



Statkraft

Oliver Forest Wind Farm

EIA Report – Volume 1 Non-Technical Summary

August 2024



Photomontage of Oliver Forest Wind Farm from south on the A701

Preface

This Environmental Impact Assessment (EIA) Report has been prepared in support of an application by Oliver Forest Wind Farm Limited (Ltd) (a company wholly owned by Statkraft UK Limited) ('the Applicant') to the Scottish Government Energy Consents Unit (ECU) for Section 36 consent to construct and operate Oliver Forest Wind Farm ('the Proposed Development') in Scottish Borders Council (SBC) administrative area.

The Proposed Development is located north-west of the A701 between Tweedsmuir and Glenbreck, approximately 12.5 km south of Broughton and approximately 19 km north of Moffat. The Proposed Development will comprise up to 7 wind turbines and other associated infrastructure (including battery storage).

The EIA Report comprises the following volumes:

- Volume 1: EIA Report Non-Technical Summary (NTS) (this document);
- Volume 2: EIA Report Written Statement;
- Volume 3a-c: EIA Report Figures; and
- Volume 4a-b: EIA Report Technical Appendices.

In addition to the above, the application is accompanied by a Planning Statement, a Design and Access Statement and a Pre-Application Consultation (PAC) Report.

A hard copy of the EIA Report will be available for public viewing during the application consultation period at the following addresses:

- Scottish Borders Council, Bowden Road, Newtown St Boswells, Melrose, TD6 0SA.
- Biggar Library, Market Road, Biggar ML12 6FX.

A copy of the EIA Report Volumes will be made available for download from the project website at: www.oliverforestwindfarm.com

Paper copies of the NTS are available free of charge from:

SLR Consulting Limited
Office 6.01,
Clockwise Offices,
Savoy Tower,
77 Renfrew Street,
Glasgow,
G2 3BZ.
Tel: 03300 886631
Email: fscott@slrconsulting.com

Paper copies of the EIA Report may be purchased by arrangement from the above address for £1,500 per copy, or £15 per disk/USB memory stick copy. The charge reflects the cost to produce the document or USB.

Any public representations to the application may be submitted via the ECU website at www.energyconsents.scot/Register.aspx; by email to the Scottish Government, Energy Consents Unit mailbox at representations@gov.scot; or by post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds for representation.

The Applicant will advertise the submission of the Section 36 application in the local and national press and on the dedicated project website. The advert will state the deadline for submitting representations to Scottish Ministers.

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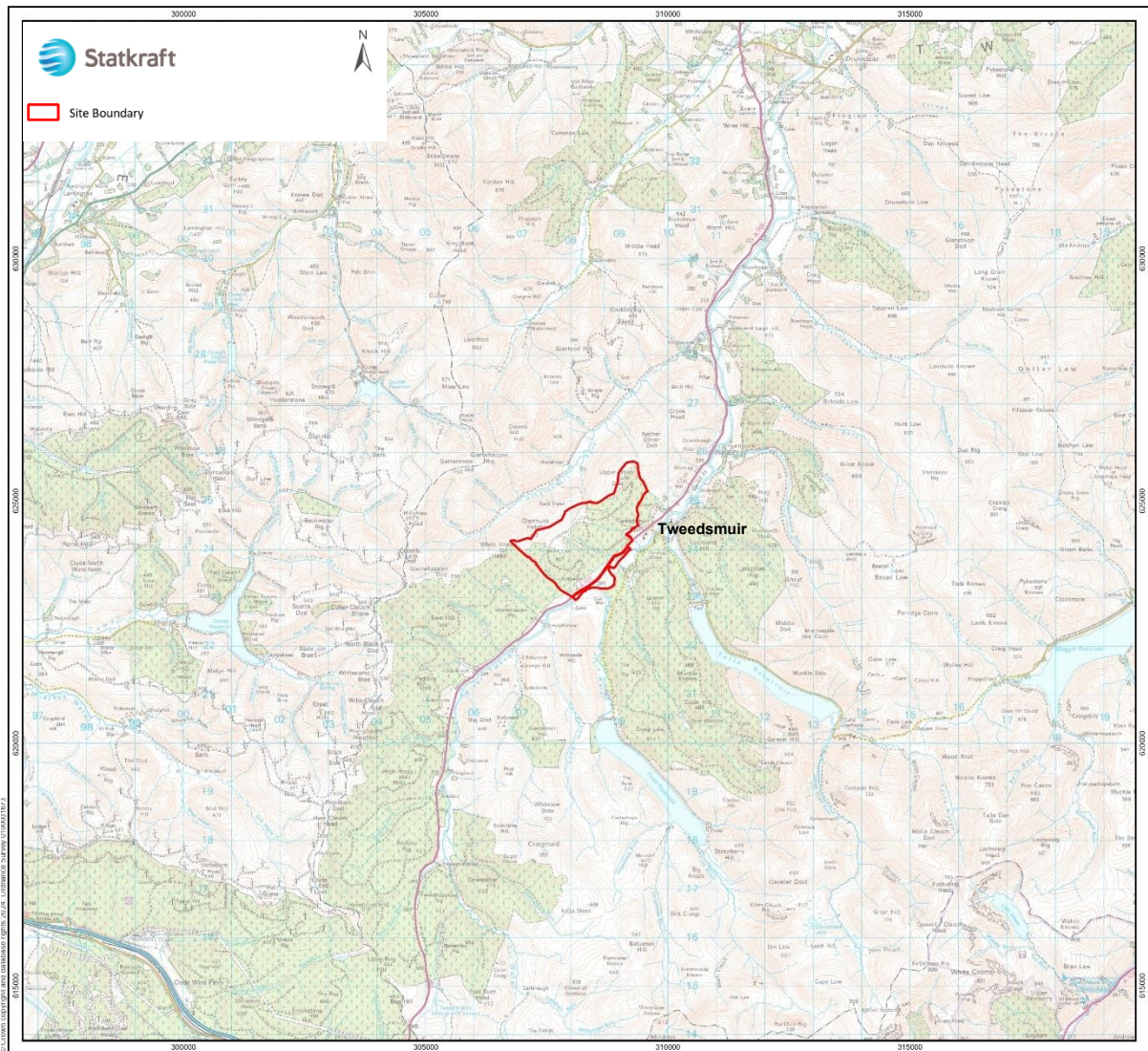
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1 Introduction

1.1 Overview

- 1.1.1 This document is a Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report for Oliver Forest Wind Farm which accompanies an application for development consent made by Oliver Forest Wind Farm Limited (hereafter referred to as 'the Applicant'). The NTS summarises the findings of the EIA which has been undertaken to assess the potential impacts from the construction, operation and decommissioning of Oliver Forest Wind Farm (hereafter referred to as the 'Proposed Development').
- 1.1.2 The Proposed Development is located in the Scottish Borders directly north-west of the A701 between Tweedsmuir and Glenbreck, approximately 12.5 km south of Broughton and approximately 19 km north of Moffat. The site boundary is shown in Figure 1.

Figure 1: Site Location



- 1.1.3 The Proposed Development consists of up to seven wind turbines with a maximum tip height of 200 m and associated ancillary infrastructure (including battery storage).
- 1.1.4 As the generating capacity of the Proposed Development would exceed 50 MW, an application is being submitted for consent under Section 36 of the Electricity Act 1989, with the Applicant also seeking a direction that deemed planning permission is granted under the Town and Country Planning (Scotland) Act 1997.

1.2 The Applicant

1.2.1 The Applicant, Oliver Forest Wind Farm Limited, is a wholly owned subsidiary of Statkraft UK Limited (Statkraft).

1.2.2 Statkraft is a leading company in hydropower internationally and Europe’s largest generator of renewable energy. The Group produces hydropower, wind power, solar power and supplies district heating. Statkraft is a global company in energy market operations and has 6,000 employees in over 20 countries Statkraft produces hydropower, wind power, solar power and supplies district heating, generating 62 TWh of renewable power.



1.2.3 Statkraft is at the heart of the UK’s energy transition. Since 2006, Statkraft has gone from strength to strength in the UK, building experience across wind, solar, hydro, storage, grid stability, EV charging, green hydrogen and a thriving markets business. Statkraft has invested over £1.3 billion into the UK’s renewable energy infrastructure and facilitated over 4 GW of new-build renewable energy generation through Power Purchase Agreements (PPA). Statkraft develops, constructs, owns and operates renewable facilities across the UK and employs over 500 people in offices across Scotland, England and Wales.

1.2.4 Further information about Statkraft can be found at www.statkraft.co.uk

1.3 Environmental Impact Assessment

1.3.1 An EIA is carried out where a proposed development has the potential to result in significant environmental effects. As it is considered possible that the Proposed Development may result in significant environmental effects, an EIA has been undertaken to accompany the application for Section 36 consent.

1.3.2 EIA involves the compilation, evaluation and presentation of any likely significant environmental effects resulting from a proposed development, to assist the consent authority, statutory consultees and wider public in considering an application.

1.3.3 EIA is an iterative process whereby the identification and assessment of effects can also inform the design of a proposed development so that potentially significant adverse environmental effects can be avoided, reduced and, if possible, removed. A proposed development can then be refined to avoid or reduce potential environmental effects, where necessary, through the use of mitigation measures.

1.3.4 The EIA Report presents information on the identification and assessment of the likely significant environmental effects resulting from the Proposed Development across a number of environmental topics. The significance of these effects has been assessed using criteria defined in the topic chapters of the EIA Report. Where appropriate, or as otherwise defined, the significance of effects has been categorised as major, moderate, minor or negligible. In the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as the ‘EIA Regulations’) likely effects assessed as being of ‘major’ or ‘moderate’ significance are considered to be significant effects.



1.3.5 The scope of the EIA was informed by an EIA Scoping Opinion provided by the Scottish Government Energy Consents Unit (ECU) in consultation with consultees including Scottish Borders Council (SBC), NatureScot, Scottish Environment Protection Agency (SEPA) and Historic Environment Scotland (HES).

2 The Proposed Development

2.1 Design Evolution

- 2.1.1 A number of parameters and considerations informed the site selection and design of the Proposed Development, which are described in full in the Design and Access Statement and summarised in Chapter 2 of the EIA Report.
- 2.1.2 The initial input to the design process for the Proposed Development was the desk-based constraints including ecologically important sites, sites of archaeological and/or cultural heritage importance, landscape designations, residential properties, watercourses and slope. This was augmented with field-based survey work including ornithological surveys, habitat and protected species surveys, a Phase 1 peat probing exercise and a cultural heritage visit of the site and surrounding area.
- 2.1.3 Following an initial round of public consultation and receipt of the EIA Scoping Opinion the turbine size was reduced from 250 m tip height to 200 m, to reduce the visual impact of the turbines from key viewpoints, including the village of Tweedsmuir.
- 2.1.4 Additional considerations which influenced changes to the location and number of turbines include:
- the results of noise assessments;
 - cultural heritage constraints;
 - phase 2 peat probing findings;
 - proximity to watercourses and to private water supplies; and
 - the topography of the site.
- 2.1.5 Potential impacts from the ancillary infrastructure, including the access tracks were minimised by using the existing forestry access tracks where possible.

2.2 The Proposed Development

2.2.1 The Proposed Development is described in detail in Chapter 3 of the EIA Report. The layout of the Proposed Development is shown on Figure 2. In summary, the Proposed Development would comprise:

- seven wind turbines including internal transformers, with blade tip heights of 200 m;
- seven turbine foundations (up to 30 m diameter) and a crane hardstanding area which includes areas for blade, tower and nacelle storage (approximately 2,400 m²) at each wind turbine;
- up to 1.5 km of new access track with a typical running width of 5 m (wider on bends) and 3.5 km of upgraded existing access track (widened from 2.5 m to 5 m) and associated drainage, four turning heads and five passing places;
- underground cabling and electrical infrastructure along access tracks to connect the turbine locations, and the on-site electrical substation;
- one on-site substation compound (70 m x 120 m) which would accommodate a control building for the Scottish Power Energy Networks (SPEN) substation and the wind farm substation;
- one SPEN construction compound (50 m x 100 m) which would be the location for the Battery Energy Storage System (BESS) following the construction of the wind turbines;
- two temporary construction compounds, the main compound measuring approximately 50 m x 100 m and a satellite compound measuring approximately 20 m x 40 m;
- search area for up to three borrow pits (covering approximately 18,000 m²);
- clearance of approximately 50 ha of on-site forest and replacement planting within the site of approximately 26 ha; and
- a 5 km recreational heritage trail with associated car parking spaces and interpretation boards (Figure 3).



Example wind turbine

2.2.2 An outline Construction Environmental Management Plan (CEMP) is contained in the EIA Report as Technical Appendix 3.1 which describes the measures which would be employed during the construction of the Proposed Development in order to protect the environment.

Lifespan of the Proposed Development

2.2.3 Construction of the Proposed Development is anticipated to take approximately 18 months. The Proposed Development would have an operational life of up to 50 years, at the end of which it would be decommissioned, a process which would take approximately 12 months.

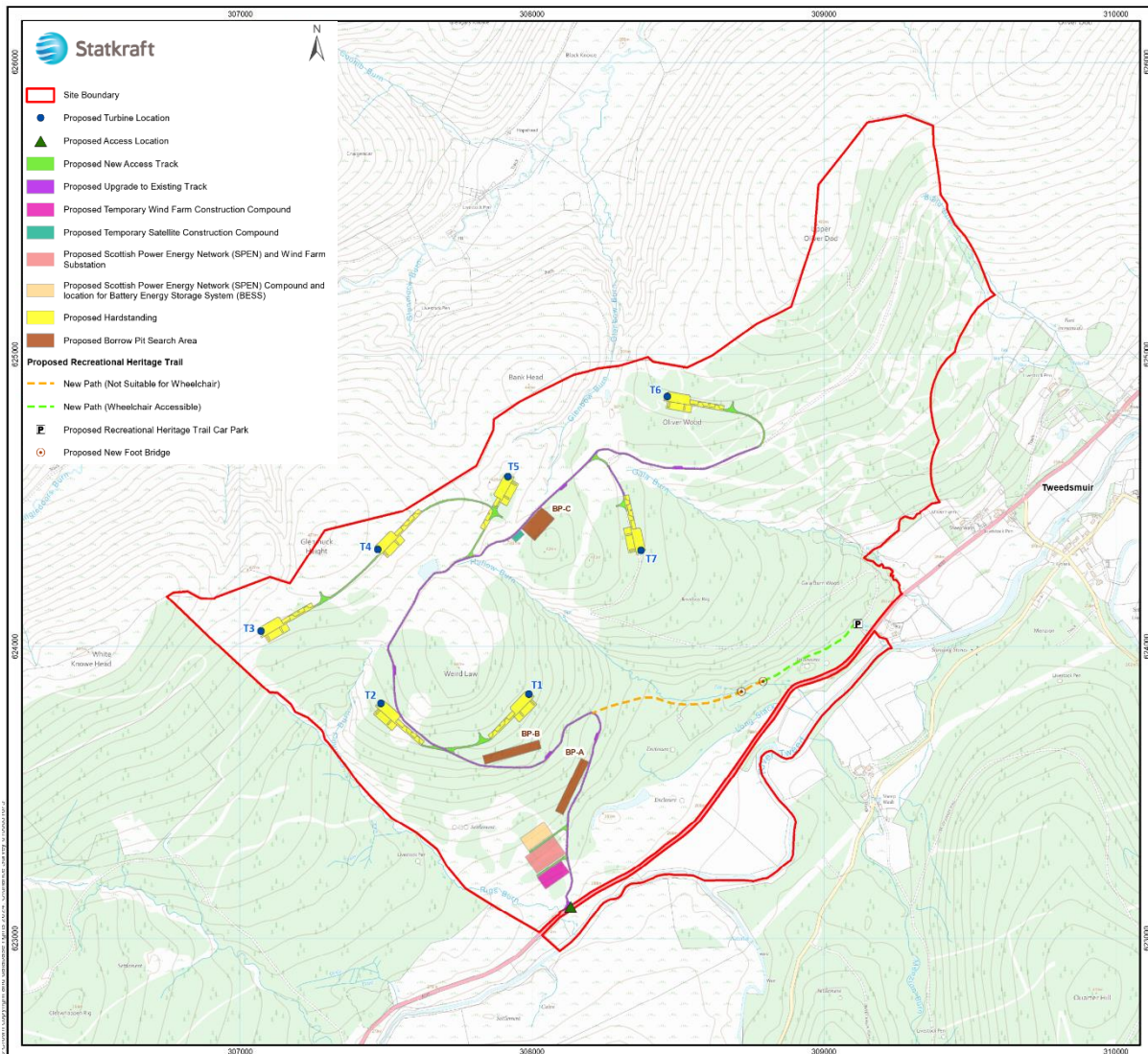
Access

2.2.4 Access to the Proposed Development site would be directly from the A701 via an existing forestry access track junction. It is anticipated that the Abnormal Indivisible Loads (AIL) (i.e. the turbine components) will travel to the site from the south via the A701 and M74. Full details of the transport route and access to the site are provided in Chapter 12 of the EIA Report.

Grid Connection

2.2.5 The grid connection option does not form part of this application and, as is standard, a separate application under Section 37 of the Electricity Act 1989 will be required in relation to the grid connection point and cabling route.

Figure 2: Site Layout



3 Benefits of the Proposed Development

3.1 Contribution Towards Government Targets

3.1.1 The Proposed Development would:

- make a meaningful contribution of over 50 MW of installed onshore wind capacity, towards meeting the renewable energy generation targets set out by the Scottish Government, such as the goal for Scotland to have a fully decarbonised energy system by 2045;
- make a valuable contribution towards UK generation targets and the reduction in emissions of greenhouse gases, principally carbon dioxide, in becoming carbon neutral in 1.4 years as demonstrated by the carbon calculator; and
- make Scotland, and therefore the UK, less reliant on imported and price-volatile fossil fuels by generating the equivalent energy to supply the approximate domestic needs of 46,5001 average UK households.

3.2 Community Benefit and Shared Ownership

3.2.1 Should the Proposed Development gain consent, a Community Benefit Fund would be made available to the community as set out within the Pre-Application Consultation (PAC) Report. This is offered on the basis of a payment per MW of installed electricity generating capacity at the Scottish Government recommended rate at the time of commissioning the Proposed Development. At present the recommended rate is £5,000 per MW (index linked) of installed electricity generating capacity.

3.2.2 Should there be an interest for local groups or organisations to have a financial interest in the Proposed Development, the Applicant would be willing to engage locally in order to bring this forward. This would offer local community groups the ability to invest in the Proposed Development. Local Energy Scotland can provide independent advice and support to communities interested in the shared ownership opportunity. Further details of the consultation effort associated with and response from communities is provided in the PAC Report accompanying the application.

It is estimated that the community benefit fund would accrue benefits to the local community of £251,000 per annum and worth approximately £12.5 million over the 50 year operational life of the Proposed Development.

3.3 Other Economic Benefits

3.3.1 It is estimated that the construction of the Proposed Development would directly support an estimated 40 temporary full-time jobs locally and 155 jobs within Scotland during the 18-month construction period. The local economy would be expected to be boosted by approximately £1.8 million (net Gross Value Added, GVA) and the Scottish economy by approximately £7.4 million (GVA) during the construction of the Proposed Development. It is anticipated that the Proposed Development would employ up to three local members of staff during its operational period.

3.4 Recreational Heritage Trail

The recreational heritage trail would enable access and understanding of local Scheduled Monuments.

3.4.1 The Proposed Development would include a 5 km recreational heritage trail starting in the south-eastern part of the site and linking into the wind farm access tracks and wider forestry tracks, as set out on Figure 3. Interpretation boards would be provided at various points along the route to describe environmental features in and around the site focusing on those of heritage and ecological interest.

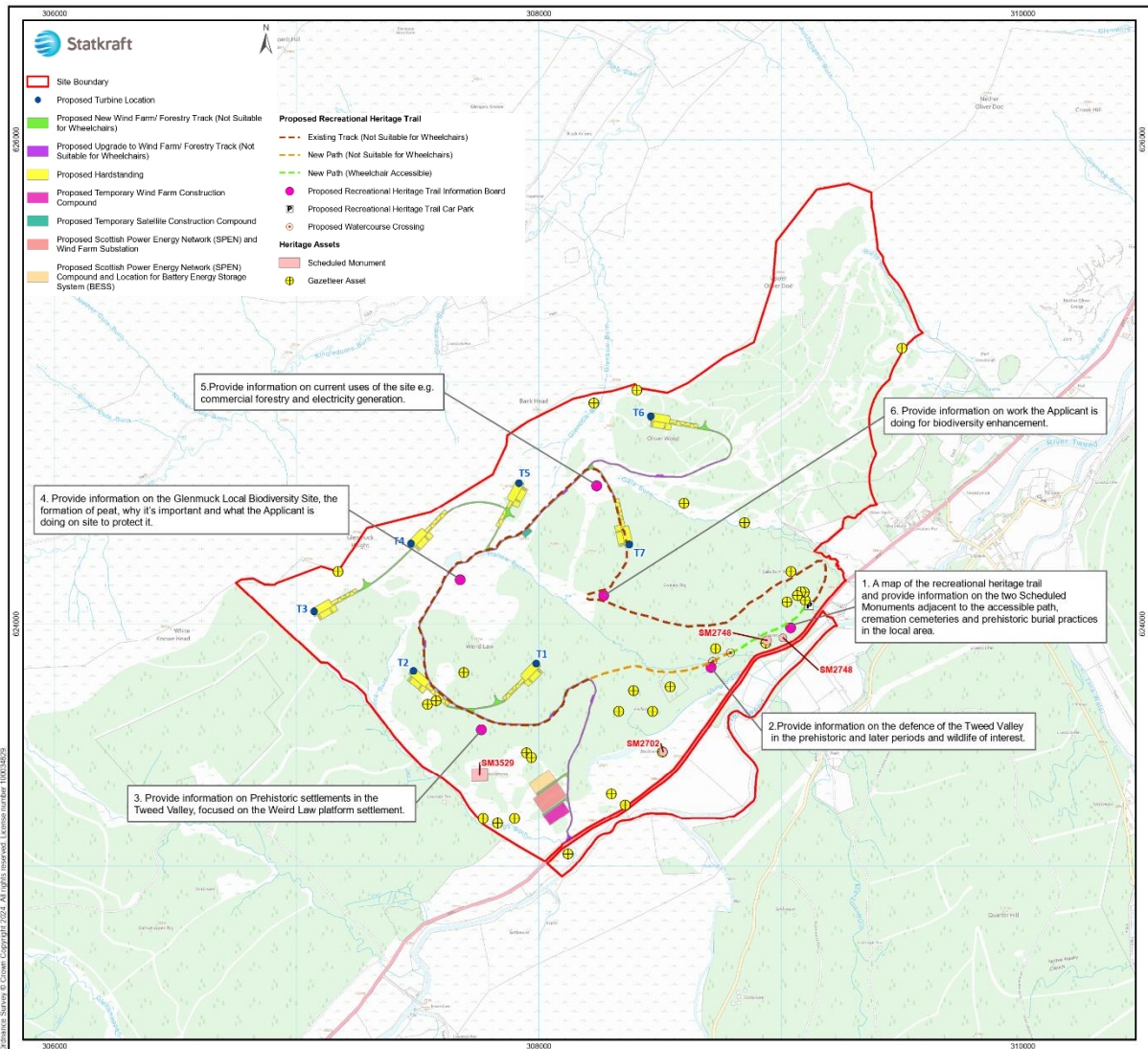
3.4.2 A 380 m section of the trail (closest to the A701 and leading from the car park) would comprise of a new accessible path to allow for all abilities access including wheelchairs and buggies. The path would cross over the Hallow Burn and a spring feeding into the Hallow Burn and a new 610 m path heading north-west alongside the Hallow Burn would be non-wheelchair accessible comprised of locally sourced stone. The remainder of the route would link into the wind farm tracks and existing forestry tracks creating a circular walk through the site (unsuitable for use by wheelchairs and buggies).

¹ Based on a 50.4 MW installed capacity, wind resource assessment and average Scottish domestic consumption of 3,520 Kwh per year (BEIS December 2021).

3.4.3 The path would be accessed by an existing vehicular access point off the A701 approximately 650 m south-east of Tweedsmuir village. Three car parking spaces and bins would be provided.



Figure 3: Recreational Heritage Trail



3.5 Outline Nature Enhancement Management Plan

3.5.1 An outline Nature Enhancement Management Plan (NEMP) is provided as Technical Appendix 8.6. It is anticipated that the document would be further developed, following the granting of consent, in discussion with Scottish Borders Council (SBC), SEPA and NatureScot. The aim of the outline NEMP is to establish the key objectives and principles by which parts of the site would be enhanced for the benefit of biodiversity, which would then form the basis for the more detailed NEMP.

3.5.2 The outline NEMP has a number of key aims including enhancement of:

- peatland habitats;
- habitats associated with Glenmuck Bog;
- grassland in the River Tweed Valley;
- fisheries habitats; and
- improvement of opportunities for nesting and foraging birds.



Sphagnum moss identification

Peatland Habitats

3.5.3 The design of the Proposed Development has sought to avoid locating infrastructure on peatland where possible with the majority of turbines and infrastructure located within the forestry on-site. Nevertheless, there will be a loss of approximately 2.01 ha of priority peatland as a result of the Proposed Development. As a result, it is proposed that up to 10.04 ha of peatland will be restored as compensation for the Proposed Development, which is in accordance with NatureScot guidance on offsetting the loss of priority peatland. In addition, a further 3.62 ha of peatland would be required to be restored to deliver enhancement.

Glenmuck Bog

3.5.4 Glenmuck Bog is a Local Biodiversity Site (LBS) located within the Proposed Development. A condition assessment of the Glenmuck Bog was undertaken which identified a number of potential enhancement measures that could be adopted to improve the quality and condition of the qualifying features of the site including:

- blocking and infilling of the ditch present;
- managing deer numbers; and
- control of Sitka spruce scrub and bracken that is encroaching on the bog habitats.

The Applicant will work with Buglife across all aspects of the NEMP to maximise the benefits for invertebrates in collaboration with other work Buglife is undertaking in the Tweed Valley.



River Tweed Valley

3.5.5 A field adjacent to the River Tweed is currently heavily grazed by sheep. However, habitat surveys found that the field is relatively species-rich which means that a change in management could result in a substantial improvement in ecological value and creation of more diverse grassland/meadow. Further surveys will be undertaken to determine exactly what species enhancement would be appropriate..

Fisheries

3.5.6 The enhancement of fisheries habitats includes three main objectives related to the management of fish cover, removal of barriers to migration and management of bank side vegetation.

Birds

3.5.7 Opportunities to enhance the habitat available for nesting and foraging birds includes planting/in-filling of hedgerows, planting of native trees, providing food sources and installation of nest boxes suitable for a range of species.

Monitoring

- 3.5.8 Monitoring is proposed as part of the outline NEMP in operational years 3, 5, 10 and 15 of the Proposed Development and will consist of checks of the habitat enhancement measures. The Applicant will provide a summary of the NEMP activities and monitoring results to NatureScot and SBC each year of monitoring. The frequency of monitoring and reporting thereafter will be agreed with key stakeholders.

4 Landscape and Visual

- 4.1.1 EIA Report Chapter 7 identifies and assesses the potential impacts that the Proposed Development would have on the landscape character, designated landscapes, views and visual amenity of the local environment.

4.2 Baseline

- 4.2.1 The 45 km study area for the LVIA includes a range of landscapes from lowland valley farmland to rounded open hills and plateaux; slopes with large coniferous plantations; and narrow valleys. The site is located within the Tweedsmuir Uplands Special Landscape Area (SLA)².
- 4.2.2 Potential visibility of the Proposed Development within the 45 km study area is demonstrated by generating a Zone of Theoretical Visibility (ZTV)³ and is reflective of the topography and woodland cover. This demonstrates that views of the Proposed Development from the valleys are limited or framed by adjacent slopes and woodlands, however views from hill tops are panoramic and long-ranging.

4.3 Predicted Effects

Construction and Decommissioning

- 4.3.1 The landscape and visual effects of construction works on the site, involving tree felling, ground disturbances and activity is judged to be significant for the 18 month construction period. Effects during decommissioning will be lower than construction.

Operation

Landscape Character Types (LCT)

- 4.3.2 Landscape effects during operation are identified as being potentially significant out to approximately 6 km to the north-east of the site but would not be as distant in other directions (Technical Appendix 7.2).

Designated Landscapes

- 4.3.3 Many of the designated landscapes within approximately 20 km of the Proposed Development have limited or no ZTV coverage. Those considered in detail include the Upper Tweeddale National Scenic Area (NSA) and the Tweedsmuir Uplands SLA (Technical Appendix 7.6).
- 4.3.4 The Proposed Development would not add new elements into the landscape as there are existing turbines present within and around the NSA and SLA. No discernible change to the Upper Tweeddale NSA is anticipated whilst for the Tweedsmuir Uplands SLA, the scale of the turbines and location in relation to the Upper Tweed Valley mean that significant landscape and visual effects have been identified for the valley within approximately 8-10 km of the Proposed Development. This is a relatively small part of the SLA extent and whilst the Proposed Development would alter aspects of the character of the western part of the SLA, it would not undermine the integrity of the designated area as a whole, and the reasons for designation would remain intact for the Tweedsmuir Uplands SLA.

Visual Receptors

- 4.3.5 The visual assessment (Technical Appendix 7.3) considers the effects of changes to the views that people would see from the surrounding area as a result of the introduction of the Proposed Development to the existing landscape.
- 4.3.6 The ZTV illustrates that theoretical visibility of the turbines is generally curtailed by the uplands around the site such that visibility is largely contained within 3-5 km except from higher ground or where views between hills are possible. Theoretical visibility is generally limited to the Upper Tweed Valley and

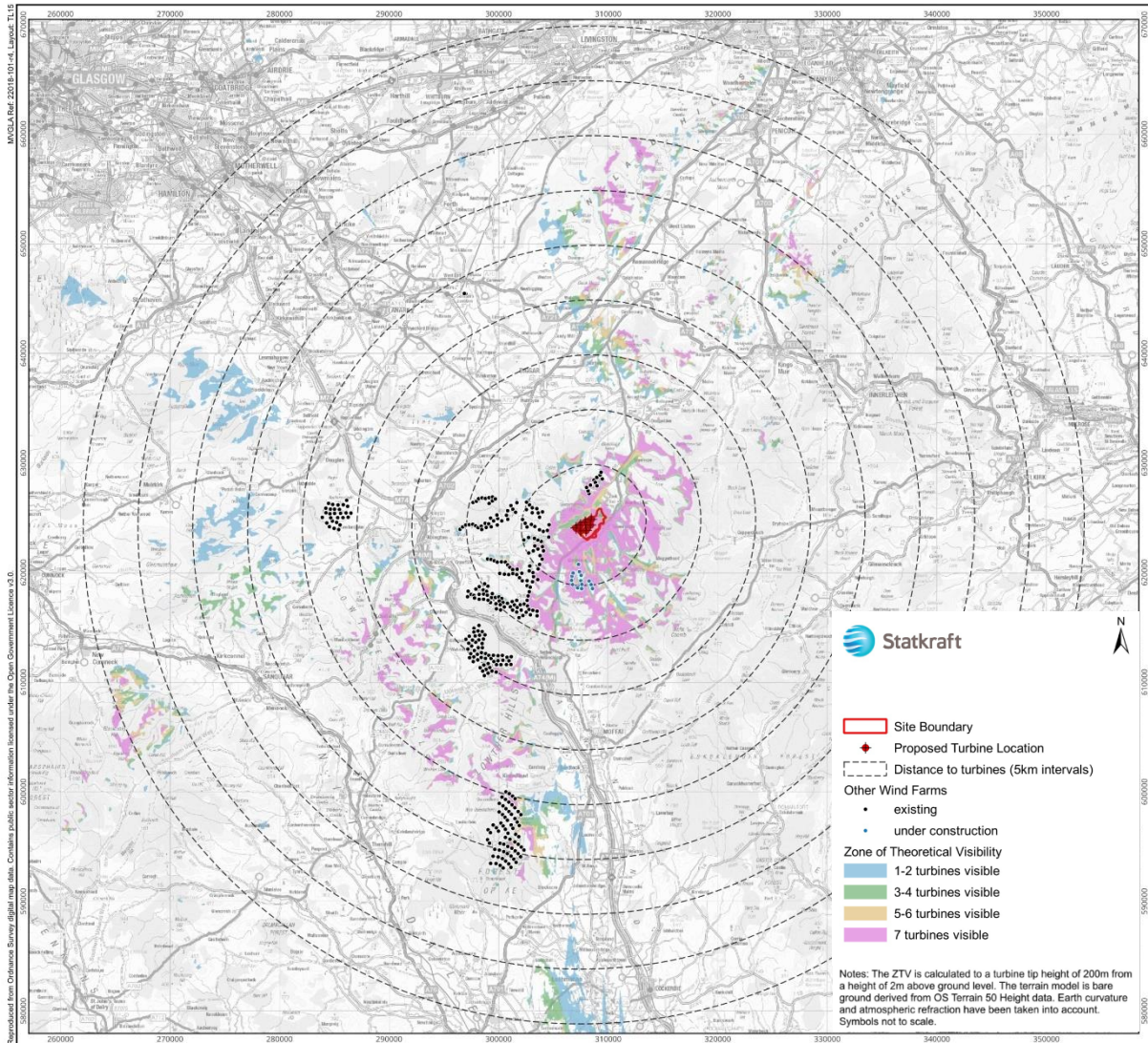
² NatureScot advises that all local designations can be referred to as Local Landscape Areas. The term Special Landscape Areas is retained here for consistency with SBC terminology.

³ The ZTV is an analysis of the theoretical visibility of the proposed turbines based on a 'bare earth' model and as such represents the maximum visibility of the turbines. The actual visibility is expected to be less in some parts of the study area due to screening afforded by vegetation/woodland and buildings.

tributary valleys to the south-east, i.e. the Fruid and Talla Valleys; the Kingledoors Valley to the north-west, and high ground further away.

- 4.3.7 The ZTV depicts that there is a limited area, effectively the eastern half of the area within approximately 10-11 km that would be influenced by the Proposed Development. Within that area, the Proposed Development would be relatively nearby, and effects would generally be significant.

Figure 4: Zone of Theoretical Visibility



Residential Visual Amenity

- 4.3.8 The Residential Visual Amenity Assessment (RVAA) (Technical Appendix 7.7) assesses individual properties or groups of properties within 2.5 km of the Proposed Development. The RVAA considers the change to visual amenity at each property/group of properties, including consideration of likely views from the property, its curtilage (garden) and approach.
- 4.3.9 The assessment of the properties around the Proposed Development site found that there would be medium to high magnitude of change to the views from several properties within approximately 2.5 km. The RVAA found that effects at the properties would not reach what in current guidance is called a ‘Residential Visual Amenity Threshold’⁴.

⁴ Landscape Institute (March 2019) Residential Visual Amenity Assessment (RVAA). Technical Guidance Note 2/19.



Photomontage from Pykestone Hill within the NSA

Aviation Lighting

- 4.3.10 Due to military and civilian activities that are carried out in airspace above the Proposed Development, visible red and infra-red lighting is required on three turbines: Turbine 1, Turbine 3 and Turbine 6. The lights would come on at half an hour after sunset and would be switched off at half an hour before sunrise (to be on during nautical twilight). Agreed mitigation includes the reduction of intensity of the lights during conditions of clearer visibility. In addition, the lights used will be designed to emit a horizontal beam of light with reduced upward and downward spill of light, such that the brightness of the light emitted is decreased for viewers close to the turbines viewing the lights from below.
- 4.3.11 An assessment of the effects of the lighting on views after dark has been carried out (Technical Appendix 7.5) considering the appearance of the proposed lighting relative to exemplar lights and existing lights in the views; and any change to the night-time viewing experience from various viewpoints and routes. No significant effects are identified as arising from aviation lighting during dark hours.

Cumulative Effects

- 4.3.12 The assessment of cumulative effects considers the effect of the introduction of the Proposed Development to the landscape in addition to other wind farms which are consented, at application or at EIA scoping.
- 4.3.13 The assessment above includes existing operational wind farms and Whitelaw Brae Wind Farm which is under construction. There are no instances in which the effects of the Proposed Development in the context of these additional wind farms are judged to be increased above the LVIA finding.

5 Ecology

- 5.1.1 EIA Report Chapter 8 evaluates the potential effects of the construction, operation and decommissioning of the Proposed Development on important ecological features.

5.2 Baseline

- 5.2.1 There are no internationally or nationally designated sites for ecological features within the site boundary. Both the River Tweed Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) are located immediately adjacent to the south of the site, and are designated for the presence of aquatic vegetation, otter, Atlantic salmon and lamprey.
- 5.2.2 There are three non-statutory designated sites for nature conservation within 2 km of the site, one of which is located within the site boundary. All three are designated as both Scottish Wildlife Trust 'Wildlife Sites' (SWT) and also 'Local Biodiversity Sites – to be adopted' (LBS). These are Glenmuck Bog SWT & LBS within the site, Hawkshaw Bog SWT & LBS, adjacent to the southern site boundaries, and Talla Reservoir SWT & LBS.
- 5.2.3 To identify the ecological baseline the following surveys were undertaken: Phase 1 Habitat surveys, National Vegetation Classification (NVC) surveys, protected terrestrial mammal surveys, fish habitat surveys and bat surveys.

5.2.4 The surveys identified that the site is predominantly characterised by coniferous plantation, consisting of Sitka spruce with some scattered larch and a few areas of Scots pine in the south-east of the site. It also has dry heath, blanket bog and swamp habitats. The site has very limited evidence of protected terrestrial mammals, limited optimal fish habitat, and a bat species assemblage (dominated by common pipistrelle and soprano pipistrelle).



Coniferous plantation at Oliver Forest

5.3 Predicted Effects

Construction

- 5.3.1 The Proposed Development has the potential to affect notable habitats and the species that use them through effects of pollution and run-off (such as silt) without appropriate control measures. Pollution prevention controls, good practice measures, and embedded mitigation, detailed within the outline CEMP will ensure that adjacent habitats are not adversely impacted by the Proposed Development. In order to ensure that the aquatic environment is safeguarded, a water quality monitoring plan will be put in place prior to, during and post-construction.
- 5.3.2 The CEMP will include Species Protection Plans (SPP), Habitat Specific Protection Plans (HSPPs), and the appointment of an Ecological Clerk of Works (ECoW) to oversee the implementation of the ecology mitigation measures.
- 5.3.3 There would be no significant adverse effects on habitats or protected species due to construction of the Proposed Development.

Operation

The additional enhancement of habitats proposed as part of the NEMP would result in beneficial effects on nature conservation.

- 5.3.4 The Proposed Development would result in the total loss of up to 2.01 ha of priority peatland (direct and indirect losses⁵) and as a result 10.04 ha of priority peatland would be restored on-site to compensate for the loss of habitat.
- 5.3.5 During operation, wind turbines can pose risks to bats through potential collision, changes in air pressure or disruption to their commuting and foraging routes. However, due to the low activity levels recorded during bat surveys and maintaining the Proposed Development infrastructure 50 m away from key bat habitat features, no significant adverse effects are anticipated.

Decommissioning

- 5.3.6 Effects during decommissioning would be less than those during the construction phase. Methods and mitigation will follow best practice and guidance at the time of decommissioning and a decommissioning environmental management plan will be agreed with the relevant consultees at that time.

Cumulative Effects

- 5.3.7 No significant cumulative effects are predicted for habitats or protected species.

6 Ornithology

- 6.1.1 Chapter 9 of the EIA Report evaluates the effects of the Proposed Development on ornithological (birds) receptors.

⁵ Direct loss refers to habitat loss due to the construction directly on it of infrastructure. Indirect loss refers to habitat impacted by construction of infrastructure adjacent to it.

6.2 Baseline

6.2.1 Baseline studies and surveys took the following into account:

- Statutory sites designated for their bird interest – i.e. Tweedsmuir Hills SSSI;
- Non-statutory sites designated for their bird interest – i.e. Glenmuck Bog, Hawkshaw Bog and Talla Reservoir; and
- target bird species potentially affected by the Proposed Development, such as species of European conservation importance (as listed on Annex I of the Birds Directive), species listed in Schedule 1 of the Wildlife & Countryside Act, and red-listed species on 'Birds of Conservation Concern'.



6.2.2 Field surveys undertaken for birds included both static vantage point surveys which recorded bird flights and breeding walkover surveys that identified moorland, raptor, owl and black grouse breeding birds.

6.2.3 These surveys revealed very limited use of the site, and adjacent habitats, by a modest number of target bird species.

6.3 Predicted Effects

6.3.1 No significant effects (including cumulatively) are predicted for ornithology during the construction, operation or decommissioning phases of the Proposed Development.

6.3.2 Notwithstanding the lack of potential impacts on target bird species, some standard mitigation measures will be implemented during construction to protect birds, including:

A suitably qualified ECoW will ensure ornithological interests are safeguarded and oversee the implementation of ecological and ornithological mitigation

- good practice construction measures, pollution prevention controls and monitoring as set out in the outline CEMP.
- development of a Construction Breeding Bird Protection Plan (CBBPP) which will form part of the CEMP.
- if site clearance activities (including forestry works) were to commence during the core breeding bird season (1 March to 31 August, inclusive), they will be subject to a pre-clearance survey by a competent ornithologist to identify any active wild bird nests with works proceeding subject to exclusion buffers where nests are discovered.

6.3.3 Mitigation during construction and decommissioning will follow best practice and guidance at the time.

7 Geology, Hydrology, Hydrogeology and Peat

7.1.1 EIA Report Chapter 10 evaluates the effects of the Proposed Development in relation to hydrology and hydrogeology (i.e. the water environment), geology and peat during construction, operation and decommissioning.

7.2 Baseline

7.2.1 Consultation, which entailed a desk study and site surveys (including peat probing, watercourse survey and investigation of Private Water Supplies (PWS)) identified the geological and hydrological baseline.

7.2.2 The bedrock geology of the site comprises metasandstones and metamudstones of the Mindork Formation and Shinnel Formation. the majority of the site is underlain by peat of less than 0.5 m depth, with small pockets of peat up to 7 m in isolated locations.

7.2.3 The Proposed Development is entirely located within the surface water catchment of the River Tweed which flows north-eastwards along the south-eastern boundary of the site. The site is also located within the sub-catchments of the Kingledoors Burn, Rigs Burn, Hallow Burn, Gala Burn and Bield Burn which drain south-eastwards into the River Tweed. None of the surface water catchments which drain the site have been designated as a Drinking Water Protected Area (DWPA) and no areas of the site are identified to be at risk of flooding. The design of the Proposed Development has sought to ensure a minimum 50 m buffer where possible between all proposed infrastructure and the watercourses.



- 7.2.4 Whilst areas of potential Groundwater Dependent Terrestrial Ecosystems (GWDTE) are identified on site, the distribution is not typical of a habitat sustained by groundwater but rather it is likely to be supported by rainfall, surface water ponding and water logging of soils, therefore not considered to be groundwater fed.
- 7.2.5 The PWS survey identified water supplies within the eastern part of the site supplying properties to the south and east (Technical Appendix 10.3).

7.3 Predicted Effects

Construction

- 7.3.1 The design of the Proposed Development has sought to utilise existing tracks where possible and as a result, no new watercourse crossings are required although one existing crossing may need to be upgraded. In addition, two new watercourse crossings, in the form of wooden foot bridges will be required for the proposed recreational heritage trail.
- 7.3.2 The outline CEMP will include a drainage management plan, including Sustainable Drainage Systems (SuDS), and a Pollution Prevention Plan, both of which would be agreed with SBC and SEPA prior to any construction works being undertaken.
- 7.3.3 A detailed review of the distribution and depth of peat at the site is presented in a peat management plan (PMP) (Technical Appendix 10.2). The proposed turbines have been located in areas of shallow or no peat, avoiding siting any infrastructure on peat depth greater than 1 m wherever possible. Where peat would be encountered by the Proposed Development it can be readily managed and accommodated within the site layout with no significant environmental effect. No surplus peat would be generated, and the volumes of peat / peaty soil generated from the proposed excavations would be used to reinstate track verges, turbine bases, crane hardstandings and restoration of on-site borrow pits.
- 7.3.4 The site-specific peat landslide hazard risk assessment (PLHRA) (Technical Appendix 10.1) confirms that there are very few areas of peat instability risk across the Proposed Development and concluded that, with the employment of appropriate good practice mitigation measures, all of the areas of peat instability can be considered as an insignificant risk.
- 7.3.5 The PWS survey informed the design of the Proposed Development and no proposed infrastructure is located within the catchments of any identified PWS.
- 7.3.6 Notwithstanding these safeguards, a programme of baseline and construction phase water quality monitoring is proposed which would be used to confirm that the Proposed Development does not have a significant effect on geology and the water environment. Monitoring of watercourses that drain from the site, including those that discharge to the River Tweed, will be included in the monitoring plan. It is proposed that the monitoring schedule includes one PWS source to ensure this is protected.

Subject to adoption of best practice construction techniques and a site-specific CEMP, no significant adverse effects on geology (including soils and peat) or the water environment have been identified.

Operation

- 7.3.7 Operation of the Proposed Development would require limited activities relative to the construction and decommissioning phases. Routine maintenance of the infrastructure would be required across the site. Should any maintenance be required on-site during the operational life of the Proposed Development which would involve construction type activities; mitigation measures as per the final CEMP would be adhered to.

Decommissioning

- 7.3.8 Effects during decommissioning would be less than those during the construction phase. Methods and mitigation will follow best practice and guidance at the time of decommissioning and a decommissioning environmental management plan will be agreed with the relevant consultees at that time.

Cumulative Effects

- 7.3.9 Potential cumulative effects have been considered associated with other wind farm developments within 5 km of the Proposed Development and in the same surface water catchments as the Proposed Development (Glenkerie, Clyde and Whitelaw Brae Wind Farms).
- 7.3.10 These developments have either been developed or consented recently and therefore will be managed in accordance with best practice, industry standards and relevant legislation, planning policy and guidance regulated by statutory consultees. These standards ensure, with respect to soils, geology and the water environment, potential impacts are mitigated and controlled at source, therefore no potential significant adverse cumulative effects are anticipated.



Gala Burn

8 Cultural Heritage and Archaeology

- 8.1.1 EIA Report Chapter 11 considers the archaeological and cultural heritage value of the site and assesses the potential for significant effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development.

8.2 Baseline

- 8.2.1 There are three Scheduled Monuments and 33 non-designated heritage assets within the site, all of which were avoided through site design.
- 8.2.2 A desk based review of designated and non-designated heritage assets as recorded by Historic Environment Scotland (HES), the National Records of the Historic Environment (NHRE) and the Scottish Borders Historic Environment Record (HER) was undertaken. This also included a review of historic mapping and aerial photography. A walkover survey of the site was also undertaken and coupled with the results of the desk-based review it concluded that there is the potential for hitherto unknown archaeological remains to survive on the site.
- 8.2.3 An assessment of the settings of designated heritage assets within 10 km of the Proposed Development was informed by consultation with HES, a ZTV, site visits and visualisations. A total of 39 designated heritage assets were identified to be taken forward for assessment of their settings.

8.3 Predicted Effects

Construction

- 8.3.1 No direct impact on the known heritage assets is anticipated during the construction of the Proposed Development. Due to the proximity of some known heritage assets to the proposed infrastructure, mitigation in the form of invasive archaeological works and fencing to identify the assets to the construction team and prevent accidental damaged has been recommended.

- 8.3.2 Mitigation has been proposed to investigate, identify and record any paleoenvironmental and buried archaeological remains which may survive and be impacted by the construction of the Proposed Development.



Photomontage from the Chester, enclosure, Scheduled Monument

Operation

- 8.3.3 The assessment identified a moderate adverse effect on the setting of Weird Law, platform settlement within the site which is considered to be significant. The Proposed Development would have some impact on factors of the monument's setting that contribute to its cultural significance however the impact would allow for adequate retention of the understanding, appreciation and experience of the asset and as such the integrity of its setting would not be significantly impacted. The location of the Weird Law, platform settlement was considered during the design process and efforts were made to limit the impact of the Proposed Development on its setting as far as reasonably possible. Further mitigation by design is not considered practical within the confines and constraints of the site.
- 8.3.4 The assessment identified a minor impact, negligible impact, neutral impact and no impact on the settings of the other 38 designated heritage assets.

Decommissioning

- 8.3.5 Effects during decommissioning would be less than those during the construction phase. Methods and mitigation will follow best practice and guidance at the time of decommissioning and a decommissioning environmental management plan will be agreed with the relevant consultees at that time.

The recreational heritage trail proposed as part of the Proposed Development would provide beneficial effects by enabling easier access to the Scheduled Menzion Farmhouse, two enclosed cremation cemeteries as well as highlighting, by means of interpretation boards, the location of designated and non-designated heritage assets within the site and local area.

Cumulative Effects

- 8.3.6 The potential effects of cumulative developments at operational, consented and application stage on the settings of designated heritage where minor or above effects were identified for the Proposed Development, has been undertaken. For all 18 designated heritage assets where the Proposed Development was considered to have a minor or above residual effect on their settings, the cumulative effect was at worst judged to be negligible and not significant.

9 Site Access, Traffic and Transport

- 9.1.1 Chapter 12 of the EIA Report considers the likely significant effects on transport and access associated with the construction, operation and decommissioning of the Proposed Development.
- 9.1.2 Strategic access to the site would be from the A74(M) (north and south of Junction 15), via the A701. Construction materials could be brought to the site along the A701 from the A74(M) and Moffat or from the direction of Broughton, depending upon the source.

9.2 Baseline

- 9.2.1 The study area includes local roads that are likely to experience increased traffic flows resulting from the Proposed Development including:
- A74(M) to the north and south of Junction 15; and
 - A701 between the A74(M) and Broughton.

9.2.2 In order to assess the impact of construction traffic on the study area, existing traffic data was obtained from the Transport Scotland and the Department for Transport (DfT) databases.

9.3 Predicted Effects

Construction

9.3.1 The Proposed Development would lead to increased traffic volumes on a number of roads in the vicinity of the site during the temporary 18 month construction phase.

9.3.2 The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 4 of the construction programme. During Month 4, an average of 42 HGV movements are predicted per day and it is estimated that there would be a further 30 car/light goods vehicle movements per day to transport construction workers to and from the site. The predicted movements during Month 4 (as this is predicted to be the peak of construction traffic) were compared to the expected traffic volumes in 2029 without the Proposed Development. This identified no capacity issues on any of the roads due to the additional traffic associated with the Proposed Development.

9.3.3 The movement of traffic associated with the delivery of large wind turbine components (known as Abnormal Indivisible Loads (AIL)) would require small scale and temporary remedial works at a number of locations along the identified delivery route. The AIL will travel as part of a convoy accompanied by Police Scotland.



Operation

9.3.4 Traffic levels during the operational phase of Proposed Development would be up to two vehicles per week for maintenance purposes and no significant effects are anticipated.

Decommissioning

9.3.5 Traffic levels during the decommissioning of the Proposed Development are expected to be lower than during the construction phase as some elements of the Proposed Development will be broken up on-site for onward transport.

Cumulative Effects

9.3.6 None of the committed developments in the study area would conflict with the construction of the Proposed Development and, therefore, no cumulative effects are identified.

9.3.7 Should any of the current schemes under planning consideration at present be consented, any crossover of traffic with the Proposed Development flows will be addressed via an overarching Traffic Management and Monitoring Plan (TMMP).

With the implementation of a Construction Traffic Management Plan no significant effects are anticipated in respect of traffic and transport issues.

The Applicant will communicate and update the local community as construction progresses.

10 Noise

10.1.1 Chapter 13 of the EIA Report evaluates the effects of noise due to the Proposed Development. The construction, operation and decommissioning of wind farms can have an impact on nearby noise sensitive receptors (NSRs) (i.e. properties which are potentially sensitive to noise such as residential homes).

10.2 Baseline

The noise assessment concludes that wind turbine noise immission levels from the Proposed Development would be within the levels recommended in national guidance and there would be no significant effects.

10.2.1 Onshore wind turbine developments generally occur in rural locations where background noise levels can be low and therefore wind turbines can be audible. Noise limits are set in accordance with the guidance documents ETSU-R-97⁶ and the Institute of Acoustics Good Practice Guidance (IOA GPG)⁷ The noise limits are established in relation to existing background noise levels and apply to the combined cumulative noise levels from all wind farms within the study area.

10.2.2 During operation, turbines emit noise from the blades as they pass through the air. The amount of noise emitted varies depending on the wind speed. When there is little wind the turbine rotors will turn slowly and produce lower noise levels than during high wind speeds, however, background noise levels at nearby properties will also increase at high wind speeds.

10.2.3 Fourteen NSRs were identified for the Proposed Development, with the closest (Menzion Farm) just over 1 km from the nearest proposed turbine.

10.2.4 Noise measurement devices were deployed at three of the nearest properties to the Proposed Development in 2023 (Menzion Farm, Oliver House and Hopehead bothy) to measure the background noise levels around the site. In addition, noise limits have been set at three further NSRs as part of the Whitelaw Brae Wind Farm planning consent: Glenbreck, Hawkshaw and Craiglaw, and have therefore been taken into account for the Proposed Development.

10.3 Predicted Effects

Construction

10.3.1 Disruption due to construction would be localised, temporary and intermittent in nature. Predictions have shown that noise generated through construction activities would be of a minor effect. This matches typical noise limits for activities of this type without any specific mitigation being required, nevertheless several safeguards exist to control and minimise the effects of construction noise to be implemented through the outline CEMP. The residual effect from construction noise would be not significant.

Operation

10.3.2 Predictions for a candidate turbine (Vestas V162 7.2 MW) have been undertaken to produce a model of the noise generated during operation and includes the effect of noise in combination with Clyde and Extension Wind Farm (operational), Glenkerie (operational) and Extension Wind Farm (consented), Grayside Wind Farm (at application stage) and Whitelaw Brae Wind Farm (under construction).

10.3.3 For all NSRs, cumulative noise levels due to the operation of the Proposed Development together with the other wind farms within the area are predicted to be on or below the required noise limit during the daytime and night-time across all wind speeds.



Noise measuring equipment

⁶ The Working Group on Noise from Wind Farms (1996). ETSU-R-97, The Assessment and Rating of Noise from Wind Farms.

⁷ Institute of Acoustics (2013). A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise.

11 Socio-economics, Recreation and Tourism

- 11.1.1 Chapter 14 of the EIA Report considers the impact of the Proposed Development on the socio-economics, recreation and tourism of the area surrounding the site.

11.2 Baseline

- 11.2.1 The assessment utilises a three-tiered study area which is considered appropriate for the quantitative and qualitative characteristics of the assessment. Information used for the socio-economics, tourism and recreation baseline was collected through a detailed desktop review of existing studies and datasets.



Existing forestry access tracks

- 11.2.2 The Scottish Borders has a higher than average proportion of its workforce in skilled trades and process, plant and machine operatives compared with Scotland and the UK. Both of these occupations are likely to include skills and services that would be required for wind farm construction and operation.
- 11.2.3 Assuming the Proposed Development proceeds as intended by the Applicant, GVA with a gross total of £2.9 million is predicted to be generated in the local WSA economy during the construction, and commissioning phase. This is equivalent to £2.0 million per annum over the construction period.
- 11.2.4 The VisitScotland Insight Department's 'Scottish Borders Factsheet 2019' (2021) shows that the average annual value for visitor spend across 2017-2019 in the Scottish Borders was £144 million which supported approximately 4,100 jobs in the sector. There are several accommodation businesses, including self-catering accommodation and bed and breakfasts, located throughout the Tweedsmuir region.
- 11.2.5 There are no formal Rights of Way (RoW) or Core Paths through the site, however the site has existing forestry access tracks which are utilised by the public for recreation under the right to roam.

11.3 Predicted Effects

Construction

- 11.3.1 The construction of the Proposed Development would result in an increase in employment as well as economic effects resulting from expenditure on items such as site preparation including forestry services, construction and maintenance of access roads, purchase and delivery of materials, plant and equipment giving a beneficial non-significant effect.
- 11.3.2 There may also be beneficial effects on accommodation providers and food and drink business during construction as a result of an increase in spending in the area, but likewise there may be adverse effects due to competition for accommodation.
- 11.3.3 Users of recreational routes and areas, including walkers, cyclists, anglers etc, may experience temporary non-significant adverse effects as a result of construction activities.

The Applicant encourages local businesses and potential suppliers to register with them to ensure they are informed of the procurement process for construction. The Applicant will also hold 'meet the buyer' days ahead of construction should the application be consented.

Operation

- 11.3.4 The Proposed Development would require a small team of personnel to provide servicing, maintenance, repairs and other operational support. It is estimated that an annual average of three permanent locally-based direct jobs are likely to be created by the Proposed Development during its operational phase. This effect would be beneficial and not significant on employment and the local economy.

- 11.3.5 Evidence shows that wind farms have a negligible effect on tourism, with no relationship between wind farm development and tourism employment within a local authority and, in some cases, tourism levels increasing alongside the number of wind farms being developed. Therefore, no impact on tourism assets or the tourism economy is anticipated as a result of the operation of the Proposed Development.
- 11.3.6 The creation of the recreational heritage trail as part of the Proposed Development would result in a significant beneficial effect for recreational users.

Cumulative Effects

- 11.3.7 Cumulative effects in relation to socio-economics could arise as a result of competition for materials, workers, accommodation and further supply chain products between the Proposed Development and other prospective projects. However, the proximity of the Proposed Development and other prospective projects to nearby cities means that no significant adverse cumulative effects in relation to socio-economics, recreation or tourism are anticipated.
- 11.3.8 The locale of wind farms currently under application could also result in further local community benefits, through the implementation of the Onshore Wind Sector Deal for Scotland (Scottish Government, 2023). This could increase the volume of community benefits received locally, both in terms of investment and employment, which could maximise the local beneficial effects of the proposed and cumulative developments.

12 Forestry

- 12.1.1 Chapter 15 of the EIA Report describes the likely effects of the Proposed Development on the woodland within the site boundary, and how it will be managed.

12.2 Baseline

- 12.2.1 The Proposed Development is partially located within commercial forestry. The forestry assessment has identified that areas of forestry would require to be felled for the construction and operation of the Proposed Development.
- 12.2.2 The study area for the assessment of effects on forestry extends to approximately 368 ha and is comprised largely of commercial conifers with small areas of mixed broadleaves and open ground planted in the late 1990s.



Entrance to Oliver Forest plantation

12.3 Predicted Effects

- 12.3.1 A total of 50.4 ha of forestry will require to be felled to enable the construction and operation of the Proposed Development. A total of 26.1 ha will be restocked on-site, with the remainder of the land to be left open for the operation of the Proposed Development or the return to peatland bog. Therefore, there would be a net loss of woodland area.
- 12.3.2 In order to comply with the criteria of the Scottish Government's Control of Woodland Removal Policy the Applicant is committed to providing compensatory planting off-site, the details of which would be agreed with Scottish Forestry prior to the construction of the Proposed Development.
- 12.3.3 The residual effect of the felling would be neutral and not significant due to the balance of the restocking on-site and compensatory planting off-site resulting in no net loss of forestry.

13 Aviation

- 13.1.1 Chapter 16 of the EIA Report describes the likely effects of the Proposed Development on aviation related infrastructure.

13.2 Baseline

- 13.2.1 The site lies approximately 50 km south of Edinburgh Airport, 75 km to the south-east of Glasgow Airport and 75 km to east of Glasgow Prestwick Airport. It is also 7 km to the west of the Talla radio navigation beacon, making this a busy section of controlled airspace used to protect traffic operating to and from the airports in the region. The nearest military air traffic control radar is located at RAF Spadeadam, over 60 km to the south-east.

13.3 Predicted Effects

- 13.3.1 The assessment of effects on aviation and radar considers the potential for technical impacts and the operational acceptability of any such impacts. Rather than following an EIA process of assessing the significance of effects, the primary consideration is the actual or likely position of the specific aviation stakeholders. The assessment of effects on these receptors is therefore one of technical analysis and consultation and seeks to identify if any identified effects are likely to be 'acceptable' or 'not acceptable' to the asset owner, and if not acceptable, to establish any potential technical mitigation solutions.
- 13.3.2 Consultation was undertaken with the Ministry of Defence (MOD), through the Defence Infrastructure Organisation (DIO); Edinburgh Airport; Glasgow Prestwick Airport; Civil Aviation Authority (CAA); and NATS Safeguarding.
- 13.3.3 With the exception of NATS and MOD, all other consultees listed above advised that the Proposed Development would not have an impact on their aviation interests or infrastructure.
- 13.3.4 The CAA have approved a reduced lighting scheme for the Proposed Development such that Turbine 1, Turbine 3 and Turbine 6 are lit (details are set out in Technical Appendix 16.1).



- 13.3.5 A potential impact on the Lowther Hill radar was identified by NATS and a radar mitigation scheme has been proposed which would be implemented by condition. In the case of MOD, infrared⁸ aviation safety lighting has been requested and included in the Proposed Development.
- 13.3.6 No significant effects on aviation are predicted.

14 Other Considerations

- 14.1.1 Chapter 17 of the EIA Report evaluates the effects of the Proposed Development on other considerations, including shadow flicker, carbon balance, telecommunications, major accidents and disasters, population and human health; and the Eskdalemuir seismic array.

14.2 Shadow Flicker

- 14.2.1 Shadow flicker may occur when the sun passes behind the blades of a wind turbine and casts a shadow over neighbouring properties. As the blades rotate, the shadow of the blades flicks on and off, an effect known as shadow flicker. The effect can only occur inside buildings, where the flicker appears through a window opening.
- 14.2.2 The shadow flicker study area is defined as 2 km plus 100 m micro-siting, which equates to 2,100 m, and 130 degrees either side of north of any turbine (properties outwith this will not experience shadow flicker due to the orientation of the sun relative to the property). Thirty-one properties sit within the shadow flicker study area and were assessed for shadow flicker effects.
- 14.2.3 Based on professional judgement, and in line with relevant guidance from other countries, the shadow flicker assessment has adopted a criterion of 30 hours or more of shadow flicker in one year as a

⁸ Infrared lighting is not visible to the naked eye.

significant effect⁹. Where less than 30 hours of shadow flicker is predicted to occur in one year at a particular property, this is considered to be not significant.

- 14.2.4 When assuming 365 days of sunshine and continuous and sufficient wind to rotate the blades, the shadow flicker assessment determined that 21 of the 31 properties could potentially experience over 30 hours of shadow flicker per year. However, when the historic meteorological data was added to the model to add the 'realistic' sunshine hours, the annual hours of shadow flicker anticipated at all properties, with the exception of Hopehead bothy, are under the 30 hours threshold.
- 14.2.5 Shadow flicker at Hopehead bothy could be experienced for up to 40.1 hours per year based on the 'realistic' sunshine hours and therefore experience a significant adverse effect. However, Hopehead is a bothy, inhabited infrequently overnight and therefore the likelihood of shadow flicker effects being experienced is low.
- 14.2.6 The Applicant is committed to promptly investigating any complaints of shadow flicker and taking appropriate action as required. This would comprise an investigation which considers the weather conditions at the time of the alleged shadow flicker, to determine which turbines were creating the effect and the extent of the shadow flicker created. If a loss of amenity is confirmed, then the shadow flicker control module would be activated. The module controls the turbine causing the shadow flicker which would be programmed to shut down on specific dates at specific times when the sun is bright enough, there is sufficient wind to rotate the blades, and the wind direction is such that nuisance shadow flicker could occur. Following implementation of this mitigation, no significant effects would result for shadow flicker.



Photomontage from A701 at the Source of the Tweed

14.3 Climate and Carbon Balance

It is estimated that the Proposed Development would displace approximately 3.5 million tonnes of carbon dioxide (CO₂) in its lifetime when compared to the amount of CO₂ fossil fuels would have produced to generate the same amount of electricity. It is also expected to take approximately 1.4 years to offset the CO₂ that is released.

- 14.3.1 Onshore wind farms by their very nature tackle the issue of climate change. The 'Carbon Calculator' is the Scottish Government's tool to support the process of determining the carbon impact of wind farm developments in Scotland (adverse and beneficial), which in turn establishes any effect on climate.
- 14.3.2 The Proposed Development is expected to take approximately 17 months (1.4 years) to offset the carbon released to the atmosphere (the CO₂ debt) from the construction of the wind farm. Following this the Proposed Development would in effect be in a net gain for the remaining 48.6 years of its operational life, contributing to national CO₂ reduction targets.

⁹ There is no guidance in Scotland or the UK that specifies this as a limit. Northern Ireland's Best Practice Guidance to PPS18: Renewable Energy (Department for the Environment, 2009) sets the 30hr limit which we use as a suggested level here.

14.4 Television and Telecommunications

- 14.4.1 Effects on television and radio signal have been scoped out of assessment as digital television is unlikely to be affected by wind turbines compared to analogue television and interference to the radio signal is unlikely to noticeably affect audio signal.
- 14.4.2 Consultation was undertaken with telecommunication providers who confirmed that the Proposed Development would have no impact on their links.

14.5 Major Accidents and Disasters

- 14.5.1 The vulnerability of the Proposed Development to major accidents and natural disasters, such as flooding, sea level rise, or earthquakes, is considered to be low due to its geographical location and the fact that its purpose is to ameliorate some of these issues.
- 14.5.2 With regard to risks of accidents during the construction phase, the construction works for the Proposed Development would be undertaken in accordance with primary health and safety legislation, including the Health and Safety at Work Act 1974 and the Construction (Design and Management) (CDM) Regulations 2015 which would include a requirement to produce emergency procedures in a Construction Phase (Health & Safety) Plan in accordance with the Regulations.
- 14.5.3 Appropriate warning signs would be installed concerning restricted areas of the site such as the substation compound, BESS, switchgear and metering systems. All on-site electrical cables would be buried underground with relevant signage. Safety measures would be incorporated within the proposed BESS facility in order to minimise the risk of fire and the risk of contamination to surface water receptors.
- 14.5.4 Monitoring systems and protocols are in place to monitor weather conditions at the site of wind turbines and to monitor the condition of the turbines themselves, for example, re-starting turbine blades in a controlled manner following an icy period to prevent ice-throw.

14.6 Eskdalemuir Seismic Array

- 14.6.1 The Proposed Development is located within the statutory consultation zone of the seismological recording station at Eskdalemuir, an asset that contributes to the Nuclear Test Ban Treaty. Wind turbines within 50 km of Eskdalemuir can interfere with seismic monitoring at the station.
- 14.6.2 The Eskdalemuir Working Group which includes the Scottish Government, the MOD, Scottish Renewables and a number of developers are working together to agree a solution whereby the “re-calculated noise budget” is fairly allocated to wind farms in planning and future developments.
- 14.6.3 The Applicant is supportive of the Eskdalemuir Working Group and will abide by the allocation process and required mitigation once fully agreed.

15 Summary of Significant Effects

- 15.1.1 The EIA for the Proposed Development has been carried out in accordance with regulatory requirements and guidance on good practice. The findings of the surveys undertaken, in addition to consultation, have informed the design process and assessment. Design modifications and pre-construction, construction and operational mitigation have been implemented to remove and reduce significant adverse effects.
- 15.1.2 Significant adverse effects remain on the landscape and visual amenity as these effects cannot be mitigated further given the inherent nature of the wind farm, however they have been reduced to the lowest practical level through the iterative design process.
- 15.1.3 A significant adverse effect is also anticipated on the setting of the Weird Law platform Scheduled Monument. The location of the Weird Law, platform settlement was considered during the design process and efforts were made to limit the impact of the Proposed Development on its setting as far as reasonably possible. There will be no significant effects on the integrity of the setting of the Scheduled Monument.
- 15.1.4 The Proposed Development would have a significant beneficial effect on recreational receptors through the construction of the recreational heritage trail.

16 Next Steps

- 16.1.1 The ECU will consider the Section 36 application and the findings of the EIA. Before making a decision on the application, the ECU will consult a number of consultees including SBC, NatureScot and SEPA, and will consider all representations received from other parties including members of the public.

- 16.1.2 Any public representations to the application may be submitted via the ECU website at www.energyconsents.scot/Register.aspx; by email to the Scottish Government, Energy Consents Unit mailbox at representations@gov.scot; or by post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds for representation.

17 References

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