51 Bats and onshore wind turbines Interim guidance Natural England 11 February 2009.
- BCT (2011) Bat Surveys – Good Practice Guidelines
- Bats and onshore wind turbines – Survey, assessment and mitigation (January 2019)

Species that are protected include bats, badgers, birds, otters, water voles and red squirrels. Protected sites and habitats include Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Special Areas of Conservation (SAC). The legislative issues for some of the species that might be affected at Glen Ullinish are discussed below.

Otters and their resting places receive protection under The Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations 2004 (the Habitats Regulations) which make it an offence to:

- Intentionally kill, injure or take an otter
- Possess or control any live or dead specimen or anything derived from an otter
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by an otter
- Intentionally or recklessly disturb an otter while it is occupying a structure or place, which it uses for that purpose.

4.3 Zone for consideration for ecological features

The zone of sensitivity for ecological features varies, depending on the nature and behaviour of the habitat or species, and also the type of impact that may affect them. As a general rule in this assessment, the impacts on individual habitats or species are considered for the whole of the development area, plus the following distances.

Table A4.1: Zone of Impact from Site Boundary of Ecological Features

Ecological feature	Zone of impact from site boundary
Internationally designated sites (SPA, SAC, Ramsar)	Within 20km
Nationally designated sites (SSSI, NNR)	Within 5km
Locally designated sites (LNR, WS)	Within 1km
Water voles and otters	Within 500m
Badgers and red squirrels	Within 500m
Bats	Within 500m
Great crested newt	Within 500m
Birds	Within 500m

The surveys in September 2019 found no signs of otters or any protected species and that since the original surveys in 2012, the habitat has not changed significantly. Given the habitat present it would be expected that otters are present in the general area.

A modest increase in turbine height and a decrease from 14 to 11 turbines would not increase the construction footprint. This therefore would not have any further impact on any terrestrial protected species (otter) or habitats that have already been mitigated for under the current planning permission.

Original bat surveys recorded an extremely low level of bat activity over site. The site was unsuitable for bats in the original surveys and given that there has been no significant change in habitats this would still be relevant at the present time. No trees with potential bat roost features are present on site or will be felled during site construction. No buildings will be impacted by the construction of the proposed wind farm. The increase in turbine height will not, therefore impact on bat species and there are not considered to be any significant effects under the EIA regulations. No updated surveys are required.

The ecology surveys carried out for the original wind farm (14/03964/FUL) for otters and bats are considered to be relevant for the new submission for the increase in turbine height and no new surveys apart from a pre-construction otter are required.

Mitigation for all protected species during construction will be under the jurisdiction of the ECoW for the site and as agreed with the Council and detailed in the CEMP.

4.4 NVC/GWDTE

An updated and comprehensive National Vegetation Classification (NVC) and Groundwater Dependant Terrestrial Ecosystems (GWDTE) report following survey work in September 2019 was completed by IMTeco Ltd. This work also looked at the original surveys by Averis (2012) and assessed these findings in the light of current guidance.

Please see **Appendix A** attached to this application for a full copy of this study.

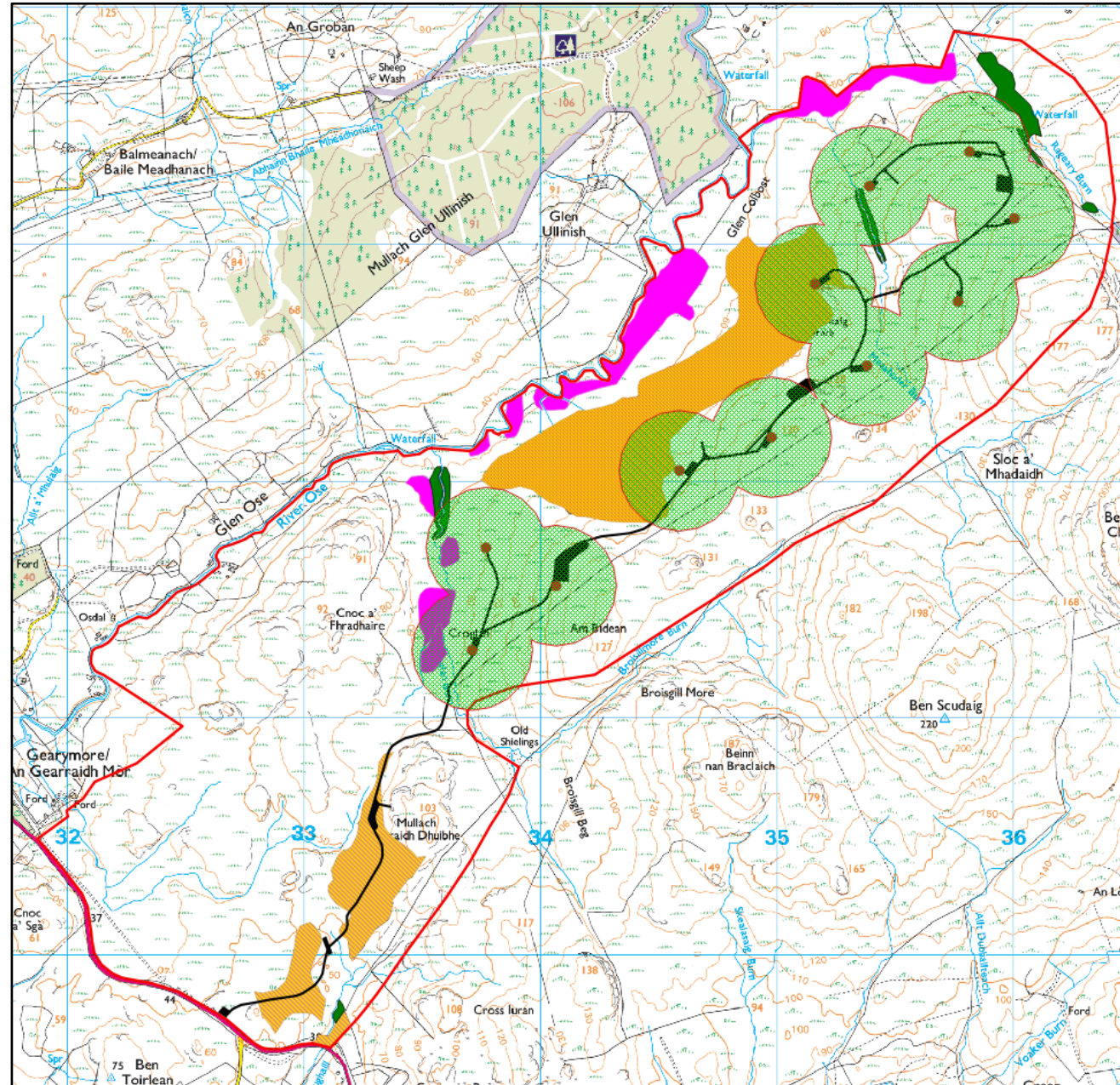
The report makes an assessment of the value of the habitats, likely impacts upon them and how these impacts might be mitigated.

The vegetation was classified to NVC sub-community level wherever possible, but only to NVC community level where sub-community determination was unclear. Most of the vegetation found in this survey was classified to NVC types where appropriate.

The habitats present were generally found to be very similar to those recorded in 2012. The site is considered complex from a mapping point of view due to the mosaic nature of the habitats present.

A mixture of GWDTE classifications of 1, 2 & 3 are present on site. The great majority of these are outwith the 250m zone around turbine locations. The habitat around these locations is predominantly blanket sphagnum bog. The M17 and M19 blanket bog communities are a Class 3 GWDTE and the groundwater discharge is considered irrelevant and is fed by other water sources. These bogs are a mosaic of communities and are commonplace throughout parts of Western Scotland.

Figure A4.1: 250m zones (green) around turbine locations with only very small areas of Class 1&2 GWDEs within these areas.



It is considered that no significant impact will occur on GWDEs and that the only mitigation required is micro-siting by an experienced ECoW when setting out on site. IMTeco's report has a full set of recommendations available in **Appendix A**.

4.5 **Conclusions**

It is proposed to decrease the number of turbines from 14 to 11 at Glen Ullinish. Turbines will be higher than the original granted application (14/03964/FUL). This will decrease the overall infrastructure within the construction footprint.

No signs of otter were recorded in 2019, however they are known to be in the general area. A pre-construction survey for otters is required.

Original bat survey work in 2012 found that the site has no bat roost potential and that bat activity is extremely low. The base conditions have not altered and no more surveys are required. The risk to bats, a European Protected Species is negligible.

Original survey work by Averis 2012 on habitats found a mosaic of relatively common habitats that would be as expected in this part of Scotland. Updated survey work by IMTeco 2019 to assess the impacts on GWDEs has shown that the potential to impact on Class 1 & 2 GWDEs is negligible. A full list of recommendations is included in IMTeco's report.

It is considered that due to a reduction in infrastructure, a reduction in turbine numbers that the original decision to grant planning permission without any significant impacts on any ecology constraints as discussed above is still totally valid as long as mitigation outlined above is followed.

5 Ornithology

5.1 Introduction and Scope of the Assessment

This chapter summarises the potential impacts on key bird species of a Section 42 variation to the original consent to enable larger dimension wind turbines for power generation on the Glen Ullinish site, Skye (Grid Ref. NG 350 420). The original consent in 2014 (14/03964/FUL) covered fourteen wind turbines:

- 2014: (tip height 119m).
- 2020: (tip height up to 149.9m)

The Section 42 variation seeks to alter the tip height, micro site the location of four turbines from the SE edge of the application site by up to 48.4m and reduce the number of wind turbines from fourteen to eleven as demonstrated by **Figure A2.3**.

Based on the scoping response of Highland Council that included SNH, the applicant was advised to re-appraise the ornithological impacts on the two key species: Golden eagle and White-tailed sea eagle. The main ecological question that required attention was **whether these new proposals would result in significant changes to the impacts identified in the original environmental impact assessment (EIA)**.

The original collision risk analysis in 2014 (based on flight line data collected 2010-2012 Appendix 6.1) predicted a fatality rate of c. 0.035/annum and 0.13/annum for golden and white-tailed sea eagle respectively. Within the limits of uncertainty the 2014 EIA concluded that such impacts on the local or regional populations of either species would be of low magnitude and of minor significance. On a precautionary basis for the latter species of eagle the Highland Council stipulated a planning condition (Condition 8 of the original consent) for the applicant/wind farm operator to remove fallen livestock from an area buffer of 200m around the wind turbines. This was in order to minimise the potential for sea eagle collisions.

The 2014 EIA also concluded that construction/decommissioning disturbance, habitat displacement, impacts on the Cuillins Special Protection Area for golden eagles as well as the cumulative collision rates would be of either low or negligible magnitude and not significant under the EIA regulations.

The main aims of this report are to re-analyse the collision risks to both species of eagle and identify if there have been significant changes to:

- (i) **either their local or regional/national populations and/or**
- (ii) **new operational or consented wind farms that might alter the above impact levels or significance,**
- (iii) **consider whether the larger turbine dimensions would alter collision risks.**

In order to fulfil these aims SNH advised the applicant of the Section 42 variation in June 2019 to undertake additional flight line/habitat use surveys for the two species of eagle and re-estimate the collision rates. This was based on the knowledge that since 2015 there had been and were continuing increases in the populations of both species in the Isle of Skye, Natural Heritage Zone 3 and in Scotland. Thus there could potentially be changes to the ornithological baseline around the Glen Ullinish application site that might include general increases in flight activity as well as new breeding territories.

This report has been written to provide a concise summary of the assessment, and should be read in conjunction with **Appendices B, C and D**.

5.1.1 Assessment methodology

In December 2018 the applicant commissioned the ornithological expert Dr. A. Fielding to re-calculate the collision rates and undertake preliminary estimates of the potential population impacts based on a range of wind turbine sizes using the original 2010-2012 flight activity data sets. This analysis was designed to identify the range of scenarios available under a Section 42 variation and the associated range of fatality rates on the assumption of an unchanged baseline. The applicant also commissioned a twelve month period of vantage point watches to collect up to date flight activity for both species of eagle. The proposed methodology was presented to Highland Council and SNH to confirm its adequacy. The total of 222h observations in 2019 matched the rate collected per annum in the original 2010-2012 period and is above the minimum survey levels advised by SNH (144h for two vantage points over breeding plus winter seasons). This data set was then re-analysed by Dr. A. Fielding to estimate the updated collision rates for both species of eagle with the proposed variations to the wind turbines and run population viability models on updated regional and national populations (Individual reports available in **Appendices B-D** attached to this report).

5.2 Results: Baseline Conditions 2019

5.2.1 Vantage point watches

Golden eagle

The distribution of the flights by the key species is shown in **Figures 2-4 of Appendix B**. There is a very close spatial distribution of the 2019 **golden eagle** flights and those recorded 2010-2012 which is dictated by the use of the wind resource over the ridges and summits (**Figure 2, Appendix B**). The recent data set identified a smaller proportion of adult birds versus juveniles or immatures (2019= c. 24% adults versus 2010-2012 = c. 40%). This confirms that currently the Glen Ullinish site is not situated within the core zone of a breeding territory although the boundaries and occupancy levels are fluid over time. Overall the baseline average flight activity at risk height increased by a factor of 5.7 since the 2010/2012 observations. As stated in the original EIA the recorded flights over 2019 are no more or less connected with the Cuillins SPA population of golden eagles. For example, the Glen Ullinish moorland is beyond the normal foraging range of adult golden eagles situated in the closest occupied ranges within the SPA and outside of the early post-nesting ranges of juveniles raised within the SPA (Refer to the penultimate paragraph Section 5.1 above).

White-tailed sea eagle

The spatial distribution of the 2019 **White-tailed sea eagle** flights shows some similarity with those recorded in 2010-2012 and during both periods they occupy most of the development area (**Figure 4, Appendix B**). The recent data set identified a smaller proportion of adult birds versus juveniles or immatures (2019= c. 36% adults versus 2010-2012 = c. 50%). The Glen Ullinish/Glen Vic Askill area supported a breeding territory in the 2014 & 2015 summers and the 2019 observations showed a possible attempt to establish a nest in a plantation to the northwest but with no evidence that this attempt continued through the summer. There were clear behavioral records in the autumn of 2019 of the displacement of sub adult individuals by what appeared to be a pair of resident adult sea eagles c. 1km east and north of Glen Vic Askill farm. There was no strong concentration of flights or particular flight corridors that appeared to be associated with a pair undertaking an aborted nesting attempt. Overall the baseline average flight activity at risk height increased by a factor of 8.6 since the 2010/2012 observations. Some of the autumn 2019 watches coincided with the gathering of sheep from this and neighbouring sectors of the hill to be

moved for sales and to coastal fields. There was a concurrent change in the behaviour of the sea eagles present at the time which vacated the moorland under observation at and adjacent to Glen Ullinish. This provides additional evidence of a short term response by the scavenging guild of birds to pastoral management. This could be used to inform the activities within a wind farm habitat plan that are likely to reduce the impacts.

5.2.2 *Estimated collision rates*

Table A5.1: Golden eagle

Data set	Collisions/annum	Collisions/25 years	Source
2019	0.195	4.9	Appendices B,C
2010/2012	0.035	0.87	Appendix 6.1 of ES

As predicted during scoping in 2019 the collision rate is predicted to increase with the elevated flight activity of golden eagles compared with seven years previously. However this is not a function of the proposed variation in the size and number of wind turbines proposed for the Glen Ullinish site, but is almost certainly linked to the significant increase in the Scottish golden eagle population (**Appendices C & D**). These appendices provide background evidence on the national and regional population stability for golden eagles: 30 pairs in Skye and c. 510 pairs in Scotland.

Table A5.2: White-tailed sea eagle

Data set	Collisions/annum	Collisions/25 years	Source
2019	1.12	27.9	Appendices B,C
2010/2012	0.129	3.24	Appendix 6.1 of ES

As above, the prediction was an increase in the flight activity of White-tailed sea eagles compared with seven years previously. The Skye breeding population plus the output of juveniles and immature birds has increased, with a doubling of the former – from 15 to >30 nest sites (**Appendices C & D**). These appendices also show evidence of the exponential increases of the White-tailed sea eagle population (both breeding adults and immature components) in Scotland:

“The number of breeding pairs of White-tailed Eagles has been increasing quite rapidly in recent years. For example, nationally there were 42 pairs in 2007 but 122 pairs by 2017”.

These data sets provide evidence from the field that supports the predictions of the population models and underline the favourable conservation status of this species.

5.2.3 *Magnitude & significance of the collision effects on the eagle populations*

Golden eagle

When the additional mortality rate in Table A5.1 above is included in a population viability model (**Appendix D**) there are almost no changes to the growth rate or number of occupied ranges (at local or regional and national levels). The magnitude of this effect is therefore unchanged at low to negligible and of minor significance. No additional forms of mitigation for the predicted fatality rates are advised. Therefore the proposed variation in the

Glen Ullinish project is not predicted to alter the current conservation status of golden eagles, either at the Skye, NHZ 8 or national levels.

White-tailed sea eagle

When the additional mortality rate in Table A5.2 is included in a population viability model there are minor changes to the growth rate and a minor delay in the year at which the carrying capacity is achieved (**Appendix D**). The magnitude of this effect is therefore classed as low to negligible and of minor significance. No additional forms of mitigation for the predicted fatality rates are advised. Therefore the proposed variation in the Glen Ullinish project is not predicted to alter the current conservation status of White-tailed sea eagles at the national level. As detailed above in Section 5.1 above it is advised that the Section 42 variation to the original consent incorporates the condition to remove fallen livestock from the vicinity of the eleven wind turbines during the operation phase. This will be detailed within the habitat management plan which will be agreed with Highland Council prior to the construction phase.

5.2.4 *Magnitude & significance of the cumulative collision rates on the eagle populations*

Since the original cumulative assessment in the 2014 ES there are two additional wind energy projects either with consent or in the planning process: Beinn Mheadonach (4 wind turbines c. 7km to the southeast) and Ben Sca (12 wind turbines c. 5.5km to the northwest). The former project is predicted to result in collision rates of 0.032/annum for golden eagle and 0.073/annum for White-tailed sea eagles (EIAs on Highland Council planning portal). The Ben Sca project is predicted to result in collision rates of 0.047/annum for golden eagle and 0.23/annum for White-tailed sea eagles (EIAs on Highland Council planning portal). The combined collision rates for the above two projects plus Edinbane and Ben Aketil wind farms and the revised Glen Ullinish estimates are 0.59/annum for golden eagle and 1.63/annum for White-tailed sea eagles.

Golden eagle

Using the estimated cumulative mortality rate above, the population viability model predicts no significant effect on the positive population growth rate for golden eagles (**Appendix D**). Although the updated mortality rate for the Glen Ullinish project contributes a relatively high proportion of the combined total (similar to that of Edinbane 0.28/annum), the current proposal should not tip the population into an unfavourable conservation status (**Appendix D**). Note that there are a number of factors that also suggest that the above rates are over-estimates (**Appendix D**). No specific additional mitigation is required for the proposed variation to the Glen Ullinish project when assessed cumulatively.

White-tailed sea eagle

Using the estimated cumulative mortality rate above, the population viability model predicts that the sea eagle population would continue to increase. However, it would take marginally longer before the sea eagle population reaches its carrying capacity (**Appendix D**). The updated mortality rate for the Glen Ullinish project contributes c. 70% of the combined total, however the current proposal should not tip the population into an unfavourable conservation status (**Appendix D**). Other than the previously agreed mitigation of removing fallen stock from 200m around each turbine, no specific additional mitigation is required for the proposed variation to the Glen Ullinish project when assessed cumulatively.

6 Landscape and Visual Impact Assessment

6.1 Introduction

A landscape and visual impact assessment (LVIA) for the consented Glen Ullinish Wind Farm (herein ‘the Consented Development’) was included as Chapter 7 of the 2014 Environmental Statement (ES).

The purpose of this LVIA Report is to identify where there is any change to the previous findings of the LVIA for the Consented Development and assess the likely significant effects as a result of the proposed changes to the project description for the Proposed Development; namely the removal of three turbines, the relocation of a further four turbines; the variation in their maximum blade tip height from 119m to 149.9m and relocation of some infrastructure (herein ‘the Proposed Development’).

The assessment in this LVIA Report, figures and visualisations serve to illustrate the difference between the Consented Development and the Proposed Development, and considers the potential for further significant effects, rather than providing a full assessment of the Proposed Development, given that the principle of a wind farm on the site has already been established through the previous granting of consent.

This Report has been undertaken by Landscape Architects at Optimised Environments Limited (OPEN). Assessments are undertaken in line with the LVIA methodology from the 2014 ES while allowing for different professional judgements on effect assessments to be reached, within the parameters of the 2014 ES methodology.

This assessment should be read in conjunction with Chapter 7 of the 2014 ES (Volume I – Environmental Statement) including the 2014 ES Appendix 7.1 – Viewpoint Assessment and 2014 ES Volume II – Landscape and Visual Figures.

This Report is accompanied by a series of figures (A6.1 to A6.18), including plans, ZTV diagrams and visual representations which provide comparison between the Consented Development and the Proposed Development.

The 2014 ES was accompanied by a set of visualisations that illustrate the appearance of the Development from a series of 14 viewpoints located around the study area. In order to illustrate the Proposed Development, this LVIA Report is accompanied by visualisations from nine of these viewpoints as agreed with The Highland Council (THC) (Viewpoint 1 Balmeanach; Viewpoint 2 Harlosh; Viewpoint 3 Feorlig; Viewpoint 5 Glen Heysdal; Viewpoint 7 Ose; Viewpoint 8 A863 Gearymore; Viewpoint 9 Fiskavaig; Viewpoint 10 A863 Idrigill Point; and Viewpoint 12 Macleod’s Table) shown in Figures A6.10 to A6.18.

6.2 Scope of Assessment

6.2.1 The Consented Development

The application for the Consented Development (14/03964/FUL) was submitted to The Highland Council in 2014 and approved at planning committee on 24 August 2015. The Consented Development consists of 14 turbines, 119m to blade tip. The turbine model used for the basis of assessments undertaken within the 2014 ES was the Enercon E82-3MW, using the following dimensions: 119m to tip; 82m rotor diameter; and 78m hub height.

6.2.2 The Proposed Development

The S42 Amendment Application (the Proposed Development) assessed in this report is based on a layout of eleven turbines which are 149.9m to blade tip. For the purposes of this assessment the hub height and rotor diameter have been assumed 83m and 133m respectively. Where comparative assessment is made, the dimensions of the Consented Development turbines are as per those submitted in 2014, as stated in section h above. The Proposed

Development represents an increase of 51m in rotor diameter and 5m in hub height, leading to an increase of 30.9m to blade tip height.

6.3 Methodology

It is the intention of the assessment in this LVIA Report to allow direct comparison of the effects arising from the Proposed Development with the effects of the Consented Development presented in the ES.

The methodology utilised in this review is therefore consistent with the LVIA Methodology presented in full in Section 7.4 of the 2014 ES.

This methodology conforms to the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3).

When preparing an LVIA for a new project, or a project in which it has had previous involvement, OPEN utilises its own methodology, based on GLVIA3. However, in undertaking this review and update of the LVIA for the Consented Development, OPEN has adopted the LVIA methodology set out in Section 7.4 of the 2014 ES. This is so that a direct comparison can be made between the assessment findings for the Consented Development and the Proposed Development, albeit allowing for some changes in the assessments due to different professional judgement within the parameters of the 2014 ES methodology.

6.3.1 Landscape Effects

Landscape effects are assessed by considering the sensitivity of the landscape against the degree of change posed by the Proposed Development. The sensitivity of the landscape to a particular development is based on factors such as its quality and value and is defined as high, medium or low.

The magnitude or degree of change considers the scale and extent of the Proposed Development, which may include the loss or addition of particular features, and changes to landscape quality, and character. Magnitude is defined as high, medium, low or negligible, examples of magnitude are shown below:

High Magnitude – This would be a major change to baseline conditions, where the character of the landscape may be altered from its existing state into a landscape with wind farms;

Medium Magnitude – This would be a noticeable change in the baseline condition but not necessarily one which would be enough to alter the character of the landscape and will generally diminish with distance;

Low Magnitude – This would be a minor change to the baseline conditions where the development would be readily missed by a casual viewer and any character of the landscape would remain intact; and

Negligible Magnitude – This would be a change which would be difficult to notice and the baseline conditions are likely to remain almost as they were.

Intermediate ratings have been added where necessary in order to more accurately represent the magnitude of change.

6.3.2 Visual Effects

Visual effects are concerned wholly with the effect of the development on views and visual amenity and are identified for different receptors (people) who will experience the view at their places of residence, during recreational activities, at work, or when travelling through the area.

Visual sensitivity is defined as high, medium or low based on the activity of the receptor, with higher sensitivity views including residential receptors (such as individual properties or settlements), recreational locations (such as hill summits, long distance footpaths, cycle paths and tourist locations); medium sensitivity views including from

roads, other areas of landscape; and low sensitivity views including those experienced by people at work and views where the existing view is already dominated by significant man-made features.

The magnitude of change on views is defined as high, medium, low or negligible. Definitions for levels of magnitude of visual effect were not included in the 2014 ES (Section 7.4.4) therefore OPEN have applied definitions from its own methodology as follows:

High Magnitude – the Proposed Development would result in a major alteration to the baseline view, providing the prevailing influence and/or introducing elements that are substantially uncharacteristic in the receiving view;

Medium Magnitude – the Proposed Development would result in a moderate alteration to the baseline view, providing a readily apparent influence and/or introducing elements potentially uncharacteristic in the receiving view;

Low Magnitude – the Proposed Development would result in a minor alteration to the baseline view, providing a slightly apparent influence and/or introducing elements that are characteristic in the receiving view; and

Negligible Magnitude – the Proposed Development would result in a negligible alteration to the baseline view, providing a barely discernible influence and/or introducing elements that are substantially characteristic in the receiving view.

Intermediate ratings have been added where necessary in order to more accurately represent the magnitude of change.

6.3.3 Assessing Significance

The level of effect is determined by the combination of sensitivity and magnitude of change as shown in Table 7.1 of the ES, as repeated in Table A6.1 below.

Table A6.1: Illustrative Significance Matrix

Sensitivity	Magnitude			
	High	Medium	Low	Negligible
High	Major	Major/moderate	Moderate	Moderate/minor
Medium	Major/moderate	Moderate	Moderate/minor	Minor
Low	Moderate	Moderate/minor	Minor	Minor/negligible
Key:				
	Significant in terms of the EIA Regulations			
	Not significant in terms of the EIA Regulations			

The significance of any identified landscape or visual effect has been assessed in terms of Major, Major/Moderate, Moderate, Moderate/Minor, Minor or Minor/Negligible. These categories are based on the juxtaposition of viewpoint or landscape sensitivity with the predicted magnitude of change. The matrix should not be used as a prescriptive tool but must allow for the exercise of professional judgement.

Where the visual effect has been classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. Careful consideration has also been given to Moderate effects to test whether (in the professional opinion of the landscape architect) they are significant in EIA terms or not. In all cases, whether an effect is significant or not is confirmed within the assessment.

⁹ SNH (1996) Skye and Lochalsh Landscape Character Assessment, SNH Report No 71, Caroline Stanton

6.3.4 Visual Representations

The visual representations and other graphics in the 2014 ES were produced in accordance with the ‘Visualisation Standards for Wind Energy Developments, 2013’. Since the 2014 visuals were produced, THC have updated their visualisation guidance and the visualisations presented in this LVIA report are therefore produced in line with the current THC visualisation guidance ‘Visualisation Standards for Wind Energy Developments, 2016’. For the visualisations accompanying this LVIA Report the baseline photography used in the 2014 ES has been reused as the basis for the production of visual representations in Figures A6.10 to A6.18.

Study Area

The assessment in this LVIA Report has focussed on a study area that extends to a 10km radius from the outer turbines of the Proposed Development. This detailed study area was utilised in the 2014 ES, and it is considered that any significant changes in landscape and visual effects arising from the proposed layout revisions will be contained within this radius.

Zone of Theoretical Visibility (ZTV) plans have also been produced to a 40km radius in order that comparison can be drawn with figures that were produced in the 2014 ES and in line with the SNH guidance on study areas for a tip height of 149.9m.

6.4 Changes to Baseline

The baseline landscape and visual conditions have altered in some respects subsequent to the production of the 2014 ES. These changes are described below.

6.4.1 Landscape Character

The 2014 LVIA assessed the effects of the Consented Development on the landscape character and quality of the site area, as defined by the Skye and Lochalsh Landscape Assessment⁹ and site survey.

The landscape character types (LCTs) mapped in Figure 7.2 of the 2014 ES broadly reflect the Skye and Lochalsh Landscape Assessment, however the LCT boundaries shown in this figure and subsequently assessed in the 2014 ES are not consistent with the SNH GIS dataset (SNH, 1998) (shown in Figure A6.6a) or the boundaries shown in the Skye and Lochalsh Landscape Assessment map and may have been rationalised as part of the character assessment undertaken for the 2014 ES.

In response to changes in development pressures, land use and digital mapping, SNH reviewed Scotland’s 1990s LCAs (including Skye & Lochalsh) and in 2019 produced updated national landscape character mapping and associated descriptions of landscape character types (Scotland National LCA, 2019)¹⁰.

The 2019 LCT map and associated LCT descriptions now supersede the 1990s landscape character descriptions and mapping, and are used for new development proposals, however where current proposals or projects have analysis based on the 1990s LCT dataset, SNH have advised they should still be used.

In line with this advice and to allow direct comparison with the assessment undertaken in the 2014 ES, this LVIA Report uses the Skye and Lochalsh Landscape Assessment with boundaries from the 1998 SNH GIS dataset as the baseline for its assessment (Figure A6.6a).

¹⁰ www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions

The Scotland National LCA (2019) mapping is also presented in Figure A6.6b for reference to the latest SNH landscape characterisation, which has in part, rationalised some of the earlier LCT boundaries and categorisations as summarised in Table A6.2 (within 10km).

Table A6.2: LCTs within 10km

Skye & Lochalsh LCTs (1998)	Scotland National LCTs (2019)
Smooth Moorland LCT (SKL1)	Upland Sloping Moorland (359)
Stepped Moorland LCT (SKL1a)	Stepped Moorland (360)
Rocky Moorland and Rocky Undulating Plateau LCT (SKL2)	Stepped Moorland (360)
Coniferous Woodland Plantation LCT (SKL11)	Upland Sloping Moorland (359) Stepped Moorland (360)
Linear Crofting LCT (SKL13)	Farmed and Settled Lowlands – Skye & Lochalsh (357)
Scattered Crofting LCT (SKL14)	
Harbour Settlement (SKL15)	
Rural Estate Settlement (SKL16)	

Based on the Skye and Lochalsh Landscape Assessment, the Proposed Development is located largely within the Stepped Moorland LCT (Figure A6.6a). This forms a sub-group of the Smooth Moorland LCT (located immediately to the north) and shares its general characteristics however, it is distinctive in having a stepped landform. Within the Scotland National LCA (2019) mapping, the Proposed Development is located wholly within the Stepped Moorland LCT (360), close to its boundary with the Upland Sloping Moorland LCT (359) as shown in Figure A6.6b.

6.4.2 Landscape Planning Designations and Wild Land

The Landscape Designations identified for the 2014 ES remain the same both in the wider study area and in the detailed 10km area. The 2014 LVIA identified two landscape planning designations within the 10km study area the North West Skye SLA and the Greshornish SLA, which are shown in Figure A6.7.

The 2014 ES assessed the potential effect of the Consented Development on the Core Areas for Wild Land (CAWLs). SNH redefined areas of wildness as Wild Land Areas (WLAs) in 2014 and later provided detailed descriptions of each WLA in 2017. There are no differences between areas of WLA and previous areas of CAWL within 10km, with the Duirinish WLA (22) located approximately 9km to the west of the Proposed Development.

The island of Soay in southern Skye was added to the Cuillin WLA in 2014, however there is no theoretical visibility on Soay.

Taking all of this into account, there are no updates to the Landscape Planning Designations or Wild Land baseline since it was recorded for the 2014 ES.

6.4.3 Visual Baseline - Zone of Theoretical Visibility (ZTV)

The visual baseline establishes the area in which the revised proposals may be visible, the different groups of people who may experience views of the revised proposals, the viewpoints where they will be affected and the nature of the views at those points and is primarily determined by the Zone of Theoretical Visibility (ZTV) of the Proposed Development.

Blade tip ZTVs for the Consented Development (119m blade tip) are presented in Figures A6.1 (40km) and A6.2 (10km), for comparison with those for the Proposed Development (149.9m blade tip) presented in Figures A6.3 (40km) and A6.4 (10km), showing the areas from where the Proposed Development may be theoretically visible.

In general terms, the Blade Tip ZTVs show that despite the larger 149.9m height of the Proposed Turbines, which are approximately 31m higher than the Consented Turbines (119m), the overall visibility pattern and geographic extent of visibility will be similar. Due to the reduced number of turbines proposed, in areas of higher visibility where 12-14 turbines of the Consented Development were visible, only 9-11 turbines of the Proposed Development will now be visible, albeit these will be viewed with a higher turbine height – i.e. less turbines of higher height visible, compared to more turbines of lower height.

The nature of what is viewed from these areas will change, rather than the spatial extent of the effect, which is best illustrated in the Comparative ZTVs in Figures A6.5 (40km) and A6.6 to A6.8 (10km). These show the additional areas (in yellow) where the larger 149.9m blade tip turbines of the Proposed Development would be visible, over and above areas where the Consented Development would have been visible (green and blue areas).

These comparative ZTVs indicate that the increase in turbine blade tip height will result in a very slight increase in the overall geographic extent of theoretical visibility of the Proposed Development, at the margins of the visibility extent of the Consented Development ZTV. These increases may occur, for example, where the higher turbines become visible over a landform when the lower consented turbines were previously screened by landform. The Proposed Development introduces visibility of 1-4 turbine blades from limited additional areas, including for example, elevated land of Greshornish and Dun Edinbane to the north, as well as areas on the edges of the Consented Development ZTV. These slight increases in the geographic extent of visibility of the Proposed Development will not result in material differences to the extent or type of visual receptors affected that would have been affected by the Consented Development.

With only a 5m increase, differences between Consented Development and Proposed Development hub height ZTVs would not be discernible and these are not therefore repeated as figures accompanying this LVIA Report.

6.4.4 Cumulative wind farm development

The 2014 ES included an assessment of cumulative effects that may arise as a result of the addition of the Consented Development to other operational, under-construction, consented and application-stage wind farms (albeit that only operational schemes were identified within the 10km study area in 2014). In this LVIA Report, the cumulative wind farm situation within the 10km study area has been reviewed and an updated cumulative assessment that considers the wind farms within this area has been included.

The relevant wind farms include operational, consented, and application-stage (including appeal) sites. Single wind turbines with a blade tip height of over 50m are included. In accordance with SNH guidance, scoping-stage wind farm sites are not included due to the preliminary nature of such proposals and their potential for change. The wind farms within a 10km radius that are relevant to the cumulative assessment of the Proposed Development are shown in Table A6.3 below and shown on Figure A6.9a.

Table A6.3: Relevant Wind Farm Sites within 10km of the Proposed Development

Wind Farm Site	Status	Distance (km)	No. Turbines	Blade Tip Height (m)	Rotor diameter (m)	Considered in 2014 ES?
Edinbane	Operational	1.6	18	100	66	Yes
Ben Aketil	Operational	4.8	12	99.5	71	Yes
Sumardale Croft Struan	Operational	6.8	1	66.6	33.4	Yes
Meadale	Operational	7.4	1	61.1	30.3	Yes

Beinn Mheadhonach	Consented	6.4	4	99.5	71	No
Glen Ullinish	Consented	N/A	14	119	82	N/A
Ben Sca	Application	4.4	9	135	115	No

Wind farms that lie beyond a 10km radius are considered to have limited relevance to this updated assessment as it is unlikely that the changes to the Proposed Development would lead to a significant cumulative effect arising as a result of cumulative developments found outwith a 10km radius.

The most relevant cumulative wind farm schemes remain the same at the time of the production of this Report as in the 2014 ES. These are the Operational Edinbane and Ben Aketil Wind farms. However, the addition of Beinn Mheadhonach and Ben Sca wind farms to the cumulative situation changes the consented and application scenarios previously reported in 2014. This has been assessed as part of this LVIA Report and cumulative ZTVs have been generated for Beinn Mheadhonach and Ben Sca wind farms as shown on Figures A6.9b and A6.9c.

6.5 Assessment of Landscape and Visual Effects

The following assessment considers where there is any change to the previous findings of the LVIA for the Consented Development and in turn, assesses the likely significant landscape, visual and cumulative effects as a result of the Proposed Development.

6.5.1 Review of Effects on Landscape Character

Landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and the way that this pattern is perceived. Effects on landscape character occur both on the site, where the pattern of elements that characterises the landscape will be directly altered by the addition of the Proposed Development to the landscape; and off-site, around the study area, where visibility of the Proposed Development may alter the way in which this pattern of elements is perceived.

Physical landscape effects of the Proposed Development are considered in Table A6.4.

Table A6.4: Assessment of Physical Landscape Effects

Landscape Receptor	Consented Development Assessment Summary (as reported in 2014 ES)	Proposed Development Assessment	
		Effect of Proposed Development	Changes to findings resulting from the Proposed Development
Physical Effects on Landscape Fabric (Construction Phase)			
Upland Pasture / Moorland	Sensitivity: Medium Magnitude of Change: Medium Effect: Moderate and Not Significant, Temporary	Sensitivity: Medium Magnitude of Change: Medium Effect: Moderate and Not Significant, Temporary	Fundamentally the physical effect on the upland pasture / moorland landscape element resulting from the Proposed Development during construction will be similar to the physical effect that would be experienced as a result of the Consented Development. The loss in landscape fabric during the construction would be small, relative to the extensive areas of moorland in the vicinity. The removal of 3 turbines for the Proposed Development would slightly reduce the area of moorland physically effected but the

			overall magnitude of change is assessed as remaining medium and the effect Moderate and Not Significant.
Physical Effects on Landscape Fabric (Operational Phase)			
Upland Pasture / Moorland	Sensitivity: Medium Magnitude of Change: High Effect: Major/moderate and Significant, Long-term (Reversible).	Sensitivity: Medium Magnitude of Change: High Effect: Major/moderate and Significant, Long-term (Reversible).	Fundamentally the physical effect on the upland pasture / moorland landscape element resulting from the Proposed Development during operational will be similar to the physical effect that would be experienced as a result of the Consented Development. The removal of 3 turbines for the Proposed Development would slightly reduce the area of upland pasture / moorland physically effected over the long-term.

The Proposed Development also has the potential to change the significance of effects on the character of landscape character types (LCTs) and landscape designations. The assessment in Table A6.5 summarises the landscape character assessment of the Consented Development as provided in Sections 7.8 and 7.9 of the 2014 ES and summarised in Table 10.16 of the 2014 ES, and updates this to assess the effect of the Proposed Development and any changes in assessment findings that are likely to arise as a result of the Proposed Development.

The landscape receptors that are included are those that lie within the 10km study area radius (Figures A6.6a and A6.7). Landscape receptors within this area remain those that may experience likely significant effects as a result of the Proposed Development and require assessment in order to determine the significance of effects on landscape character. The effect of the Proposed Development on all other landscape receptors beyond this 10km radius study area are scoped out of this revised assessment as not significant.

Table A6.5: Assessment of Effects on Landscape Character (Operational Phase)

Landscape Receptor	Consented Development Assessment Summary (as reported in 2014 ES)	Proposed Development Assessment	
		Effect of Proposed Development	Changes to assessment resulting from the Proposed Development
Landscape Character Types (LCTs)			
*Effects of the Proposed Development are assessed as Long-term (reversible), Indirect and Negative for all LCTs and are not repeated for each			
Stepped Moorland LCT (SKL1a)	Sensitivity: Medium Magnitude of Change: Low Effect: Moderate/minor (Not Significant)	Sensitivity: Medium Magnitude of Change: High on localised area of LCT within the immediate surrounding area of proposed turbines (roughly between Glen Ullinish and Ben Scudaig). Low on wider area character of LCT. Effect: Major/moderate (Significant) on localised area of LCT within the immediate surrounding area of proposed turbines (roughly between Glen Ullinish and Ben Scudaig). Moderate/minor (Not Significant) on wider area character of LCT. Long-term (reversible), Direct/Indirect and Negative.	Overall effect on wider character of LCT remains Not Significant. The increase in turbine size of the Proposed Development will only slightly increase the magnitude of change on character, compared to the lower turbines of the Consented Development, however it should be acknowledged that a significant effect would occur locally within this LCT on the key characteristics of the immediate surrounding area of the proposed turbines (roughly between Glen Ullinish and Ben Scudaig). Change in assessment arises due to difference in judgement compared

			to 2014 ES, which described effect of the Consented Development becoming a defining feature of the local landscape, without finding this to be a significant effect.
Smooth Moorland LCT (SKL1)	Sensitivity: Medium Magnitude of Change: Low Effect: Moderate/minor (Not Significant)	Sensitivity: Medium Magnitude of Change: High on localised area of LCT within the immediate surrounding area of proposed turbines (roughly between Glen Ullinish and Glen Vic Askill). Low on wider area character of LCT. Effect: Major/moderate (Significant) on localised area of LCT within the immediate surrounding area of proposed turbines (roughly between Glen Ullinish and Glen Vic Askill). Not Significant (Moderate/minor) on wider area character of LCT.	Overall effect on wider character of LCT remains Not Significant. The increase in turbine size of the Proposed Development will only slightly increase the magnitude of change on character, compared to the lower turbines of the Consented Development, however it should be acknowledged that a significant effect would occur locally within this LCT on the key characteristics of the immediate surrounding area of the proposed turbines (roughly between Glen Ullinish and Glen Vic Askill). Change in assessment arises due to difference in judgement compared to 2014 ES, which described effect of the Consented Development becoming a defining feature of the local landscape, without finding this to be a significant effect.
Rocky Moorland LCT (SKL2)	Sensitivity: High Magnitude of Change: Negligible Effect: Moderate/minor (Not Significant)	Sensitivity: High Magnitude of Change: Low on small areas of LCT at Ardtreck and Fiskavaig. Negligible on wider area character of LCT. Effect: Moderate (Not Significant), Long-term (reversible), Indirect and Negative on small areas of LCT at Ardtreck and Fiskavaig. Not Significant (Moderate/minor) on wider area character of LCT.	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for the wider areas of the LCT beyond 10km of the Proposed Development. Small areas of the LCT at Ardtreck and Fiskavaig were not assessed in the 2014 ES. These are within 10km (Figure A6.6a) and are assessed as having changes of low magnitude assessed as not significant.
Coniferous Woodland Plantation LCT (SKL11)	Sensitivity: Medium Magnitude of Change: Negligible Effect: Minor (Not Significant)	Sensitivity: Medium Magnitude of Change: Low on areas of LCT within 5km of the Proposed Development within Glen Ullinish and Glen Vic Askill. Negligible on wider area of LCT beyond 5km of the Proposed Development, where there are limited areas of theoretical visibility further restricted by dense plantation forestry cover. Effect: Moderate/minor (Not Significant) on areas of LCT within 5km of the Proposed Development	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for the wider areas of the LCT, where distance, limited theoretical visibility and screening by dense plantation forestry cover ensures changes to perceived character are negligible and not significant. Acknowledgement that some changes of low magnitude would occur on the character of the LCT within localised areas of LCT closer to the Proposed Development

		within Glen Ullinish and Glen Vic Askill. Minor (Not Significant) on wider area of LCT beyond 5km of the Proposed Development, where there are limited areas of theoretical visibility further restricted by dense plantation forestry cover.	within Glen Ullinish and Glen Vic Askill.
Linear Crofting LCT (SKL13)	Sensitivity: Medium Magnitude of Change: Low Effect: Moderate/minor (Not Significant)	Sensitivity: Medium Magnitude of Change: No change on the majority of areas of LCT to the north-east as the ZTV does not indicate any potential visibility. Low on several areas of LCT around Loch Bracadale at Harlosh, Roag, Bracadale and Fiskavaig where there will be visibility of the development. Effect: Negligible (Not Significant), Long-term (reversible), Indirect and Negative on the majority of areas of LCT to the north-east as the ZTV does not indicate any potential visibility. Moderate / Minor (Not Significant), Long-term (reversible), Indirect and Negative on several areas of LCT around Loch Bracadale at Harlosh, Roag, Bracadale and Fiskavaig where there will be visibility of the development.	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this LCT.
Scattered Crofting (SKL14)	Not assessed in 2014 ES	Sensitivity: Medium Magnitude of Change: No change on the majority of areas of LCT to the north-east and area at Bracadale / Struan to the south, as the ZTV does not indicate any potential visibility. Medium on several areas of LCT around Loch Bracadale at Harlosh, Ose, Ullinish and Fiskavaig / Portnalong where there will be visibility of the development. Effect: Negligible (Not Significant), Long-term (reversible), Indirect and Negative on the majority of areas of LCT to the north-east and area at Bracadale / Struan to the south, as the ZTV does not indicate any potential visibility. Moderate (Not Significant), Long-term (reversible), Indirect and Negative on several areas of LCT around Loch Bracadale at Harlosh, Ose, Ullinish and Fiskavaig / Portnalong where there will be visibility of the development.	The effect of the Consented Development on the Scattered Crofting LCT was not assessed in the 2014 ES, as it appears to have been amalgamated within the Linear Crofting LCT assessed in the 2014 ES. Proposed Development results in additional changes of medium magnitude on several areas of LCT around Loch Bracadale at Harlosh, Ose, Ullinish and Fiskavaig / Portnalong resulting in not significant effects on perceived character of these areas of the LCT.

Harbour Settlement (SKL15)	Not assessed in 2014 ES	Sensitivity: Medium Magnitude of Change: Negligible on the area of LCT at Bracadale to the south, as the ZTV indicates no potential visibility for the majority of this small LCT. Effect: Minor (Not Significant), Long-term (reversible), Indirect and Negative on the area of LCT at Bracadale to the south.	The effect of the Consented Development on the Harbour Settlement LCT was not assessed in the 2014 ES, as it appears to have been amalgamated within the Linear Crofting LCT assessed in the 2014 ES. Proposed Development results in additional changes of negligible magnitude on area of LCT at Bracadale resulting in not significant effects on perceived character of this area of the LCT.
Rural Estate Settlement (SKL16)	Not assessed in 2014 ES	Sensitivity: Medium Magnitude of Change: Negligible change on the area of LCT at Orbost to the west, as the ZTV indicates no potential visibility for the majority of this small LCT. Effect: Minor (Not Significant), Long-term (reversible), Indirect and Negative on the area of LCT at Orbost to the west.	The effect of the Consented Development on the Rural Estate Settlement LCT was not assessed in the 2014 ES, as it appears to have been amalgamated within the Linear Crofting LCT assessed in the 2014 ES. Proposed Development results in additional changes of negligible magnitude on area of LCT at Orbost resulting in not significant effects on perceived character of this area of the LCT.

Landscape Designations

*Effects of the Proposed Development are assessed as Long-term (reversible), Indirect and Negative for all designations and are not repeated for each

North West Skye SLA	Sensitivity: High Magnitude of Change: Low Effect: Moderate (Not Significant)	Sensitivity: High Magnitude of Change: Medium on the perceived landscape character of areas to the east of the SLA within 2-5km to the west of the Proposed Development, roughly between Glen Heysdal (Viewpoint 5), Harlosh (Viewpoints 2 and 3), Wiay/Oronsay, Ardtreck and the seascape of Loch Bracadale within this 5km area, where there will be views of the Proposed Development at relatively close range of 2-5km across Loch Bracadale. Low to Negligible on the perceived landscape character of wider areas of the SLA located at longer distances across Loch Bracadale, including the Duirinish Peninsula to the west and Miniginish Peninsula to the south. Effect: Major / Moderate (Significant), Long-term (reversible), Indirect and Negative on the perceived landscape character of areas to the east of the SLA within 2-	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for the wider areas of the SLA, where the effect becomes Not Significant on the wider character of the SLA with increasing distance and as visibility becomes more limited, such as from large areas of the Duirinish and Miniginish Peninsulas, where perceived effects on the character of the SLA are not significant. The increase in turbine size of the Proposed Development will only slightly increase the magnitude of change on character, compared to the lower turbines of the Consented Development, however on balance, it is assessed that it should be acknowledged that significant effects would occur locally on the perceived character of the closest parts of the North West Skye SLA around Loch
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		5km to the west of the Proposed Development, roughly between Glen Heysdal (Viewpoint 5), Harlosh (Viewpoints 2 and 3), Wiay/Oronsay, Ardtreck and the seascape of Loch Bracadale within this 5km area, where there will be views of the Proposed Development at relatively close range of 2-5km across Loch Bracadale. Moderate to Moderate/Minor (Not Significant), Long-term (reversible), Indirect and Negative on the perceived landscape character of wider areas of the SLA located at longer distances across Loch Bracadale, including the Duirinish Peninsula to the west and Miniginish Peninsula to the south.	Bracadale (2-5km from the Proposed Development). Change in assessment arises due to difference in judgement compared to 2014 ES, which described the effect of the Consented Development on the closest areas to the east of the SLA as being Moderate but Not Significant.
Greshornish SLA	No potential visibility of the Consented Development and therefore no impact.	Sensitivity: High Magnitude of Change: Negligible Effect: Moderate / Minor (Not Significant) Long-term (reversible), Indirect and Negative.	The Proposed Development introduces visibility of 1-4 turbine blades from a limited area of most elevated land of Greshornish at distances over 10km from the Proposed Development, resulting in some additional visibility, but having a negligible effect on the character of the Greshornish SLA.

6.5.2 Wild Land Areas

The 2014 ES included an assessment of Core Areas of Wild Land (CAWLs). Areas of wild land within Scotland have since been updated and are now identified as Wild Land Areas (WLAs). There are two such areas in the 40km study area for the Proposed Development – Duirinish (22) and Cuillin (23), both of which are in broadly the same location as the CAWLs assessed in 2014. Cuillin NSA is located over 17km from the Proposed Development and it is considered that, due to a combination of distance and nearby cumulative schemes at Edinbane and Ben Aketil, there is no potential for the Proposed Development to have significant effects on the perceived wildness characteristics of this WLA. The effects of the Proposed Development on the perceived wildness of the Duirinish WLA (22), which is within 10km, is assessed in Table A6.6.

Table A6.6: Assessment of Effects on Wild Land Areas (Operational Phase)

Landscape Receptor	Consented Development Assessment Summary (as reported in 2014 ES)	Proposed Development Assessment	
		Effect of Proposed Development*	Changes to assessment resulting from the Proposed Development
Wild Land Areas			
*Effects of the Proposed Development are assessed as Long-term (reversible), Indirect and Negative for all WLAs and are not repeated for each			
Duirinish WLA (22)	Sensitivity: High Magnitude of Change: Negligible Effect: Moderate / Minor (Not Significant)	Sensitivity: High Magnitude of Change: Low change to perceived wildness qualities of the WLA from the summits of Macleod's Table and eastern edges of the WLA at distances of 9km and above. No potential visibility of the	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for the wider areas of the WLA, where the effect is Not Significant for the large majority of the WLA due to the lack of visibility

		<p>Proposed Development from remaining areas of WLA to the west/north-west resulting in no change to the perceived wildness qualities of majority of the WLA.</p> <p>Effect: Moderate (Not Significant), Long-term (reversible), Indirect and Negative from the summits of Macleod’s Table and eastern edges of the WLA.</p> <p>No effect on the remaining areas of WLA to the west/north-west.</p>	<p>from areas to the west/north-west of Macleod’s Table which screen views from the wider WLA.</p> <p>Slight change in assessment arises due to difference in judgement compared to 2014 ES, which described the effect of the Consented Development on the closest areas to the WLA as being Negligible and Not Significant. The increase in turbine size of the Proposed Development will only slightly increase the magnitude of change on these closest areas of the WLA, compared to the lower turbines of the Consented Development, however on balance, it is assessed that a low magnitude of change would occur on the closest parts of the WLA around the summits of Macleod’s Table and eastern edges of the WLA. This effect is still considered to be Not Significant on the perceived wildness qualities of the WLA at distances over 9km.</p>
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6.5.3 Review of Visual Effects

The assessment of visual effects includes consideration of the nine viewpoints agreed with THC, for which updated assessments and visualisations have been produced in this Report (Viewpoint 1 Balmeanach; Viewpoint 2 Harlosh; Viewpoint 3 Feorlig; Viewpoint 5 Glen Heysdal; Viewpoint 7 Ose; Viewpoint 8 A863 Gearymore; Viewpoint 9 Fiskavaig; Viewpoint 10 A863 Idrigill Point; and Viewpoint 12 Macleod’s Table) and principal visual receptors such as properties, settlements, transport routes, recreational routes and recreational and tourist destinations as assessed in the 2014 ES for the Consented Development.

Viewpoints

Table A6.6 below reviews the viewpoint assessment, as assessed in Appendix 7.1 of the 2014 ES and summarised in Table 7.11 of the 2014 ES.

Table A6.6: Assessment of Effects on Viewpoints (Operational Phase)

Viewpoint	Consented Development Assessment Summary (as reported in 2014 ES)	Effect of Proposed Development	Change to assessment resulting from the Proposed Development
Viewpoints			
*Effects of the Proposed Development are assessed as Long-term (reversible), Indirect and Negative for all viewpoints and are not repeated for each			
Viewpoint 1 Balmeanach	<p>Sensitivity: High</p> <p>Magnitude of Change: High (2.2km)</p> <p>Effect: Major, Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: High (2.2km)</p> <p>Effect: Major, Significant</p>	<p>The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this viewpoint.</p> <p>While the Proposed Development would comprise three fewer turbines and occupy the same horizontal</p>

			extent as the Consented Development, the larger size of the turbines would increase the vertical extents. Despite this increase, the magnitude of change would remain high as previously assessed.
Viewpoint 2 Harlosh	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium (4.6km)</p> <p>Effect: Major/moderate, Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium-High (4.6km)</p> <p>Effect: Major/moderate, Significant</p>	<p>The Proposed Development will increase the magnitude of change to Medium-High and the effect to Major/moderate but remains Significant, as assessed in the 2014 ES for this viewpoint.</p> <p>The larger size of the proposed turbines would create more of a contrast with the scale of the landform than the consented turbines.</p>
Viewpoint 3 Feorlig	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium (4.0km)</p> <p>Effect: Major/moderate, Significant/Not Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium (4.0km)</p> <p>Effect: Major/moderate, Significant/Not Significant</p>	<p>The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this viewpoint.</p>
Viewpoint 5 Glen Heysdal	<p>Sensitivity: Medium</p> <p>Magnitude of Change: Medium (4.6km)</p> <p>Effect: Moderate, Not Significant</p>	<p>Sensitivity: Medium</p> <p>Magnitude of Change: Medium-High (4.6km)</p> <p>Effect: Major/Moderate, Significant</p>	<p>The Proposed Development will increase the magnitude of change to Medium-High and the effect to Major/moderate and Significant.</p> <p>The larger size of the proposed turbines would create more of a contrast with the scale of the landform than the consented turbines.</p>
Viewpoint 7 Ose	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium (2.2km)</p> <p>Effect: Major/moderate, Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: High (2.2km)</p> <p>Effect: Major, Significant</p>	<p>The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this viewpoint.</p>
Viewpoint 8 A863 Gearymore	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium (2.0km)</p> <p>Effect: Major/moderate, Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: High (2.0 km)</p> <p>Effect: Major, Significant</p>	<p>The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this viewpoint.</p>
Viewpoint 9 Fiskavaig	<p>Sensitivity: High</p> <p>Magnitude of Change: Low (7.3km)</p> <p>Effect: Moderate, Not Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium (7.3 km)</p> <p>Effect: Major/moderate, Significant</p>	<p>The Proposed Development will increase the magnitude of change to Medium and the effect to Major/moderate and Significant.</p>
Viewpoint 10 Idrigill Point	<p>Sensitivity: High</p> <p>Magnitude of Change: Low (9.0km)</p> <p>Effect: Moderate, Not Significant</p>	<p>Sensitivity: High</p> <p>Magnitude of Change: Medium-low (9.0 km)</p> <p>Effect: Major/moderate, Significant</p>	<p>The Proposed Development will increase the magnitude of change to Medium-low and the effect to Major/moderate and Significant.</p>

Viewpoint 12 Macleod's Table	Sensitivity: High Magnitude of Change: Low (11.1km) Effect: Moderate, Not Significant	Sensitivity: High Magnitude of Change: Low (11.1 km) Effect: Moderate, Not Significant	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this viewpoint.
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Principal Visual Receptors

The Proposed Development also has the potential to change the significance of effects on views experienced from visual receptors such as residential properties, settlements, transport routes and recreational routes. The assessment in Table A6.7 summarises the assessment of the Consented Development as provided in Sections 7.10.4 – 7.10.5 of the 2014 ES, and updates this to assess the effect of the Proposed Development and any changes in assessment findings that are likely to arise as a result of the Proposed Development.

The visual receptors that are included are those that lie within the 10km study area radius (Figure A6.8). Visual receptors within this area remain those that may experience likely significant effects as a result of the Proposed Development and require assessment in order to determine the significance of effects on views and visual amenity. The effect of the Proposed Development on all other visual receptors beyond this 10km radius study area are scoped out of this revised assessment as not significant.

Table A6.7: Review of Effects on Principal Visual Receptors

Visual Receptor	Consented Development Assessment Summary (as reported in 2014 ES)	Effect of Proposed Development	Change to assessment resulting from the Proposed Development
Residential Properties			
1. Glen Vic Askill	Sensitivity: High Magnitude of Change: High (932m) Effect: Major (Significant)	Sensitivity: High Magnitude of Change: High (985m) Effect: Major (Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this property.
2. An Groban	Sensitivity: High Magnitude of Change: High (2.0km) Effect: Major (Significant)	Sensitivity: High Magnitude of Change: High (2.0km) Effect: Major (Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this property.
3. An Cleirach	Sensitivity: High Magnitude of Change: Medium (2.1km) Effect: Major/moderate (Significant)	Sensitivity: High Magnitude of Change: High (2.1km) Effect: Major (Significant)	The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this property. The close proximity of the property to the Proposed Development means that the larger turbines will have more of an effect.
4. Alt Ruaridh	Sensitivity: High Magnitude of Change: Medium (2.3km) Effect: Major/moderate (Significant)	Sensitivity: High Magnitude of Change: High (2.3km) Effect: Major (Significant)	The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this property. The close proximity of

			the property to the Proposed Development means that the larger turbines will have more of an effect.
5. Balmeanach House	Sensitivity: High Magnitude of Change: Medium (2.3km) Effect: Major/moderate (Significant)	Sensitivity: High Magnitude of Change: High (2.4km) Effect: Major (Significant)	The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this property. The close proximity of the property to the Proposed Development means that the larger turbines will have more of an effect.
6. Dodridge Farm	Sensitivity: High Magnitude of Change: High (2.3km) Effect: Major (Significant)	Sensitivity: High Magnitude of Change: High (2.4km) Effect: Major (Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this property.
7. Osdal	Sensitivity: High Magnitude of Change: Low (1.5km) Effect: Moderate (Not Significant)	Sensitivity: High Magnitude of Change: Medium (1.5km) Effect: Major/moderate (Significant)	The Proposed Development will increase the magnitude of change to Medium and the effect to Major / Moderate changing it from Not Significant to Significant. The close proximity of the property to the Proposed Development means that the larger turbines will have more of an effect and that this will be evident from access tracks and garden grounds as well as from interior spaces, albeit partly screened.
8. Ose 1	Sensitivity: High Magnitude of Change: Low (1.9km) Effect: Moderate (Not Significant)	Sensitivity: High Magnitude of Change: Medium (1.9km) Effect: Major/moderate (Significant)	The Proposed Development will increase the magnitude of change to Medium and the effect to Major / Moderate changing it from Not Significant to Significant. The close proximity of the property to the Proposed Development means that the larger turbines will have more of an effect and that this will be evident from access tracks and garden grounds as well as from interior space.
9. Ose 2	Sensitivity: High Magnitude of Change: Negligible (2.0km) Effect: Moderate/minor (Not Significant)	Sensitivity: High Magnitude of Change: Low (2.0km) Effect: Moderate/minor (Not Significant)	The Proposed Development will increase the magnitude of change to Low but the effect remains Not Significant, as assessed in the 2014 ES for this property. The Proposed Development would be largely screened by intervening tree cover.

10. Ose 3	Sensitivity: High Magnitude of Change: Negligible (2.0km) Effect: Moderate/minor (Not Significant)	Sensitivity: High Magnitude of Change: Low (2.0km) Effect: Moderate/minor (Not Significant)	The Proposed Development will increase the magnitude of change to Low but the effect remains Not Significant, as assessed in the 2014 ES for this property. The Proposed Development would be largely screened by intervening tree cover.
Settlements			
Gearymore (Viewpoint 8)	Sensitivity: High Magnitude of Change: Medium (1.9km) Effect: Major/moderate (Significant)	Sensitivity: High Magnitude of Change: High (1.9km) Effect: Significant (Major)	The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this settlement.
Ose (Viewpoint 7)	Sensitivity: High Magnitude of Change: Medium (2.0km) Effect: Major/moderate (Significant)	Sensitivity: High Magnitude of Change: High (2.0km) Effect: Significant (Major)	The Proposed Development will increase the magnitude of change to High and the effect to Major but remains Significant, as assessed in the 2014 ES for this settlement.
Bracadale / Struan	Sensitivity: High Magnitude of Change: No visibility, no change (3.1km) Effect: None (Not Significant)	Sensitivity: High Magnitude of Change: No visibility, no change (3.1km) Effect: None (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Harlosh (Viewpoint 2)	Sensitivity: High Magnitude of Change: Low (4.8km) Effect: Moderate (Not Significant)	Sensitivity: High Magnitude of Change: Low on western side of Harlosh/Peninsula Medium-High on eastern side of Harlosh with direct views across Loch Caroy (4.8km) Effect: Moderate (Not Significant) on western side of Harlosh/Peninsula Major/moderate (Significant) on eastern side of Harlosh with direct views across Loch Caroy (4.8km).	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for the western side of Harlosh, where there is limited visibility. In views from the eastern side of Harlosh, the Proposed Development is assessed as having a high magnitude of change in direct views from residences looking across Loch Caroy and the effect is assessed as Major and Significant.
Portnalong	Sensitivity: High Magnitude of Change: Low (5.4km) Effect: Moderate (Not Significant)	Sensitivity: High Magnitude of Change: Low (5.4km) Effect: Moderate (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Glen Bernisdale	Sensitivity: High Magnitude of Change: No visibility, no change (6.5km) Effect: None (Not Significant)	Sensitivity: High Magnitude of Change: No visibility, no change (6.5km) Effect: None (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Fiskavaig (Viewpoint 9)	Sensitivity: High	Sensitivity: High	The Proposed Development will increase the magnitude of change

	Magnitude of Change: Low (6.8km) Effect: Moderate (Not Significant)	Magnitude of Change: Medium (6.8km) Effect: Major/moderate (Significant)	to Medium and the effect to Major/moderate and Significant.
Roag	Sensitivity: High Magnitude of Change: Low (6.8km) Effect: Moderate (Not Significant)	Sensitivity: High Magnitude of Change: Low (6.8km) Effect: Moderate (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Edinbane	Sensitivity: High Magnitude of Change: No visibility, no change (7.3km) Effect: None (Not Significant)	Sensitivity: High Magnitude of Change: No visibility, no change (7.3km) Effect: None (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Glengrasco	Sensitivity: High Magnitude of Change: No visibility, no change (8.2km) Effect: None (Not Significant)	Sensitivity: High Magnitude of Change: No visibility, no change (8.2km) Effect: None (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Carbost	Sensitivity: High Magnitude of Change: No visibility, no change (8.6km) Effect: None (Not Significant)	Sensitivity: High Magnitude of Change: No visibility, no change (8.6km) Effect: None (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Dunvegan	Sensitivity: High Magnitude of Change: No visibility, no change (10.0km) Effect: None (Not Significant)	Sensitivity: High Magnitude of Change: No visibility, no change (10.0km) Effect: None (Not Significant)	The Proposed Development would not alter the assessment judgements for the Consented Development in the 2014 ES for this settlement.
Major Transport Routes			
A863 (between Dunvegan and Drynoch)	Sensitivity: High Magnitude of Change: Low to Medium for the route as a whole. Medium from closest sections around Ose and Gearymore (located 1.7km at its closest). Effect: Major/moderate (Significant) from closest sections around Ose and Gearymore (located 1.7km at its closest). Moderate (Not Significant) from the remainder of the route.	Sensitivity: High Magnitude of Change: Medium to high intermittently from closest section of the route between Glen Heysdal (near Viewpoint 5), passing Ose (Viewpoint 7) to Knock Ullinish, at distances of 1.7km to 6km from the road. Low to Negligible between Dunvegan and Glen Heysdal to the north and between Struan/Bracadale and Drynoch to the south. Effect: Major/moderate to Major (Significant) intermittently from closest section of the route between Glen Heysdal (near Viewpoint 5), passing Ose (Viewpoint 7) to Knock Ullinish, at distances of 1.7km to 6km from the road.	Sections of the A863 to the north of Glen Heysdal and to the south of Struan/Bracadale assessed as having a moderate/minor and not significant effect, which accords with the 2014 ES. Closest sections of the A863 between Glen Heysdal and Knock Ullinish (to north of Struan) assessed as having a Major/moderate (Significant) effect due to the visibility of the Proposed Development from the road at relatively close range (generally between 2km and 6km from this section of the road).

		Moderate/minor (Not significant) between Dunvegan and Glen Heysdal to the north and between Struan/Bracadale and Drynoch to the south.	
A850 (between Dunvegan and Borve)	Sensitivity: Medium Magnitude of Change: Negligible (7.5km) Effect: Moderate / Minor (Not Significant).	Sensitivity: Medium Magnitude of Change: No visibility and no change to views from the majority of the route. Short 2km section of the route on lower slopes of Beinn na Boineide has visibility of 1-4 blades at approximately 8km, resulting in negligible change to views. Effect: No effect (Not significant) on views from the majority of the route. Moderate/minor (Not Significant) effect over short 2km section of the route on lower slopes of Beinn na Boineide where there is visibility of 1-4 blades at approximately 8km.	Assessments of no significant effects on views from the A850 accords with the assessments in the 2014 ES. No effects found on views over the majority of the A850 between Dunvegan and Brove, with just short 2km section having a Moderate/minor (Not Significant) effect.
Recreational Routes			
Core Path SL28.01	Not assessed	Sensitivity: High Magnitude of Change: High from 2km section of the route between the eastern edge of the forestry plantation and Glen Vic Askill (800m at closest point). Negligible from 1.5km section of the route through the forestry plantation at Mullach Glen Ullinish. Although the core path ends when the Balmeanach Road ends, it is possible to walk a further 3km west and connect to the A863, where the magnitude of change would also be High (similar to Viewpoint 1). Effect: Major (Significant) from 2km section of the route between the eastern edge of the forestry plantation and Glen Vic Askill and 3km section between A863 and end of Balmeanach Road. Moderate/minor (Not Significant) from 1.5km section of the route through the forestry plantation.	The proximity of this path to the Consented Development and its potential prominence in views from the route is described in the 2014 ES, however the magnitude and significance of effect is not assessed. The Proposed Development is assessed as having significant effects from the short section of the path between the eastern edge of the coniferous plantation and Glen Vic Askill, but is not significant in views from the section through the forestry plantation at Mullach Glen Ullinish where views are restricted by forestry close to the path.

6.6 Assessment of Cumulative Effects

The assessment of cumulative effects includes consideration of the nine relevant viewpoints (e.g. the nine viewpoints for which updated visualisations are provided in this Report) and the principal visual receptors as assessed in the 2014 ES for the Consented Development.

Table A6.8: Review of Cumulative Visual Effects on Viewpoints

Receptor	Consented Development Assessment Summary (as reported in 2014 ES)			Cumulative Effect of Proposed Development		
	Sensitivity	Magnitude	Level of Effect	Sensitivity	Magnitude	Level of Effect
Viewpoints						
*Effects of the Proposed Development are assessed as Long-term (reversible), Indirect and Negative for all viewpoints and are not repeated for each						
Viewpoint 1 Balmeanach						
Glen Ullinish + Operational Wind Farms	High	Negligible	Moderate/minor	High	Negligible	Moderate/minor
Glen Ullinish + Operational, Consented Wind Farms		Negligible	Moderate/minor		Negligible	Moderate/minor
Glen Ullinish + Operational, Consented, Application Wind Farms		Negligible	Moderate/minor		Negligible	Moderate/minor
The cumulative influence from the operational, consented and application wind farms will be limited by the fact that only small numbers of tips will be visible from this viewpoint. It is in relation to this cumulative context that the Proposed Development will give rise to only a negligible cumulative magnitude of change and a moderate/minor effect, despite the increase in the size of the turbines. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this viewpoint, as presented in the 2014 ES. This will be moderate / minor (not significant).						
Viewpoint 2 Harlosh						
Glen Ullinish + Operational Wind Farms	High	Low	Moderate	High	Low	Moderate
Glen Ullinish + Operational, Consented Wind Farms		Low	Moderate		Low	Moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Low	Moderate		Low	Moderate
Operational Edinbane has a relatively weak influence on the cumulative context owing to its limited visibility, seen as three turbines and a tip, to the left of the Proposed Development. The only other cumulative wind farm readily visible from this viewpoint will be consented Beinn Mheadhonach, shown in the wireline as four turbines on the ridgeline to the right. The separation distance of 11.02km from this viewpoint, combined with the small number of turbines means this wind farm will have a limited influence on the cumulative situation. It is in relation to this cumulative context that the Proposed Development will give rise to only a low cumulative magnitude of change and a moderate effect. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this viewpoint, as presented in the 2014 ES. This will be moderate (not significant).						
Viewpoint 3 Feorlig						
Glen Ullinish + Operational Wind Farms	High	Medium	Major/moderate	High	Medium	Major/moderate
Glen Ullinish + Operational, Consented Wind Farms		Medium	Major/moderate		Medium	Major/moderate

Glen Ullinish + Operational, Consented, Application Wind Farms		Medium	Major/moderate		Medium	Major/moderate
<p>The operational cumulative context remains unaltered. The only additional consented wind farm readily visible will be Beinn Mheadhonach, shown in the wireline as four turbines on the ridgeline to the right. The separation distance of 11.02km from this viewpoint, combined with the small number of turbines means this wind farm will have a limited influence on the cumulative situation. It is in relation to this cumulative context that the Proposed Development will have a medium magnitude of change. The only additional application wind farm readily visible will be Ben Sca, shown in the wireline as a row of turbines overlapping with operational Ben Aketil. The limited additional influence of Ben Sca will mean that the cumulative context will remain broadly similar and the magnitude of change will continue to be medium. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this viewpoint, as presented in the 2014 ES. This will be moderate (not significant).</p>						
Viewpoint 5 Glen Heysdal						
Glen Ullinish + Operational Wind Farms	Medium	Low	Moderate/minor	High	Medium	Moderate
Glen Ullinish + Operational, Consented Wind Farms		Low	Moderate/minor		Medium	Moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Low	Moderate/minor		Medium	Moderate
<p>Edinbane is visible to the left, seen set along the upland ridgeline. The addition of the Proposed Development will give rise to a medium cumulative magnitude of change owing to the larger size of the turbines, their slightly closer location and the spread of wind farm development into a new sector of the view. The only consented wind farm readily visible from this viewpoint will be Beinn Mheadhonach, shown in the wireline as four turbines on the ridgeline to the right. The separation distance of 11.58km from this viewpoint, combined with the small number of turbines means this wind farm will have a limited influence on the cumulative situation. The only application wind farm will be Ben Sca, which will be seen overlapping with operational Edinbane to the left and while this won't add to the extent of the cumulative wind farms it will add to their density. In all three scenarios, the cumulative magnitude of change resulting from the addition of the Proposed Development will be medium as it will make a notable increase to the extents and influence of wind farm development in this view. This will give rise to a moderate effect (significant).</p>						
Viewpoint 7 Ose						
Glen Ullinish + Operational Wind Farms	High	Low	Moderate	High	Low	Moderate
Glen Ullinish + Operational, Consented Wind Farms		Low	Moderate		Low	Moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Low	Moderate		Low	Moderate
<p>The extent to which all operational, consented and application wind farms are visible from this viewpoint is limited by the screening effect of intervening landform, such that only a small number of blades and tips are potentially visible. It is in the context of the relatively weak influence from the cumulative wind farms in all three scenarios that the Proposed Development will have a low cumulative magnitude of change and a moderate effect. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this viewpoint, as presented in the 2014 ES. This will be moderate (not significant).</p>						
Viewpoint 8 A863 Gearymore						
Glen Ullinish + Operational Wind Farms	High	Low	Moderate	High	Medium	Moderate/major
Glen Ullinish + Operational, Consented Wind Farms		Low	Moderate		Medium	Moderate/major
Glen Ullinish + Operational, Consented, Application Wind Farms		Low	Moderate		Medium	Moderate/major

<p>Consented Beinn Mheadhonach will not be visible from this viewpoint. Application Ben Sca will be visible to the left, set between operational Edinbane and Ben Aketil. Although set beyond 5km and appearing comparatively small in comparison to the Proposed Development, these wind farms will collectively have an influence on the cumulative situation. The close proximity of the Proposed Development to the viewpoint means that the increase in size of the proposed turbines compared to the consented turbines will be evident and this will raise the cumulative magnitude of change from low to medium. This in turn will give rise to a moderate/major effect, changing the assessment from not significant to significant.</p>						
Viewpoint 9 Fiskavaig						
Glen Ullinish + Operational Wind Farms	High	Negligible	Moderate/minor	High	Low	Moderate
Glen Ullinish + Operational, Consented Wind Farms		Negligible	Moderate/minor		Low	Moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Negligible	Moderate/minor		Low	Moderate
<p>While the Proposed Development will add to the cumulative effect, in all three scenarios, the additional effect will be moderated by the existing influence from operational Edinbane in the same part of the view as the Proposed Development and also from operational Ben Aketil to the left. The increase in size of the turbines will give rise to a low rather than negligible magnitude of change and a moderate rather than moderate/minor effect, albeit still equating to a not significant effect.</p>						
Viewpoint 10 Idrigill Point						
Glen Ullinish + Operational Wind Farms	High	Low	Moderate	High	Low	Moderate
Glen Ullinish + Operational, Consented Wind Farms		Low	Moderate		Low	Moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Low	Moderate		Low	Moderate
<p>In all three scenarios the cumulative magnitude of change will be low and the effect will be moderate. Despite the influence of the larger turbines the cumulative magnitude of change will remain low, principally in respect of the limited influence of the other wind farms. Edinbane is the only other operational wind farm readily visible and its influence is moderated by its distance of 11.7km from the viewpoint, its comparatively smaller scale and the partial screening by the intervening landform. The addition of consented Beinn Mheadhonach will not notably alter the cumulative context owing to its distance of 14.1km from the viewpoint, the small number of turbines and their comparatively smaller scale. The addition of application Ben Sca will similarly have a limited influence on the cumulative situation owing to the small number of turbines visible and their close association with neighbouring Edinbane.</p> <p>The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this viewpoint, as presented in the 2014 ES. This will be moderate (not significant).</p>						
Viewpoint 12 Macleod's Table						
Glen Ullinish + Operational Wind Farms	High	Medium	Major/moderate	High	Low	Moderate
Glen Ullinish + Operational, Consented Wind Farms		Medium	Major/moderate		Low	Moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Medium	Major/moderate		Low	Moderate
<p>The 2014 ES assessed the cumulative magnitude of change as medium, and a major/moderate effect (significant). Despite the slightly larger turbines, the Proposed Development is assessed as giving rise to a low cumulative magnitude of change, and a moderate effect (not significant). The difference in assessment relates to a difference in professional judgement. In order to be consistent with other parts of the cumulative assessment, the low magnitude of change relates to the existing influence in all three scenarios, of operational Edinbane and Ben Aketil, which occupy the same sector of the view as the Proposed Development and occur at a similar range. It also relates to the fact that all the wind</p>						

farms are located more than 10km from the viewpoint, which in turn, moderates the potential for the Proposed Development to give rise to a notable cumulative magnitude of change. Beinn Mheadhonach makes only an incremental addition in the scenario where consented wind farms are incorporated and while Ben Sca adds more notably to the scenario including application wind farms, it will not alter the cumulative situation to the extent that the magnitude of change would be more than low. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this viewpoint, as presented in the 2014 ES. This will be moderate (not significant).

Table A6.9: Review of Cumulative Visual Effects on Transport and Recreational Routes

Receptor	Consented Development Assessment Summary (as reported in 2014 ES)			Cumulative Effect of Proposed Development		
	Sensitivity	Magnitude	Level of Effect	Sensitivity	Magnitude	Level of Effect
Transport Routes						
*Effects of the Proposed Development are assessed as Long-term (reversible), Indirect and Negative for all viewpoints and are not repeated for each						
A863 Dunvegan to Drynoch						
Glen Ullinish + Operational Wind Farms	High	Medium	Major/moderate	High	Medium	Major/moderate
Glen Ullinish + Operational, Consented Wind Farms		Medium	Major/moderate		Medium	Major/moderate
Glen Ullinish + Operational, Consented, Application Wind Farms		Medium	Major/moderate		Medium	Major/moderate
<p>The main influence on the cumulative context derives from the presence of Edinbane and Ben Aketil on the hills to the east of the A863. The assessment of the Consented Development found that its addition would give rise to a medium cumulative magnitude of change and a major/moderate effect (significant). In respect of the first scenario, despite the proposed turbines being larger, the findings of the assessment would remain the same, as the extents of visibility would remain broadly the same and the oblique angle of the views from the road combined with the separation distance would prevent the rating from increasing to high. Consented Beinn Mheadhonach would have a limited influence owing to its small number of turbines, more limited visibility and greater separation distance. Ben Sca would have much more of an influence owing to its close proximity to Ben Aketil and would add to the density of wind turbines seen from the A863. The addition of the Proposed Development to the cumulative scenario including the application as well as consented and operational turbines would, however, not give rise to a high cumulative magnitude of change as Ben Sca would be seen closely associated with Ben Aketil and would not increase the spread of the cumulative context over a wider extent of the view. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this road, as presented in the 2014 ES. This will be major/moderate (significant).</p>						
A850 Dunvegan to Borve						
Glen Ullinish + Operational Wind Farms	High	Negligible	Moderate/minor	High	Negligible	Moderate/minor
Glen Ullinish + Operational, Consented Wind Farms		Negligible	Moderate/minor		Negligible	Moderate/minor
Glen Ullinish + Operational, Consented, Application Wind Farms		Negligible	Moderate/minor		Negligible	Moderate/minor
<p>While the larger turbines of the Proposed Development means that there could potentially be marginally more visibility experienced by road-users on the A850, this will still be very limited by intervening landform limiting the extent of theoretical visibility to two short sections and ensuring that only small numbers and extents of the turbines will be theoretically visible and forestry along the roadside reducing actual visibility further. While operational Ben Aketil and operational Edinbane create a relatively strong influence on the cumulative context as experienced from the A850, the Proposed Development will have a comparatively weak influence, giving rise to a negligible cumulative magnitude of change and a moderate/minor effect (not significant). Consented Beinn Mheadhonach will also have a very weak influence on the cumulative context and while application Ben Sca will have a stronger influence, it will be the weak</p>						

influence of the Proposed Development that will ensure the magnitude of change won't rise above negligible for this scenario. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this road, as presented in the 2014 ES. This will be moderate/minor (not significant).

Core Path SL28.01

Glen Ullinish + Operational Wind Farms	High	High	Major	High	High	Major
Glen Ullinish + Operational, Consented Wind Farms		High	Major		High	Major
Glen Ullinish + Operational, Consented, Application Wind Farms		High	Major		High	Major

The main cumulative influence on walkers on this core path occurs between the coniferous woodland to the east of Balmeanach and Glen Vic Askill, where operational Edinbane will be experienced at close range to the north, with some limited visibility of Ben Aketil further to the north-west. In respect of the Consented Development, the cumulative magnitude of change was assessed as high and the effect major (significant). In the reassessment of the Proposed Development, there has been no change to the operational cumulative wind farms, and although the larger turbines will be evident, the assessment of the Proposed Development will remain high and the effect major (significant). The limited influence of consented Beinn Mheadhonach and application Ben Sca means that they will have a limited influence on the cumulative assessment of the further two scenarios. The Proposed Development would not alter the findings of the cumulative assessment of the effects of the Consented Development on this core path, as presented in the 2014 ES. This will be major (significant).

6.7 Conclusion

The purpose of this LVIA Report has been to identify where there is any change to the previous findings of the LVIA for the Consented Development and assess the likely significant effects as a result of the proposed changes to the Proposed Development; namely the removal of three turbines, the relocation of a further four turbines; the variation in their maximum blade tip height from 119m to 149.9m and relocation of some infrastructure.

The Proposed Development compared to the Consented Development generally occupies a similar horizontal extent when seen from the surrounding landscape and principal visual receptors, albeit with a visible increase in the vertical extents owing to the larger size of the turbines, most evident through a comparison of the blade lengths. The reduction in the number of turbines from 14 to 11 means that there is a reduction in the density of the layout which has generally reduced overlapping of turbines and in some instances improved spacing.

The comparative ZTVs presented in Figures A6.5 to A6.8 illustrate the very limited increase in the geographical extent of theoretical visibility of the Proposed Development when compared to theoretical visibility of the Consented Development. The figures show narrow margins being added around facing slopes and seascape and this relates to the increase in the size of the turbines.

There are very few changes to the findings of the LVIA presented in the 2014 ES. Those changes that have been assessed relate partly to the incremental increase in the size of the turbines and partly to differences in professional judgement. While the same methodology used in the LVIA presented in the 2014 ES, has been applied in this LVIA Report, there are a small number of considerations in which a difference of professional judgement has occurred and these are highlighted in the text.

In respect of the physical effects on the Upland Pasture / Moorland of the site, the Proposed Development will give rise to a moderate or not significant effect. This finding concurs with the findings of the 2014 ES and relates to the small proportion of the site that will be affected by the construction and operation of the Proposed Development.

In respect of effects on landscape character, the assessment of the Proposed Development broadly concurs with the assessment of the Consented Development, with moderate, moderate/minor, minor or negligible effects presenting not significant effects across the majority of the 10km study area, covering the following LCTS; Rocky Moorland (SKL2), Coniferous Woodland Plantation (SKL11), Linear Crofting (SKL13), Scattered Crofting (SKL14), Harbour Settlement (SKL15) and Rural Estate (SKL16). While the assessment of the Proposed Development agrees with the finding of the assessment of the Consented Development, that the wider extents of the Stepped Moorland (SKL1a) and Smooth Moorland (SKL1b) LCTs will not be significantly affected, it has identified localised significant effects in those parts of these LCTs closest to the Proposed Development, defined broadly as the area between Glen Ullinish and Ben Scudag in respect of the Stepped Moorland (SKL1a) and the area between Glen Ullinish and Glen Vic Askill in respect of the Smooth Moorland (SKL1b). This finding, while partly reflecting the additional influence of the increase in size of the proposed turbines, also relates to differences in professional judgement.

In respect of effects on landscape designations, the assessment of the Proposed Development broadly concurs with the assessment of the Consented Development in that the wider area of the North West Skye SLA will not be significantly affected, but does diverge in its finding that there will be a localised significant effect within the closest part of this SLA around Loch Bracadale at a range of 2 to 5km from the closest turbine. This finding relates principally to a difference in professional judgement rather than the increase in the size of the turbines, although this will add incrementally to the overall effect. This LVIA Report also concurs with the finding of the 2014 ES that there will be no significant effects on both the Greshornish SLA and the Duirinish WLA, largely owing to the greater separation distance between these areas and the Proposed Development.

In respect of effects on the nine representative viewpoints reassessed in this LVIA Report, six remain unchanged in terms of the significance of effects, while three have been changed to significant, when assessed originally as not significant. In the 2014 ES, Viewpoint 1: Balmeanach was assessed as significant, Viewpoint 3: Feorlig was assessed as borderline significant / not significant and Viewpoint 12; MacLeod's Table as not significant. The assessment of the Proposed Development has not changed these findings. In the 2014 ES, Viewpoint 2: Harlosh, Viewpoint 7: Ose and Viewpoint 8: Gearymore, were also assessed as significant, and while the assessment of the Proposed Development also finds the effects on these viewpoints as significant, in each case there has been a slight increase in the magnitude of change, owing to the increase in the size of the turbines.

In the 2014 ES, Viewpoint 5: Glen Heysdal, Viewpoint 9: Fiskavaig and Viewpoint 10: Idrigill Point were assessed as not significant. In this LVIA Report, the slight increase in the size of the turbines has given rise to a slight increase in the magnitude of change and in these instances, this has tipped the assessment of significance from not significant to significant. These changes in the finding also partly relate to a difference in professional judgement.

In respect of effects on the visual amenity of residential properties within or close to a 2km radius, the assessment of the Consented Development found that significant effects would arise in relation to six of the ten properties. The assessment of the Proposed Development was generally in accordance with the findings of the original assessment, albeit with two properties changing from not significant to significant. The close proximity of the properties to the Proposed Development means that the effect of the larger turbines would give rise to a stepped increase in magnitude of change for seven of the properties but only changing the conclusion of the assessment for two from not significant to significant.

The principal visual receptors which have been assessed include settlements, roads and core paths within a 10km radius. The assessment of the Consented Development found that only two of the 12 settlements would be significantly affected. The assessment of the Proposed Development has found that in addition to these two close range settlements, namely Gearymore and Ose, that a localised significant effect would occur across the eastern side of Harlosh, but that all other settlements would either undergo no effect, owing to no visibility, or not be

significantly affected. While there is no change to the assessment of no significant effects on the A850, there is an increase in the extent of the significant on the A863, owing to the larger turbines. An assessment of the effects on Core Path SL28.01 has been included with the finding being that a significant effect would occur over a localised and close range section between the coniferous plantation and Glen Vic Askill.

In respect of cumulative effects, the Proposed Development has been reassessed within a changed cumulative context in which consented Beinn Mheadhonach and application Ben Sca are included alongside previously considered operational Ben Aketil and Edinbane wind farms, as well as other smaller scale developments. The assessment of the Consented Development had found that eight of the nine viewpoints would not undergo significant cumulative effects, with significant effects occurring only at Viewpoint 12: MacLeod's table. The assessment of the Proposed Development identified the same magnitude of change and not significant effect at five of the nine viewpoints. At Viewpoint 9: Fiskavaig, the effect was also found to be not significant despite an increase in the magnitude of change from negligible to low. At Viewpoint 12: MacLeod's Table, the effect was found to be not significant, owing to a reduction in the magnitude of change from medium to low, relating to a difference in professional judgement rather than any changes to the Proposed Development or cumulative context. At Viewpoint 5: Glen Heysdal and Viewpoint 8: Gearymore, an increase in the cumulative magnitude of change from low to medium related largely to the closer range of these viewpoints and the additional influence of the larger turbines within the context of an already influential cumulative situation. These changes meant that the effects at these viewpoints were changed from not significant, to significant. Of the two roads and one core path that were reassessed in respect of the Proposed Development, the findings concurred with the findings of the assessment of the Consented Development, with a significant cumulative effect arising in relation to the A863 and Core Path SL28.01 and a not significant effect arising in relation to the A850.

In conclusion, the changes to the Proposed Development are relatively incremental, with the only notable differences being three fewer turbines, albeit with the remaining 11 being of a larger size. While this has given rise to a slight increase in the extent of the threshold between significant and not significant effects, this change relates principally to the increase in the size of the turbines but also, in a small number of instances, to a difference in professional judgement with a more cautionary approach being applied.

7 Noise

7.1 Introduction

Glen Ullinish Wind Farm was granted consent on 24th August 2015 (application ref. no. 14/03964/FUL) which included planning conditions relating to operational noise. It is understood that Muirhall Energy Ltd, the developers of the site, are submitting a Section 42 application to amend the conditions to enable the installation of turbines with a higher tip height.

This report compares predicted operational noise levels for a candidate wind turbine model that fits the dimensions of the proposed taller turbines (with a tip height of 149.9 m), with the noise limits set out in the planning conditions.

It is not proposed to change the planning conditions relating to noise, and the noise impact assessment presented in this report demonstrates that the relevant noise limits can still be met with the taller proposed wind turbines.

7.2 Planning Policy and Guidance

7.2.1 Planning Advice Note PAN1/2011, Planning and Noise

PAN1/2011¹¹ identifies two sources of noise from wind turbines; mechanical noise and aerodynamic noise. It states that “good acoustical design and siting of turbines is essential to minimise the potential to generate noise”. It refers to the ‘web-based planning advice’ on renewables technologies for onshore wind turbines.

7.2.2 Scottish Government 2014, Web Based Planning Advice, Onshore Wind Turbines

The Web Based Planning Advice¹² (The Scottish Government, 2014) on onshore wind turbines re-iterates the sources of noise as “the mechanical noise produced by the gearbox, generator and other parts of the drive train and the aerodynamic noise produced by the passage of the blades through the air” and that “there has been significant reduction in the mechanical noise generated by wind turbines through improved turbine design”. It states that “the Report, “The Assessment and Rating of Noise from Wind Farms” (Final Report, Sept 1996, DTI), (ETSU-R-97), describes a framework for the measurement of wind farm noise, which should be followed by applicants and consultees, and used by planning authorities to assess and rate noise from wind energy developments, until such time as an update is available”. It notes that “this gives indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable burdens on wind farm developers, and suggests appropriate noise conditions”.

It introduces the Institute of Acoustics (IOA) A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, and states that “The Scottish Government accepts that the guide represents current industry good practice”.

For construction noise, the accompanying Technical Advice Note¹³ to PAN1/2011, Assessment of Noise, lists BS 5228, Noise and Vibration Control on Construction and Open Sites as being applicable for Environmental Impact Assessment (EIA) and planning purposes

7.2.3 The Assessment and Rating of Noise from Wind Farms: ETSU-R-97

ETSU-R-97, *The Assessment and Rating of Noise from Wind Farms*¹⁴, presents the recommendations of the Working Group on Noise from Wind Turbines, set up in 1993 by the Department of Trade and Industry (DTI) as a result of difficulties experienced in applying the noise guidelines existing at the time to wind farm noise assessments. The group comprised independent experts on wind turbine noise, wind farm developers, DTI personnel and local authority Environmental Health Officers. In September 1996 the Working Group published its findings by way of report ETSU-R-97. This document describes a framework for the measurement of wind farm noise and contains suggested noise limits, which were derived with reference to existing standards and guidance relating to noise emission from various sources.

ETSU-R-97 recommends that, although noise limits should be set relative to existing background and should reflect the variation of both turbine and background noise with wind speed; this can imply very low noise limits in particularly quiet areas, in which case, “it is not necessary to use a margin above background in such low-noise environments. This would be unduly restrictive on developments which are recognised as having wider global benefits. Such low limits are, in any event, not necessary in order to offer a reasonable degree of protection to the wind farm neighbour.”

For day-time periods, the noise limit is 35-40 dB LA90 or 5 dB(A) above the ‘quiet day-time hours’ prevailing background noise, whichever is the greater. The actual value within the 35-40 dB(A) range depends on the number of dwellings in the vicinity; the impact of the limit on the number of kWh generated; and the duration of the level of exposure.

For night-time periods the noise limit is 43 dB LA90 or 5 dB(A) above the prevailing night-time hours background noise, whichever is the greater. The 43 dB(A) lower limit is based on an internal sleep disturbance criteria of 35 dB(A) with an allowance of 10 dB(A) for attenuation through an open window and 2 dB(A) subtracted to account for the use of LA90 rather the LAeq (see forthcoming paragraph).

Where predicted noise levels are low at the nearest residential properties a simplified noise limit can be applied, such that noise is restricted to the minimum ETSU-R-97 level of 35 dB LA90 for wind speeds up to 10 m/s 10 m height. This removes the need for extensive background noise measurements for smaller or more remote schemes.

It is stated that the LA90,10min noise descriptor should be adopted for both background and wind farm noise levels and that, for the wind farm noise, this is likely to be between 1.5 and 2.5 dB less than the LAeq measured over the same period. The LAeq,t is the equivalent continuous ‘A’ weighted sound pressure level occurring over the measurement period ‘t’. It is often used as a description of the average ambient noise level. Use of the LA90 descriptor for wind farm noise allows reliable measurements to be made without corruption from relatively loud, transitory noise events from other sources.

ETSU-R-97 also specifies that a penalty should be added to the predicted noise levels, where any tonal component is present. The level of this penalty is described and is related to the level by which any tonal components exceed the threshold of audibility.

With regard to multiple wind farms in a given area, ETSU-R-97 specifies that the absolute noise limits and margins above background should relate to the cumulative impact of all wind turbines in the area contributing to the noise

¹¹ Planning Advice Note PAN1/2011, Planning and Noise, Scottish Government, 2011

¹² <https://www2.gov.scot/Resource/0045/00451413.pdf> (accessed 08/02/2019)

¹³ <https://www2.gov.scot/Resource/Doc/343341/0114220.pdf> (accessed 08/02/2019)

¹⁴ ETSU-R-97 *The Assessment and Rating of Noise from Wind Farms*, Department of Trade and Industry, 1996

received at the properties in question. Existing wind farms should therefore be included in cumulative predictions of noise level for proposed wind turbines and not considered as part of the prevailing background noise.

7.2.4 *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*

In May 2013, the Institute of Acoustics (IOA) published *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*¹⁵, as referred to in the Web Based Planning Advice. This was subsequently endorsed by the Secretary of State for Energy and Climate Change and by the Scottish Ministers. The publication of the Good Practice Guide (GPG) followed a review of current practice¹⁶ carried out for the Department of Energy and Climate Change (DECC) and an IOA discussion document¹⁷ which preceded the GPG.

The GPG includes sections on Context; Background Data Collection; Data Analysis and Noise Limit Derivation; Noise Predictions; Cumulative Issues; Reporting; and Other Matters including Planning Conditions, Amplitude Modulation, Post Completion Measurements and Supplementary Guidance Notes. The Context section states that the guide “presents current good practice in the application of the ETSU-R-97 assessment methodology for all wind turbine development above 50 kW, reflecting the original principles within ETSU-R-97, and the results of research carried out and experience gained since ETSU-R-97 was published”. It adds that “the noise limits in ETSU-R-97 have not been examined as these are a matter for Government”.

As well as expanding on and, in some areas, clarifying issues which are already referred to in ETSU-R-97, additional guidance is provided on noise prediction and a preferred methodology for dealing with wind shear. The guidance within the GPG has been considered and followed for this assessment.

7.2.5 *Cumulative Noise*

Section 5.1 of the IOA GPG deals with cumulative noise, and re-iterates the position set out in ETSU-R-97 that “absolute noise limits and margins above background should relate to the cumulative effect of all wind turbines in the area which contribute to the noise received at the properties in question”.

The IOA GPG defines when a cumulative noise assessment is necessary and states that, “if the proposed wind farm produces noise levels within 10 dB of any existing wind farm/s at the same receptor location, then a cumulative noise impact assessment is necessary”. This is because if the predicted noise is more than 10 dB below that already existing (or the applicable noise limit) its contribution to the overall noise level is negligible.

7.3 *Assessment Criteria*

The original noise assessment presented at chapter 8 of the Environmental Statement (ES) was carried out with reference to the following documents, which remain the relevant policy and guidance documents for wind farm noise assessment.

- ETSU-R-97: *The Assessment and Rating on Noise from Wind Farms* (1997), Department of Trade and Industry
- *Noise Assessment Guidance for Wind Farms*, The Highland Council
- *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine*

¹⁵ Institute of Acoustics (IoA) 2014, *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*

¹⁶ DECC Research Contract 01.08.09.01/492A (Analysis), *Analysis of How Noise Impacts are Considered in the Determination of Wind Farm Planning Applications*, Department of Energy and Climate Change, 2011

Noise, The Institute of Acoustics.

- *Guidelines for Community Noise*, World Health Organisation, 1999

7.3.1 *Planning Conditions*

The noise limits for the site are set out at condition 21, and state that ‘*The rating level of noise immissions from the combined effects of the wind turbines hereby granted (including the application of any tonal penalty), when determined in accordance with the attached Guidance Notes, shall not exceed 35 dBLA90, 10-min at any wind speed up to 10m/s at any noise sensitive property existing or with the benefit if [sic] planning permission at the time of the permission. The exception to this is the property Glen Vic Askill where the rating level of noise immissions shall not exceed 45 dBLA90, 10-min at any wind speed up to 10m/s*’.

It should be noted that the noise limits set out in the planning conditions relate to operational noise from the Glen Ullinish wind turbines only, and not to the combined effect with other nearby operational or consented wind turbines.

7.3.2 *Assessment Criteria for this Section 42 Application*

The noise limits set via the planning conditions attached to the original Glen Ullinish Wind Farm consent¹⁸ took into account the original noise assessment which was carried out according to national policy and guidance that is still applicable. Therefore the limits set via the planning conditions are still valid and applicable to this application and predicted operational noise levels have been compared with these.

7.3.3 *Cumulative Noise*

As noted previously, the noise limits apply to Glen Ullinish Wind Farm only, and were set by the Highland Council taking into account the cumulative wind farm situation in 2015.

It is understood that there has been no change to the nearby operational Ben Aketil and Edinbane Wind Farms which are the nearest wind farms to the consented Glen Ullinish Wind Farm, and therefore a further cumulative noise assessment for these sites is not required.

There are two additional wind farms in the vicinity that have been considered; Beinn Mheadonach and Ben Sca. Beinn Mheadonach was consented in August 2019 with a fixed noise limit of 35 dB L_{A90} (for properties not financially involved with the scheme). A planning application has been submitted for the proposed Ben Sca Wind Farm, but it is yet to be determined. It should be noted that as Glen Ullinish has planning consent, it would be for any wind farms developed in the area since the original grant of consent in 2015 to ensure that their noise assessment and consented noise limits take into account the consented Glen Ullinish Wind Farm noise limits. This was assumed in the Ben Sca noise assessment presented in the EIA Report, and it is assumed that the Highland Council considered the cumulative noise situation in setting the Beinn Mheadonach noise limits.

Nevertheless, predicted noise levels arising from the operation of the Beinn Mheadonach and Ben Sca have been reviewed, and are each below 25 dB L_{A90} at any of the properties considered in this noise assessment, and hence their noise impact can be considered to be insignificant. Furthermore, there are no properties near to either development that could be simultaneously downwind of Glen Ullinish and either wind farm simultaneously, such

¹⁷ Discussion Document on *A Good Practice Guide to the Application of ETSU-R-97 for Wind Turbine Noise Assessment*, Institute of Acoustics, July 2012

¹⁸ Planning permission granted 24th August 2015, planning application reference number 14/03964/FUL.

that the impact in practice would be lower once wind direction is taken into account.

7.4 Prediction Assumptions and Source Data

Operational noise predictions have been carried out following the requirements of the Institute of Acoustics document, *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Noise from Wind Turbines*, i.e. based on the methodology prescribed in ISO 9613-2, with an added confidence interval of 1.5 dB on the source noise data, and assuming a ground factor of G=0.5. The prediction methodology is described in Appendix A.

The turbine locations for the proposed development are shown at **Table A7.1**, with the corresponding sound power levels and octave band spectrum used are presented at **Table A7.2** and **Table A7.3** respectively. The sound power levels in **Table A7.2** and **Table A7.3** include the +1.5 dB confidence interval. The Nordex N133 4.8 MW turbine was chosen for the assessment as it represents a reasonable worst-case assumption to ensure a conservative assessment: There are other turbines available that fit the dimensions of the scheme with a lower sound power level.

Table A7.1: Turbine Locations & Details

Turbine	Easting	Northing	Hub-Height (m)	Candidate Turbine Model	Capacity
1	133696	841273	83	Nordex N133	4.8 MW
2	133767	841702	83	Nordex N133	4.8 MW
3	134072	841577	83	Nordex N133	4.8 MW
5	134601	842035	83	Nordex N133	4.8 MW
6	134996	842200	83	Nordex N133	4.8 MW
8	135361	842493	83	Nordex N133	4.8 MW
9	135183	842824	83	Nordex N133	4.8 MW
10	135780	842755	83	Nordex N133	4.8 MW
12	135399	843240	83	Nordex N133	4.8 MW
13	136005	843107	83	Nordex N133	4.8 MW
14	135805	843377	83	Nordex N133	4.8 MW

Table A7.2: Octave Band Noise Spectra, dB L_{WA,eq}

Candidate Turbine	Overall (dB L _{WA})	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
Nordex N133 4.8 MW ¹⁹	107.5	89.3	96.3	100.1	101.0	101.4	100.2	95.9	86.7

Table A7.3: Candidate Turbine Source Sound Power Levels, dB L_{WA}

Candidate Turbine	Standardised 10 m Height Wind Speed (m/s)									
	4	5	6	7	8	9	10	11	12	
Nordex N133 4.8 MW ²⁰	95.7	101.2	105.4	107.5	107.5	107.5	107.5	107.5	107.5	

The results of the noise predictions are shown as noise contours in **Figure A7.1**, valid for wind speeds of 7 m/s

¹⁹ Taken from Document: F008_272_A14_EN_R01_Nordex_N133_4.8.pdf - 7 m/s Mode 0 Spectrum, 83 m hub height and with serrated trailing edges

upwards, and assume downwind propagation in all directions, but do not include topography or concave ground profile corrections.

7.5 Prediction Results and Assessment

The receptor locations were taken from the original Environmental Statement (ES) but updated to represent the nearest reasonable curtilage of the properties to the proposed Glen Ullinish wind turbines. The properties for which noise was assessed in the ES appear to be a selection of the nearest residential properties, rather than including all such properties. It should, therefore, be noted that there are some residential properties not included in the assessment that will experience similar operational noise levels to those which are listed.

The results of the noise predictions are shown in **Table A10.4**, together with the co-ordinates of the listed properties, the relevant noise limit, and margin to the limit. A concave ground profile triggering the IOA GPG criterion between location H01 and turbine 14 was identified, and a plus 3 dB correction has been applied.

Table A7.4: Property Locations and Prediction Results at 10 m/s

Property ID	Easting	Northing	Predicted Noise Level (dB L _{A90})	Applicable Noise Limit (dB L _{A90})	Margin to Limit
H01 ²¹	135968	844298	39	45	6
H02	133142	843705	33	35	2
H03	132961	843595	32	35	3
H04	132498	843532	31	35	4
H05	132112	843338	30	35	5
H06	131915	843234	30	35	5
H07	131611	843102	29	35	6
H08	131515	843023	29	35	6
H09	131431	841242	29	35	6
H10	130995	841090	27	35	8
H11	131527	841073	29	35	6
H12	132204	841426	33	35	2
H13	131839	841164	31	35	4
H14	131546	841005	29	35	6
H15	131568	840694	29	35	6
H16	131691	840610	29	35	6
H17	131589	840558	29	35	6
H18	131519	840485	29	35	6
H19	132044	840681	31	35	4
H20	131959	840588	31	35	4
H21	132615	839291	29	35	6
H22	132417	839036	27	35	8
H23	132262	839054	27	35	8
H24	131876	839233	27	35	8

²⁰ Assuming a hub height of 83 m and with serrated trailing edges and including plus 1.5 dB uncertainty

²¹ It is understood that this property is Glen Vic Askill and is financially involved with the development.

Property ID	Easting	Northing	Predicted Noise Level (dB L _{A90})	Applicable Noise Limit (dB L _{A90})	Margin to Limit
H25	131651	839536	27	35	8
H26	131308	839465	26	35	9
H27	135259	838711	28	35	7
H28	135438	839104	29	35	6
H29	135823	839231	29	35	6

The results of the operational noise predictions show that the relevant noise limits are met at all properties assessed by a minimum margin of 2 dB.

The operational noise predictions assume downwind propagation. For propagation conditions other than downwind, noise levels will be lower. In addition, at lower winds speeds when the turbines are operating with a lower sound power level, operational noise levels will be lower.

7.5.1 Tonal Noise

The planning conditions include a penalty that is added to the measured noise level in the event that there is audible tonal noise from the wind turbines. This assessment assumes that there is no tonal noise from the proposed wind turbines and it is recommended that a warranty should be sought from the turbine manufacturer for the turbine selected for the site that there would be no tonal noise at residential properties emanating from the wind turbines that would give rise to a penalty according to the planning conditions, which should be warranted by the turbine supplier for the site.

7.6 Conclusions

The results of the operational noise predictions assuming the use of a reasonable worst-case candidate turbine, which fits the dimensions of the amended turbine specification, at the consented Glen Ullinish Wind Farm show that predicted noise levels at all assessed properties are below the noise limits set via the planning conditions attached to the original consent.

The planning condition noise limits contain a penalty scheme for tonal noise. This assessment assumes that there would be no tonal noise from the turbines that would require a penalty according to the planning conditions.

8 Cultural Heritage

8.1 Introduction

This Chapter should be read in conjunction with Chapter 9 of the 2014 ES and considers the likely impact of the proposed variations on features of historical significance. Cultural heritage is represented by a wide range of features, both above and below ground, which result from historic human use of the landscape. Such features include standing buildings, many still in use, sub-surface archaeological remains and artefact scatters. These also include earthwork monuments as well as landscape features such as field boundaries and industrial remains.

8.2 Consented Development Direct Impact Conclusion

The 2014 ES concluded the following in relation to direct impacts on historic features of significance:

*The proposed development is the result of a thorough design process which aimed to avoid direct impacts on known historic features of significance (Chapter 3: Project Design Considerations). The potential direct impacts of the development have been assessed by Ross and Cromarty Archaeology Service (RoCAS) and suitable mitigation measures have been proposed which will reduce the potential construction phase disruption upon the features identified.*²²

8.3 Update to Direct Impact

An assessment has been undertaken within the site boundary to determine if any new cultural heritage assets have been identified since submission of the original proposal. The search has returned one additional asset, a Broch named Dun Arkaig (SM13622) which was officially designated in 2017²³. This designation was confirmed after the original planning submission of Glen Ullinish Wind Farm but prior to the decision notice. The designation of the Broch was known to The Highland Council at this time. Dun Arkaig is located 230m south west of Turbine 9 (as proposed) and no direct impact is foreseen on this asset.

8.4 Consented Development Indirect Impact Conclusion

The 2014 ES concluded the following in relation to indirect direct impacts on historic features of significance:

*The indirect visual impact on all features within the study area has been assessed to be **moderate/minor** which is not significant in EIA terms, with the exception of Barpinnan chambered cairns (SM 13) where the impact was assessed to be **moderate**.*

*The overall impact of the proposed development upon features captured in the same view as the development is considered to be **moderate** for Dun Beag broch (SM 2) and **moderate/minor** for Dunvegan Castle (LB 1). The project has been designed to appear alongside the two nearby wind farms, consequently the cumulative impacts of the proposed development are considered to be **moderate/minor**, with an overall **moderate** cumulative impact upon Barpinnan chambered cairns (SM 13).*

*Although the assessment has concluded that the overall impact upon Dun Beag broch (SM 2) and Barpinnan chambered cairns (SM 13) would be **moderate** the proposed Glen Ullinish Wind Farm would not be visible without the currently operational Edinbane and Ben Aketil in the view. The operational wind farms contribute to the current*

*settings of both Dun Beag broch (SM 2) and Barpinnan chambered cairns (SM 13). It is therefore concluded that the proposed Glen Ullinish Wind Farm would not significantly contribute to the cumulative aspects in views to and from Dun Beag broch (SM 2) and Barpinnan chambered cairns (SM 13).*²⁴

8.5 Update to Indirect Impact

The 2017 designation of Dun Arkaig generates a new indirect impact relative to the 2014 ES. Given the proximity of the Broch to the proposed turbines the development will have a **major** effect on this asset. However, this would also be the case with the Consented Development.

Dun Arkaig aside, indirect impacts to features of historical significance are assessed to be insignificant. Although an increase in tip height is proposed, the reduction in turbine numbers is considered a counter measure and balancing factor. At all 14 viewpoint locations assessed by the 2014 ES, the maximum number of turbines visible is reduced by the proposed variations. However, the visible turbines will appear larger. See **Figures A8.1 and A8.2** for further detail.

Indirect impacts are also minimised by the reduction of on-site infrastructure enabled by fewer turbines. In addition to the removal of three turbines, approximately 2.0km of access track can be omitted thus reducing the visual impact of the development when viewed from multiple heritage assets, particularly those in close proximity to the site.

Overall, it is assessed the proposed changes have a limited impact on the original conclusions. The reduction in turbine numbers and associated infrastructure is offset by the increase in tip height. The impact is therefore dependant on a subjective assessment of the impact of height relative to the total quantity of infrastructure visible.

No changes to the conditions stipulated by the original planning consent, namely 13 and 14, are proposed.

²² Glen Ullinish Wind Farm Volume 1: Environmental Statement, Section 9.11.1

²³ Highland Historic Environment Record, SM13662 Dun Arkaig, <https://her.highland.gov.uk/Source/SHG27809>

²⁴ Glen Ullinish Wind Farm Volume 1: Environmental Statement, Section 9.11.2

9 Hydrology and Hydrogeology

9.1 Introduction

This Chapter should be read in conjunction with Chapter 10 of the 2014 ES and considers the likely impact of the proposed variations on hydrology and hydrogeology. The risk of polluting or disrupting watercourses, groundwater bodies and private water sources has been assessed and suitably mitigated.

9.2 2014 ES Conclusion

The conclusion of Chapter 10 in the 2014 ES states:

The proposed Glen Ullinish Wind Farm has the potential to pose an impact to the surrounding Surface and Groundwater Hydrology and Hydrogeology. Impacts from the project are predominantly expected to occur where infrastructure is proposed, or in small areas directly adjacent. Substantial mitigation work was carried out as part of the design of the scheme during the EIA process, in cooperation with both SEPA and SNH. This first phase managed to alleviate several of the largest potential impacts. Where impacts still posed a risk to the surrounding environment, mitigation has been proposed for the construction, operation and decommissioning phases of the wind farm. No residual impacts of any major significance are expected to occur as a result of the development, subject to effective implementation of the proposed measures.²⁵

9.3 Mitigation and Consented Development Planning Conditions

Extensive mitigation measures are set out within Chapter 10 of the 2014 ES and remain valid to this application. They are subsequently captured within Condition 7 of the original planning consent (14/03964/FUL) which requires a Construction Environment Management Document to be submitted to the Planning Authority on consultation with SNH and SEPA prior to the initiation of development.

9.4 Impact of Proposed Variations

Given the close alignment of the proposed development relative to the consented layout no additional impact is foreseen on hydrology or hydrogeology. Indeed, the deletion of three turbines and the removal of 2.km of access-track arguably reduces the impact of the Proposed Development on such issues. The increase in tip height is considered to have no effect. See **Figure 2.3** for a full layout comparison. Not only does the deletion of the northern access-track pull development away from the River Ose, it also reduces the required water crossings from 5 to 3. See **Table A9.1** for a full comparison of water crossings.

Table A9.1 Water Crossing Comparison

Water Crossing No.	Grid Ref	Type	Consented Development	Proposed Development
1	NG 3314 4009	Source of burn	Crossing Required	Crossing Required
2	NG 3364 4116	Burn, no existing crossing	Crossing Required	Crossing Required
3	NG 3422 4198	Small Burn, no existing crossing	Crossing Required	Crossing Not Required
4	NG 3440 4209	Small Burn, no existing crossing	Crossing Required	Crossing Not Required
5	NG 3544 4278	Burn, no existing crossing	Crossing Required	Crossing Required

9.5 NVC and GDTE Report

An updated and comprehensive National Vegetation Classification (NVC) and Groundwater Dependant Terrestrial Ecosystems (GWDTE) report is available in **Appendix A** of this application and is covered in **Section 4.4**.

The habitats present were generally found to be very similar to those recorded in 2012. A mixture of GWDTE classifications of 1, 2 & 3 are present on site. The great majority of these are outwith the 250m zone around turbine locations. The habitat around these locations is predominantly blanket sphagnum bog. The M17 and M19 blanket bog communities are a Class 3 GWDTE and the groundwater discharge is considered irrelevant and is fed by other water sources. These bogs are a mosaic of communities and are commonplace throughout parts of Western Scotland.

Where GWDTE classifications are present within 250m of turbines, **Appendix A** recommends that ‘micro siting is advisable when the exact route and turbine locations are being set out by engineers in order to highlight sensitive areas that need to be avoided’.

Please see **Appendix A** for further details.

²⁵ Glen Ullinish Wind Farm Volume 1: Environmental Statement (2014), Section 10.9

10 Traffic and Transport

10.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by Muirhall Energy Limited (Muirhall Energy) to undertake a survey of the approved delivery route for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Glen Ullinish Wind Farm, located to the north east of Struan on the Isle of Skye.

This access review is based upon a desk-based review of the access route to site and has not been informed by a site visit.

The Route Survey Report (RSR) has been prepared based upon the brief provided by Muirhall Energy. No liability is accepted for the use of information or details contained within this report by third parties.

The RSR has been prepared to help inform Muirhall on the issues associated with the development of the site with regards to off-site transport and access for AIL traffic. The report identifies the likely issues associated with AIL deliveries and notes that detailed design work for the mitigation will be required.

10.2 Site Location

The development site is located to the north east of Struan. **Figure A10.1** illustrates the general site location.

Figure A10.1: Site Location



10.3 Candidate Turbines

Muirhall Energy have indicated they wish to consider the most onerous turbine configurations for turbines at a tip height of 150m in this assessment. Having reviewed the turbine data provided by Muirhall Energy, PF have determined the worst-case components for assessment are the E138 blade and the Nordex N133 towers. The details of the components are summarised in **Table A10.1**.

Table A10.2: Turbine Size Summary

Component	Length (m)	Width (m)	Height (m)	Weight (t)
E 138 Blade	67.795	3.929	3.500	20,280
N133 Tower 1	21.020	4.300	4.300	66.300
N133 Tower 2	24.030	4.300	4.020	48.700
N133 Tower 3	34.240	4.020	3.260	50.400

10.4 Proposed Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Super Wing Carrier trailer to reduce the need for mitigation in constrained sections of the route.

Turbine blade deliveries have been assessed using a Goldhofer blade lifting trailer. This trailer has the ability to lift blades up to a maximum angle of 60 degrees, lifting blades over potential constraints and shortening the length plan view.

Towers would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing and top towers would be carried on a six-axle step frame trailer.

Figure A10.2: Super Wing Carrier Trailer



Figure A10.3: Blade lifter



Figure A10.4: Tower Trailer



10.5 Proposed Access Route

The most appropriate Port of Entry (POE) for the site is Kyle of Lochalsh. The port has been previously used for docking a large number of turbines components in the past.

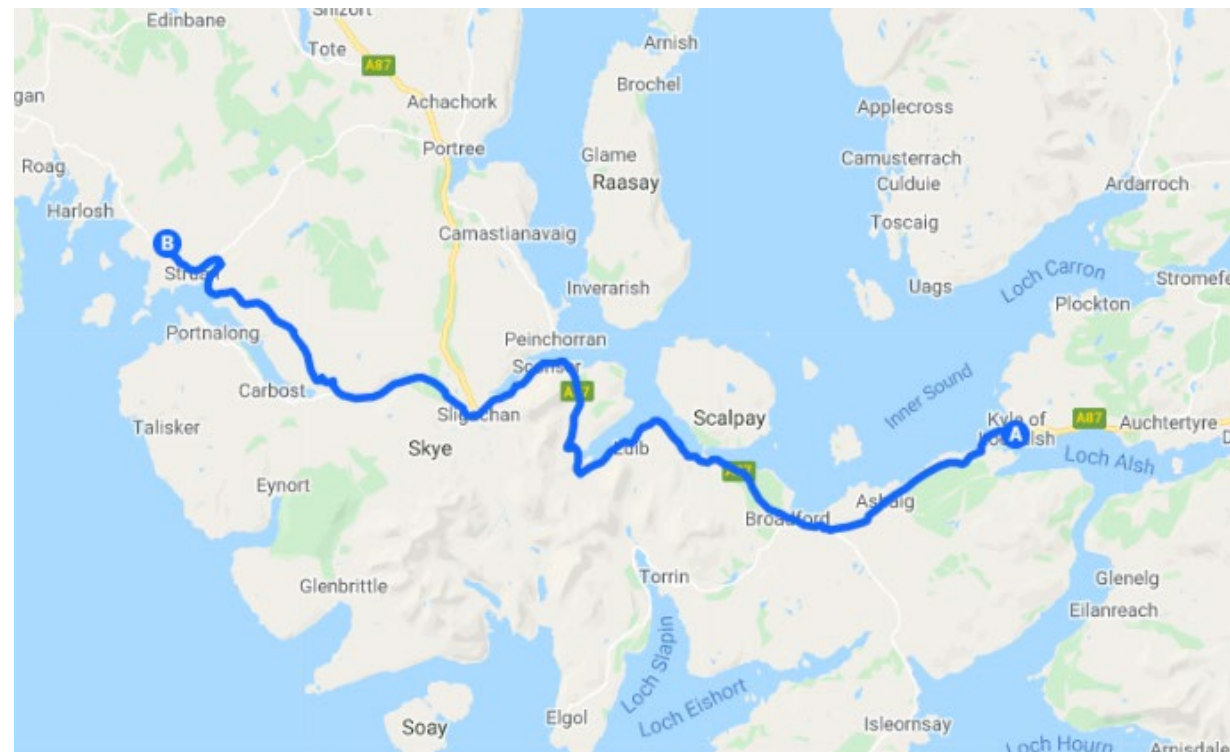
An alternative route has been assessed heading north from Sligachan to Portree following the A87. Loads would then join the A850 for approximately 18 miles until loads join the A863 heading south to the site. This route was discounted due to several pinch points.

The proposed access route to site is as follows:

- Loads will exit the port and turn left onto the A87;
- At the roundabout loads will take the 3rd exit and stay on A87;
- Loads would then continue on the A87 heading west;
- Loads will turn left onto A863;
- Loads will turn right into the site access junction.

The proposed route is illustrated in **Figure A10.5**.

Figure A10.5: Proposed Access Route





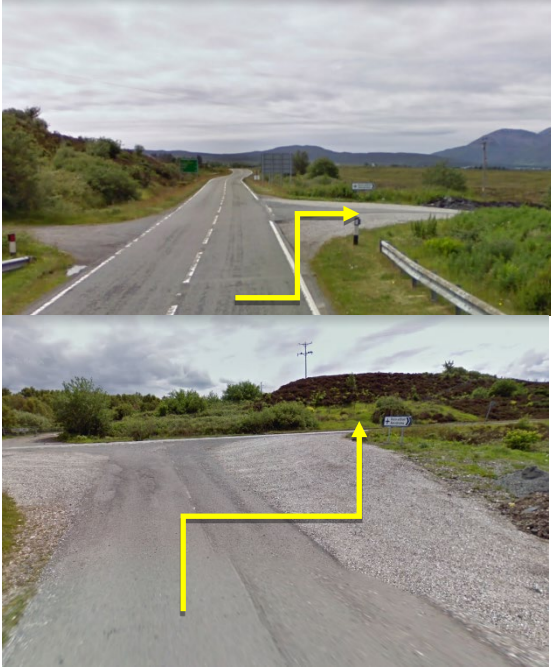


10.6 Route Constraints




The constraints noted on the site visit are detailed in **Table A10.2**. These cover all constraints from the port access gate through to the site access junction. No consideration of the transport issues within the port or within the development site have been undertaken and this includes the design of the site access junction.




Plans illustrating the location of the constraints and a detailed list of POI are provided in **Appendix E**.

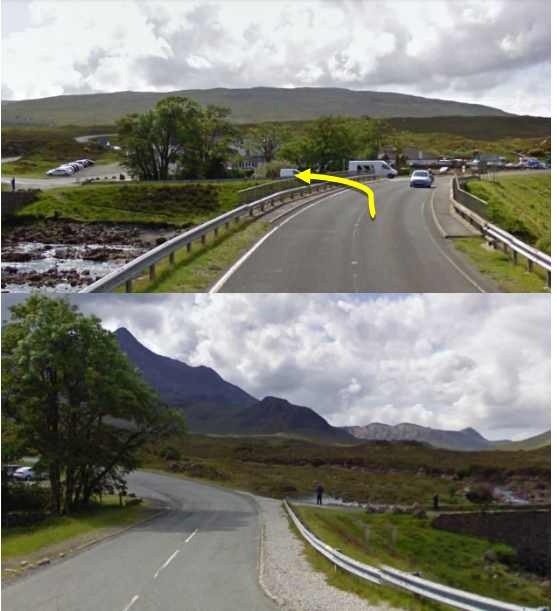
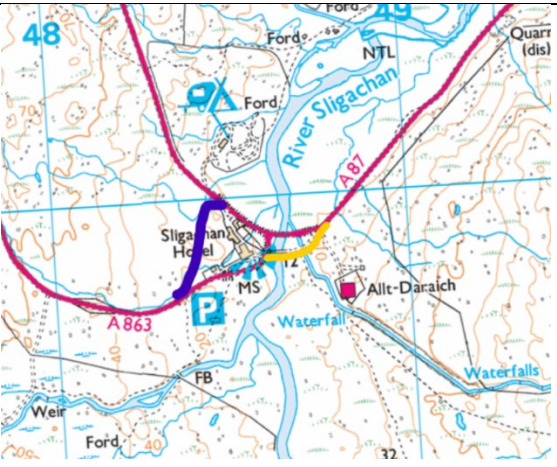
Table A10.3: Constraint Points and Details




POI	Key Constraint	Details
1	Kyle of Lochalsh 	<p>Blades will be delivered for this part of the journey using a blade adapter.</p> <p>Loads will exit the port and turn left at the junction onto the A87.</p> <p>Loads will oversail the railway line where all obstacles should be removed. A token system is run by Network Rail for temporary occupations and will need to be agreed prior to deliveries. Third party land is required.</p> <p>Loads will oversail north of the first bend where one lighting column and one road sign should be removed.</p> <p>Loads will oversail the north west of the first bend where a load bearing surface should be laid. Two lighting columns, one road sign and trees should be removed.</p> <p>Parking should be suspended on the south.</p> <p>Loads will overrun and oversail the northern verge of the second bend where a load bearing surface should be laid. Two lighting columns should be removed.</p> <p>Loads will overrun and oversail the eastern verge at the junction where a load bearing surface should be laid. The blade tip will oversail the street furniture.</p> <p>Loads will oversail the western verge at the junction where two traffic heads and a section of guardrail should be removed.</p> <p>Loads will overrun and oversail the northern verge where a load bearing surface should be laid. Guardrail, three road signs, one lighting column and two traffic heads should be removed.</p> <p>Swept path assessment SK01 is included in Appendix F.</p>



<p>2</p>	<p>Kyleakin Roundabout</p> 	<p>Loads will contra-flow the roundabout heading west.</p> <p>Loads will oversail the entry arm where loads will oversail one bollard.</p> <p>Loads will oversail the western verge where one lighting column should be removed. Loads will oversail the central island where the proximity to one chevron sign should be confirmed.</p> <p>Loads will oversail the exit arm splitter island where one lighting column should be removed.</p> <p>Swept path assessment SK02 is included in Appendix F.</p>	<p>4</p>	<p>Double bend north of Skulamus</p> 	<p>Loads will continue on the A87 heading west at this location.</p> <p>Loads will oversail both verges of the carriageway through the right bend where five road signs should be removed on the north.</p> <p>Loads will oversail both verges of the carriageway through the left bend where the blade tip will oversail a bollard on the north.</p> <p>Swept path assessment SK04 is included in Appendix F.</p>
<p>3</p>	<p>Broadford Aerodrome Junction</p> 	<p>Blades lifter loads will turn right into the junction and be transferred to a super wing carrier. Blade will turn right out of the junction heading south west.</p> <p>Blades @ 60 Degree – In bound Blades will oversail the southern verge where the blade tip will oversail two bollards and a section of barrier. Third party land may be required.</p> <p>Blades will oversail the inside of the junction where one bollard will be oversailed.</p> <p>Super wing carrier blade - Out bound Blades will oversail the eastern verge where third party land is required.</p> <p>Loads will oversail the western verge where two road signs should be removed. Third party land is required.</p> <p>Swept path assessment SK03 is included in Appendix F.</p>	<p>5</p>	<p>Double bend south of Waterloo</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads will oversail the northern verge of the right bend. Loads will overrun and oversail the southern verge where a load bearing surface should be laid in overrun areas.</p> <p>Loads will oversail both verges around the left bend where two lighting columns and one road sign should be removed on the north.</p> <p>Swept path assessment SK05 is included in Appendix F.</p>
			<p>6</p>	<p>Right bend Harrapool</p> 	<p>Loads will continue on the A87 heading west at this location.</p> <p>Loads will oversail the northern verge where the tree canopy should be trimmed.</p> <p>Swept path assessment SK06 is included in Appendix F.</p>



<p>7</p>	<p>A87 Double bend south east of Dunan</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads will oversail both verges of the carriageway, but no physical mitigation is required.</p> <p>Swept path assessment SK07 is included in Appendix F.</p>
<p>8</p>	<p>A87 Right bend south east of Dunan</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads will oversail the northern verge of the carriageway where two lighting columns and one road sign should be removed.</p> <p>Swept path assessment SK08 is included in Appendix F.</p>
<p>9</p>	<p>A87 Bends south east of Dunan</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads oversail the northern verge where no physical mitigation is required.</p> <p>Swept path assessment SK09 is included in Appendix F.</p>



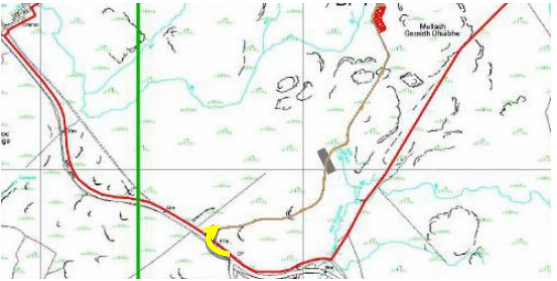
<p>10</p>	<p>A87 Right bend Blackhill</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads will oversail both verges of the carriageway where clearance to the rock face should be confirmed on the north.</p> <p>Swept path assessment SK10 is included in Appendix F.</p>
<p>11</p>	<p>A87 Left bend north of Blackhill</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads will oversail the northern verge where the proximity to the chevron signs should be confirmed and the blade tip will oversail the bollards.</p> <p>Loads will oversail the southern verge where clearance to the rock face should be confirmed through a topographical survey.</p> <p>Swept path assessment SK11 is included in Appendix F.</p>
<p>12</p>	<p>A87 Right bend north of Blackhill</p> 	<p>Loads will continue on the A87 at this location.</p> <p>Loads will oversail the northern verge where the traffic barrier should be removed.</p> <p>Loads will oversail the southern verge where three chevron signs should be removed. Blade tip will oversail traffic barrier and the clearance to rock face should be confirmed though topographical survey. Rock blasting may be required.</p> <p>Swept path assessment SK12 is included in Appendix F.</p>

<p>13</p>	<p>A87 / A863 Junction</p> 	<p>Loads will turn left onto the A863 at the junction.</p> <p>Loads will oversail the northern verge of the A87 where the proximity to the road signs should be confirmed. A section of barrier should be removed. Third party land required.</p> <p>Loads will oversail the eastern verge of the A863 where a section of barrier and one chevron sign should be removed. Third party land is required.</p> <p>Loads will overrun and oversail and overrun the western verge of the A863 where a load bearing surface should be laid, and trees trimmed. One road sign should be removed, and third-party land is required.</p> <p>Loads will continue to oversail the western verge through the bend where the proximity to the rock face should be confirmed and third-party land is required.</p> <p>Swept path assessment SK13 is included in Appendix F.</p>
<p>13</p>		<p>Given the constraints noted above for POI 13 we have considered two options which may be feasible.</p> <p>Orange Option Loads would use the alignment of the old road to bypass the 90degree at the junction with the A863. This option will require Third Party Land as two baily type bridges would need to be installed to cross the River Sligachan and it's tributary as the existing structure is likely to be unsuitable.</p> <p>Blue Option This would require the construction of a new access track bypassing the Sligachan hotel to the north. There are a number of water courses which would need to be culverted.</p> <p>Alternatively loads could continue along this section of the route using the blade</p>

		<p>adapter. However this would greatly slow down delivery of components and would require a transfer point to allow loads to be loaded onto a hybrid trailer after this pinch point.</p>
<p>19</p>	<p>A87 Portree Bend (Alternative route)</p> 	<p>Loads will turn right at the junction to stay on the A87 heading north.</p> <p>Loads will oversail the eastern verge where one lighting column should be removed. The blade tip will oversail the fence and third-party land is required.</p> <p>Loads will overrun and oversail the central splitter island where a load bearing surface should be laid. Tw2o road sign, one lighting column and one bollard should be removed.</p> <p>Loads will oversail the western footway where one road sign and a section of guardrail should be removed.</p> <p>Loads will overrun and oversail the north eastern verge north of the junction where a load bearing surface should be laid.</p> <p>Swept path assessment SK18 is included in Appendix F.</p>
<p>20</p>	<p>A87 Drumuie Bend (Alternative route)</p> 	<p>Load will continue on the A87 at this location.</p> <p>Loads will oversail both verges of the carriageway where two chevron signs should be removed, and the blade tip will oversail the traffic barrier on the south.</p> <p>Swept path assessment SK19 is included in Appendix F.</p>
<p>21</p>	<p>A850 Edinbane Bend (Alternative route)</p> 	<p>Loads will continue on the A850 at this location.</p> <p>Loads will oversail te northern verge where road signs should be removed.</p> <p>Swept path assessment SK20 is included in Appendix F.</p>

<p>22</p>	<p>A850 Junction east of Dunvegan (Alternative route)</p> 	<p>Loads will turn left at the junction onto the unnamed track.</p> <p>Loads will oversail the western verge of the A850 where two road signs should be removed. Third party land is required.</p> <p>Loads will overrun and oversail the inside of the junction where a load bearing surface should be laid and the blade will oversail the fence, third party land is required.</p> <p>Loads will oversail the western verge of the track where a section of fence should be removed. Third party land is required.</p> <p>The cattle grid should be reinforced to accommodate proposed loads.</p> <p>The existing track should be widened to 4.5m.</p> <p>Swept path assessment SK21 is included in Appendix F.</p>
<p>23</p>	<p>A863 Junction at Herebost (Alternative route)</p> 	<p>Loads will turn left out of the junction onto the A863.</p> <p>Loads will oversail the eastern verge where one road sign should be removed.</p> <p>Loads will overrun and oversail the western verge where a load bearing surface should be laid.</p> <p>The existing track should be widened to 4.5m.</p> <p>Loads will oversail the eastern verge on exiting the junction where one road sign should be removed.</p> <p>Swept path assessment SK22 is included in Appendix F.</p>
<p>14</p>	<p>A863 bends Drynoch</p>	<p>Loads will continue on the A863 at this location.</p> <p>Loads will oversail the eastern verge of the right bend where the proximity to the rock face should be confirmed.</p>

		<p>Loads will oversail the western verge of the right bend where one road sign should be removed.</p> <p>Loads will oversail on the inside of the left bend where a land search is recommended, and third-party land may be required.</p> <p>Loads will oversail the eastern verge of the left bend where the proximity to the rock face should be confirmed. Rock blasting may be required, and detailed design may also be required. The blade tip will oversail the traffic barrier and third-party land is required.</p> <p>Swept path assessment SK14 is included in Appendix F.</p>
<p>15</p>	<p>A863 bends Drynoch</p> 	<p>Loads will continue on the A863 at this location.</p> <p>Loads will oversail both verges of the carriageway around the first right bend where the proximity to the rock face should be confirmed on the east.</p> <p>Loads will oversail the northern verge of the left bend where the proximity to the rock face should be confirmed. The blade tip will oversail the traffic barrier and third-party land is required.</p> <p>Loads will oversail the southern verge of the left bend where a traffic barrier and fence should be removed. Third-party land is required.</p> <p>Loads will oversail the northern verge of the second right bend where the proximity to the rock face should be confirmed.</p> <p>Swept path assessment SK15 is included in Appendix F.</p>

<p>16</p>	<p>A863 Left bend north west of Drynoch</p> 	<p>Loads will continue on the A863 at this location.</p> <p>Loads will oversail both verges of the carriageway, but no physical mitigation is required.</p> <p>Swept path assessment SK16 is included in Appendix F.</p>
<p>17</p>	<p>A863 Left bend south of Coillore</p> 	<p>Loads will continue on the A863 at this location.</p> <p>No mitigation is required at this location.</p> <p>Swept path assessment SK17 is included in Appendix F.</p>
<p>18</p>	<p>Site Access</p> 	<p>Loads will turn right into the site access track at this location.</p> <p>The access junction and track should meet turbine manufacturer and local roads authority standards. Suitable visibility splays will need to be provided and it is envisaged that this will involve clear splays of at least 4.5m x 180m in both directions.</p>

10.7 Swept Path Assessment Results and Summary

The detailed swept path drawings for the locations assessed are provided in **Appendix F** for review. The drawings in **Appendix F** illustrate tracking undertaken for the worst case loads at each location.

The colours illustrated on the swept paths are:

- Grey / Black – OS / Topographical Base Mapping;
- Green – Vehicle body outline (body swept path);
- Red – Tracked pathway of the wheels (wheel swept path); and
- Purple – The over-sail tracked path of the load where it encroaches outwith the trailer (load swept path).

Where mitigation works are required, the extents of over-run and over-sail areas are illustrated on the swept path drawings.

Please note that where assessments have been undertaken using Ordnance Survey (OS) base mapping, there can be errors in this data source. Please note that PF cannot accept liability for errors on the data source, be that OS base mapping or client supplied data.

As a site visit was not undertaken, a test run is recommended to confirm the extents of the proposed mitigation works

10.8 Weight Review

A weight review should be undertaken via the ESDAL (Electronic Service Delivery for Abnormal Loads) contacts database using the Highways Agency website www.esdal.com, prior to loads being transported.

10.9 Land Ownership

The limits of road adoption can vary depending upon the location of the site and the history of the adopting agency. In general, the adopted area is that contained within a defined boundary where the local authority or trunk road agency holds the maintenance rights for the land from the original land owner. In urban areas, this usually defined as the area from the edge of the footway across the road to the opposing footway back edge.

In rural areas the area of adoption can be open to greater interpretation as defined boundaries may not be readily visible. In these locations, the general rule is that the area of adoption is between established fence / hedges lines or a maximum 2m from the road edge. This can vary between areas and every location can be different.

10.10 Access Junction Considerations

The access junction into the site will need to be widened to accommodate the proposed physical size of loads. The design changes to the junction will need to be discussed with the local highway authority and be built in accordance with the turbine supplier design criteria.

10.11 Summary Issues

It is strongly suggested that following a review of the report, Muirhall Energy should undertake the following prior to the delivery of the first abnormal loads, to ensure load and road user safety:

- That any necessary topographical surveys are undertaken, and the swept path results repeated;
- A review of axle loading on structures along the entire access route with the various road agencies is undertaken prior to the loads being transported;
- A review of clear heights with utility providers and the transport agencies along the route to ensure that there is sufficient space to allow for loads plus sufficient flashover protection (to electrical installations);
- That any verge vegetation and tree canopies which may foul loads is trimmed prior to loads moving;
- That a review of potential roadworks and or closures is undertaken once the delivery schedule is established in draft form;
- That a test run is completed to confirm the route and review any vertical clearance issues; and
- That a condition survey is undertaken to ascertain the extents of road defects prior to loads commencing to protect Muirhall Energy from spurious damage claims.

10.12 Summary of Access Review

Pell Frischmann have been commissioned by Muirhall Energy to prepare a Route Survey Report to examine the issues associated with the transportation of turbine components from the Kyle of Lochalsh Port through to the development site north east of Ebst.

This report identifies the key points and issues associated with the proposed route and outlines the issues that will need to be considered for successful delivery of components.

The access review has been based upon a worst case of E138 blade and the Nordex N133 tower sections and has been undertaken to eliminate, where at all possible, physical mitigation works.

The report is presented for consideration to Muirhall Energy. Various road modifications and interventions are required to successfully access the site. If these are undertaken, access to the consented wind farm site is considered feasible.

10.13 *Further Actions*

The following actions are recommended to pursue the transport and access issues further:

- Undertake the required topographical surveys and repeat the swept path assessments where required;
- Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Undertake discussion with the affected roads agencies; and
- Obtain the necessary statutory licences to enable the mitigation measures.

11 Socio-Economics and Tourism

11.1 Introduction

This Chapter should be read in conjunction with Chapter 14 of the 2014 ES and considers the likely impacts of the proposed variations on Socio-Economics and Tourism.

11.2 Updated Impact on Tourism

The Landscape and Visual Impact Assessment (Chapter 6 of this application) has assessed the effects on views from various landscape receptors and viewpoints across Skye. While the LVIA does identify an increased visual impact at a number of viewpoint locations, the overall impact is deemed incremental relative to the 2014 ES. It is not expected that this incremental step within an area of existing wind farm development will have a significantly different effect on tourism from that described in the 2014 ES.

11.3 Updated Economic Impact

Section 11.3 provides an updated assessment of the local employment opportunities and community benefits created by the Proposed Development. Economic gains are also assessed at both a local and national level.

These benefits arise from the expenditure required to construct, operate and decommission Glen Ullinish Wind Farm in addition to the income generated throughout its lifespan.

11.3.1 Local Employment Opportunities

Local employment opportunities include placing contracts with local contractors – a strength of Muirhall Energy and a strong business preference wherever possible. As such, the Proposed Development offers real scope for job creation whilst the use of local services during construction, operation and decommissioning is certain. Overall, the effect of the Proposed Development is assessed to have a **significant positive impact**, as per the original application.

11.3.2 Community Benefits

An established community benefit package has been agreed with a number of local communities totalling £250,000 per annum across the lifespan of the project. The provision of a generous community benefit package is considered to be a **significant positive impact**, an assessment unchanged from the original application. It is recognised that this is not a material consideration.

11.3.3 Local and National Economic Benefits

The proposed wind farm will generate Business Rates payable directly to The Highland Council. The level of rates payable is estimated to be in excess of the £300,000 per annum quoted in the 2014 ES. As a privately funded Scottish business, the financial proceeds generated by the development will be fed back into the National economy in the form of corporation tax and employment. The direct contribution towards both regional and national economies is considered to be a **significant positive effect** of the Proposed Development, as described in the 2014 ES.