Scottish & Southern Electricity Networks

TRANSMISSION

Greens 400 kV Substation

Environmental Impact Assessment Report

Volume 1 | Non-Technical Summary (NTS)

December 2024

Scottish & Southern Electricity Networks
TRANSMISSION

CONTENTS

OTHER VOLUMES

1. INTRODUCTION

1.1 Overview

1.1.1 This Non-Technical Summary (NTS) forms part of the Environmental Impact Assessment Report ("EIA Report") prepared on behalf of Scottish Hydro Electric Transmission plc ("the Applicant") who, operating and known as Scottish and Southern Electricity Networks Transmission ("SSEN Transmission"), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands.

1.1.2 The EIA Report has been prepared by WSP UK Limited (hereafter referred to as WSP), on the behalf of the Applicant, to accompany an application for consent for the Greens substation (hereafter also referred to interchangeably as "the Proposed Development") under the Town and Country Planning (Scotland) Act 1997 (as amended) ("the 1997 Act")[1].

1.1.3 The Applicant has applied for full planning permission under the Town and Country Planning (Scotland) Act 1997 (as amended) for consent to construct and operate a new 400 kV substation, to be known as 'Greens substation', in the vicinity of the existing New Deer substation near Cuminestown in Aberdeenshire (National Grid Reference NJ 819 476), hereafter referred to as 'the Proposed Development'. The location of the land required to construct and operate the Proposed Development (hereafter referred to as 'the Site') is shown on **Figure 1 – Site Boundary** and an overview of the Proposed Development is shown on **Figure 2 – Proposed Development**.

1.2 Environmental Impact Assessment (EIA)

1.2.1 An Environmental Impact Assessment ("EIA") has been undertaken for the Proposed Development in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ("the EIA Regulations")[2] to assess the likely significant effects of the Proposed Development. The results of the EIA are presented within the EIA Report (**Volume 2**) and summarised in this NTS. The EIA Report informs readers of the nature of the Proposed Development, describes the existing environmental conditions in and around the Site, identifying sensitive assets or features and the methods used to assess whether environmental effects, either beneficial or adverse, are predicted to occur during site construction, and the operation of the Proposed Development. Where appropriate, it also sets out measures (defined as 'mitigation measures') to prevent, reduce or offset significant adverse environmental effects.

1.2.2 The EIA Report is structured as follows:

- Volume 1: Non-Technical Summary (NTS);
- Volume 2: EIA Report;
- Volume 3: Figures;
- Volume 4: Appendices; and
- Volume 5: Confidential Appendices.

1.2.3 The aim of this NTS is to summarise the content and the main findings of the EIA Report in a clear and concise manner to assist the public in understanding what the environmental effects of the Proposed Development are likely to be.

1.2.4 The full EIA Report provides a more detailed description of the Proposed Development and the findings of the environmental assessments undertaken.

[1] Town and Country Planning (Scotland) Act 1997. [Online] Available at: https://www.legislation.gov.uk/ukpga/1997/8/section/46.
[2] Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online] Available at: https://www.legislation.gov.uk/ssi/2017/102/contents/made.

1.2.5 Notice of the application for full planning permission, including this EIA Report and associated documents and figures, will be published on the Council's application website, and advertised by the Council in the Edinburgh Gazette, the Banffshire Journal and Buchan Observer. Hard copies of this EIA Report and associated documents and figures will be available for viewing at selected local public locations during normal opening hours, the locations of which are to be agreed with the Council.

1.2.6 Any representations should be made via the Aberdeenshire Council online portal. Electronic versions of the application, including this EIA are available to view and comment on via the Aberdeenshire online portal: https://upa.aberdeenshire.gov.uk/online-applications/search.do?action=simple&searchType=Application

1.2.7 Notice of the application, and details of the Proposed Development, are available on SSEN Transmission's website: https://www.ssen-transmission.co.uk/greens

1.2.8 This EIA Report is available in other formats if required. For details, including costs, contact:

Chris Gardner
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2. PROPOSED DEVELOPMENT NEED

2.1.1 The Applicant owns and maintains the electricity transmission network across the north of Scotland and holds a transmission licence under the Electricity Act 1989 ("the 1989 Act")[3]. The Applicant has a statutory duty under Section 9(2) of the 1989 Act to develop and maintain an efficient, co-ordinated, and economical system of electrical transmission, and a separate duty to facilitate competition between current and new generators of electricity. Where there is a requirement to extend, upgrade or reinforce its transmission network, the Applicant's aim is to achieve an environmentally aware, technically feasible and economically viable option which would cause the least disturbance to the environment and the people who use the area.

2.1.2 By 2030, both the UK and Scottish governments are targeting a big expansion in offshore wind generation of 50 GW and 11 GW respectively. The Scottish Government has also set ambitious targets for an additional 12 GW of onshore wind by 2030. Across Great Britain, including the north of Scotland, there needs to be a significant increase in the capacity of the onshore electricity transmission infrastructure to deliver these 2030 targets and a pathway to Net Zero. The need for these reinforcements is also underlined within the British Energy Security Strategy[4], which recognised the significant impact on the cost of living from rising gas prices and sets out a plan to increase the supply of electricity from zero-carbon British sources to deliver affordable, clean and secure power in the long term.

2.1.3 The National Grid published the Pathway to 2030 Holistic Network Design (HND) in July 2022[5] providing detail on a recommended approach for connecting offshore wind farms, including the associated offshore and onshore transmission network requirements. The HND identified the requirement to reinforce the onshore transmission system between Beauly and Peterhead, via Blackhillock and New Deer (near the Site) through the construction of a new 400 kV OHL (the BBNP 400 kV OHL). To enable these new connections, new 400 kV substations, such as the Proposed Development, are required at key locations to provide connection points for the BBNP 400 kV OHL. These substations, of which the Proposed Development is one, will also offer opportunities for onshore and offshore renewable generation to connect into the reinforced electricity network.

2.1.4 The Accelerated Strategic Transmission Investment (ASTI)[6] projects within the Proposed Development are National Developments that are explicitly supported by national policy, the electricity system operator, and the energy regulator. The Proposed Development would contribute significantly towards the delivery of the UK and Scottish Government's Net Zero Targets and help reduce the UK's dependence on imported oil and gas.

[3] Electricity Act 1989. [Online] Available at: https://www.legislation.gov.uk/ukpga/1989/29/contents.

[4] HM Government, (2022). Policy paper – British energy security strategy. [Online] Available at: https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy.

[5] National Grid Electrical System Operator (ESO), 2022. Pathway to 2030 – A holistic network design to support offshore wind deployment for net zero. [Online] Available at: https://www.nationalgrideso.com/document/262676/download.

[6] Ofgem, (December 2022). Decision on accelerating onshore electricity transmission investment. [Online] Available at: https://www.ofgem.gov.uk/sites/default/files/2022-12/ASTI%20decision%20doc%20-%20Final_Published.pdf.

3. PROJECT DESCRIPTION

3.1 Introduction

3.1.1 This section describes the key components of the Proposed Development, as shown on **Figure 2 – Proposed Development**.

3.2 Key Components

400 kV Substation

3.2.1 The platform footprint, which also accommodates service roads, parking areas and circulation space for management and maintenance of the substation, measures approximately 375 m width by 700 m length. The 400 kV substation will comprise two 400 / 132 kV Super Grid Transformers (SGTs), outdoor Air Insulated Switchgear (AIS) and associated busbars. The SGTs will be enclosed to protect from the weather and reduce the noise impact. The substation layout is composed of a series of 27 bays that will provide the necessary connections for current and future transmission requirements in and out of the substation. The proposed AIS substation offers a SF6 free technology solution, which is a key part of the Applicant's commitments and responsibilities to the decarbonisation of the electricity network.

Plate 3-1 Example 400 kV Substation

OHL Tower Platform

3.2.2 There is a platform to the north of the substation platform, for which consent is sought as part of the Proposed Development. This platform will be 200 m by 90 m and is required for two towers for the BBNP 400 kV OHL to enter and leave the Site. The associated OHL towers and their foundations are to be consented through the BBNP 400 kV OHL Section 37 Consent and therefore do not form part of this application.

Substation Buildings

3.2.3 There will be three buildings situated within the substation, with two housing equipment required to support the substation (synchronous condensers), and one smaller building (control building) to provide office space, low voltage control equipment for operation of the substation, welfare, and spare storage accommodation. The approximate dimensions for the buildings are as follows:

- synchronous condensers – height of 14.5 m, width of 32.3 m and 33 m length; and
- control building - height of 6 m, width of 24.6 m and 48.9 m length.

The synchronous condensers are the tallest structures on the Site.

3.3 Ancillary Works

3.3.1 The Proposed Development would also include the following ancillary works.

Drainage

3.3.2 A surface and foul water drainage strategy has been prepared for the Proposed Development, which includes drainage and sustainable drainage systems (SuDS). SuDS mimic natural drainage processes to reduce the effect on the quality and quantity of runoff from developments and provide benefits to amenity and biodiversity. The SuDS have been integrated within the landscape proposals to enhance amenity, biodiversity, and habitat, whilst protecting and / or enhancing water quality.

3.3.3 The proposed surface water drainage network has been designed so that runoff from the substation platform, access roads, other built features and landscaped areas would be collected and conveyed via swales or pipework into detention basins for treatment and attenuation (see example detention basin shown on **Plate 3-2**). Collected surface water would discharge into one of the existing or realigned channels, eventually discharging to the Burn of Greens. The detention basins have been designed to accommodate the maximum run-off from a 1 in 200-year (plus climate change allowance of 37%) storm event.

3.3.4 During construction, conveyance ditches will be installed around construction laydown areas and will discharge into settlement lagoons. Domestic flows from the office and welfare facilities will be connected to a septic tank.

Lighting

3.3.5 Floodlights would be installed but would only be used in the event of a fault during the hours of darkness; during the over-run of planned works; or when sensor activated as security lighting for nighttime access. The roads would not be lit under normal operation. A light would also be provided at the access gates.

Security Fencing

3.3.6 A palisade fence with intruder detection system, totalling 4 m in height, would be installed around the substation platform. In addition, a standard post and wire perimeter fence would be installed around the Site Boundary, this would be a stock/deer proof fence to exclude grazing animals and allow establishment of landscaping and screen planting.

Design

3.3.7 The design principles of the Proposed Development have been driven by a combination of technical requirements, and adopted design principles to ensure the Proposed Development is sensitively sited and designed. A series of mitigation measures have been identified to reduce the potential environmental effects of the Proposed Development. This mitigation includes landscape planting and mounding which has been incorporated into the design to provide habitat biodiversity and minimise potential landscape and visual impacts where possible.

Access

3.3.8 The Site would be accessed from the C29S, the existing minor road on the eastern boundary of the Site. A new bellmouth will be created off the C29S, along with new access / haul roads within the Site, which would then become the permanent access solution for the Site following completion of construction. The C29S is intended to be widened as part of the associated works for the Site.

3.3.9 A Construction Traffic Management Plan (CTMP) has been prepared by the Principal Contractor, in consultation with the Applicant, Aberdeenshire Council and Transport Scotland. The CTMP describes all mitigation and signage measures that are proposed on the public road network and is included in **Volume 4, Appendix 11.1: Construction Traffic Management Plan**.

Earthworks

3.3.10 All hardcore and earthworks materials for the construction of the Proposed Development would either be won on site through cutting of the existing surface to construct the substation platform or imported locally. A detailed cut-fill exercise would be undertaken to achieve a level platform on which to construct the substation infrastructure.

Underground Cabling

3.3.11 The proposed UGC works between the Proposed Development and the existing New Deer Substation (approximately 2 km to the southeast of the Site) fall under SSEN Transmission's permitted development rights and comprise the installation of a new aluminium conductor 400 kV underground cable circuit. The UGC is not included as part of this EIA and will have a separate voluntary environmental appraisal undertaken to support construction of the UGC.

Biodiversity Net Gain

3.3.12 Biodiversity Net Gain (BNG) is a process which leaves nature in a better state than it started. SSEN Transmission has developed a BNG toolkit based upon the Natural England metric[7], which aims to quantify biodiversity based upon the value of habitats for nature. SSEN Transmission use their BNG approach as a valid method to demonstrate positive effects for biodiversity as required under NPF4.

3.3.13 SSEN Transmission is committed to protecting and enhancing the environment by minimising the potential impacts from their construction and operational activities. As part of this approach, the Applicant is committed to providing a 10 % net gain and the BNG assessment undertaken as part of this EIA demonstrates that this should be comfortably achieved.

3.4 Construction of the Proposed Development

3.4.1 Key tasks during construction of the Proposed Development would relate to:

- enabling works, site clearance and demolitions;
- substation platform earthworks and creation of a level platform;
- construction of perimeter and site drainage, including SuDS;
- construction and installation of the substation buildings;
- installation of electrical plant;
- creation of landscaping features (planting and mounding);
- erection of a palisade security fence up to approximately 4 m in height around platforms;
- commissioning; and
- reinstatement.

Site Clearance and Demolitions

3.4.2 The following structures have been identified for demolition:

- Mains of Greens Farm;
- Parkside of Greens; and
- Mains of Greens Bungalow.

3.4.3 Where required, vegetation would be carefully removed from within the Site, including trees and hedgerows subject to any ecological considerations relating to timing and method of working. Where possible, existing

[7] Natural England Biodiversity Metric 3.1. [Online] Available at [http://publications.naturalengland.org.uk/publication/6049804846366720] [Accessed: February 2024].

vegetation would be retained. The intention is also to retain as much of the perimeter hedgerows as possible within the technical requirements of the Proposed Development.

Construction Programme and Working Hours

3.4.4 It is anticipated that construction of the Proposed Development would take place over a three year programme, subject to consents and resource availability.

3.4.5 Construction activities would in general be undertaken during daytime periods. Working hours are currently anticipated seven days a week between approximately 07:00 to 19:00 March to September and 07:30 to 17:30 (or within daylight hours) October to February. Any out of hours working would be agreed in advance with Aberdeenshire Council.

Temporary Construction Compound

3.4.6 Temporary site compounds and laydown areas required during construction would be located within the Site. These would provide office and welfare facilities for site staff, parking, laydown areas and holding and servicing space for construction plant, as shown on **Figure 3 – Proposed Temporary Works Plan**.

Environmental Management during Construction

3.4.7 Works would be carried out in accordance with industry best practice construction measures, guidance, and legislation, together with the following documents and procedures.

3.4.8 General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) have been developed by the Applicant.

3.4.9 A contractual management requirement of the Principal Contractor would be the development and implementation of a Construction Environmental Management Plan (CEMP). This document would detail how the Principal Contractor would manage the Site in accordance with all commitments and mitigation detailed in the EIA Report, statutory consents and authorisations, and industry best practice and guidance. An Outline CEMP is appended to the EIA Report (**Volume 4, Appendix 3.2 Outline CEMP**) and contains the framework for the Principal Contractor's CEMP.

3.4.10 The implementation of the CEMP would be managed on site by a suitably qualified and experienced Environmental Clerk of Works (EnvCoW), with support from other environmental professionals as required. The Applicant would carry out regular inspections and audits to monitor the implementation of the CEMP.

3.5 Future Maintenance of the Substation

3.5.1 Substation plant requires maintenance and inspection at regular intervals. Most substations have a monthly inspection, whilst varying degrees of maintenance would be undertaken annually. There would be other visits as required for operational duties.

3.5.2 The Proposed Development would not be manned on a permanent basis, with operations being controlled remotely from SSEN Transmission's control centre in Perth.

3.6 Decommissioning

3.6.1 Planning permission is sought in perpetuity. Should the substation be decommissioned full details of the decommissioning plan would be agreed with the appropriate authorities and the landowners prior to any decommissioning works commencing.

4. THE SITE SELECTION PROCESS AND ALTERNATIVES

4.1.1 The selection of the Site for the Proposed Development has followed a staged process undertaken by the Applicant, which considered a number of alternative site locations and design solutions. During this process there has been consideration of environmental, technical and economic factors in evaluating potential reasonable alternative sites, with the objective of identifying a site which is technically feasible and economically viable, and which causes the least disturbance to the environment and to the people who live, work, visit in proximity to the Proposed Development.

Approach to Site Selection

4.1.2 The site selection process was undertaken in line with the 'Holford Rules', which is guidance that has been widely used throughout the UK since the 1960s. Whilst the Holford Rules principally apply to the development of overhead lines, they continue to inform best practice and contain supplementary notes on the siting of substations. SSEN Transmission has developed its own guidance, Substation Site Selection Procedures for Voltages at or above 132kV[8], based on the principles set out in the Holford Rules. This guidance broadens the basis for site selection decisions to reflect contemporary practice and to provide a framework to ensure environmental, technical and economic considerations are identified and appraised at each stage of the site selection process. The site selection process, alternatives selection and MCA for the Proposed Development have been undertaken in accordance with Substation Site Selection Procedures[8]. The guidance splits the site selection stage of a project into three principal stages, as follows:

4.1.3 Stage 0: Pre-Site Selection Activities;

- Stage 1: Initial Site Screening;
- Stage 2: Detailed Site Selection; and
- Post Site Selection Activities: Consenting Process.

4.1.4 Each stage is an iterative process and involves an increasing level of detail and resolution, bringing technical, environmental and economic considerations together in a way which seeks to achieve the best balance.

4.2 Initial Site Screening

4.2.1 Initially 14 potentially suitable site options were identified within a 5 km radius of the existing New Deer Substation.

4.2.2 A comparative appraisal of the identified sites was informed by a desk-based appraisal and supported by site walkovers and a workshop. Following the comparative analysis exercise, six site options were taken forward to the next stage.

4.3 Detailed Site Selection

4.3.1 Detailed Site Selection involved the further detailed appraisal of the environmental and planning, technical and economic factors of the six sites taken forward from the initial site screening stage.

4.3.2 Overall, following comparison of all the environmental and planning factors, Site 13 (now known as the Site) was considered the Preferred Site Option from an environmental and engineering perspective. From an environmental perspective the preference for Site 13 was primarily due to the potential for reduced impacts on landscape character and visual amenity and lower potential for impact on protected species, prime agricultural land, and the quality and quantity of groundwaters in the area in comparison with the other options.

4.3.3 A round of consultation was undertaken in March and April 2023 to present the six site options considered in Stage 2 and the rationale for, and approach to, the selection of the Preferred Site. A range of responses was

[8] SSEN Transmission (July 2022), Substation Site Selection Guidelines for Voltages at or above 132kV

received from stakeholder, including concerns about the potential environmental impacts, particularly on local biodiversity, impacts to the local community including visual and tourism impacts.

4.3.4 Following this, Site 13 was taken forward as the Site for the Proposed Development.

4.4 Further Consideration of Alternatives during the EIA Process

4.4.1 The consideration of alternatives during the EIA process at the consenting stage has focused on the siting of infrastructure, and landform and screening, as a result of more detailed environmental and engineering information due to surveys and further studies (such as for ecological species and habitats, landscape and visual receptors, cultural heritage and ground investigation results).

4.4.2 Design development has also been undertaken to optimise the height of the substation platform in order to achieve the ideal balance of cut and fill material, thereby minimising the material import and waste export requirements for construction of the Proposed Development. The aim of this was to minimise construction vehicle movements and maximise onsite material re-use.

5. EIA PROCESS AND METHODOLOGY

5.1 EIA Approach

5.1.1 EIA is a process that considers how a proposed development is predicted to change existing environmental conditions and what the consequences of such changes will be. It therefore informs both the design, and the decision-making processes related to the grant of development consents.

5.1.2 The EIA Report has been prepared in accordance with the EIA Regulations and current best practice guidance and meets the requirements of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark scheme. The proposed methodologies for the assessment of likely significant effects for each topic area covered in the technical chapters within the EIA Report have been the subject of consultation with statutory and non-statutory consultees.

5.1.3 The result of the assessment is the determination of whether the likely effect of the Proposed Development on the receptors in the study area would be significant or not significant, and, adverse or beneficial.

5.1.4 Mitigation measures have been identified to prevent, reduce, or remedy any potentially significant adverse environmental effects identified, beyond that already taken into account as normal good practice. Such measures would be implemented during detailed design stage, construction and/or operation of the Proposed Development. Each technical chapter of the EIA Report details the measures required to mitigate identified likely significant effects.

5.1.5 The EIA has examined potential effects of the Proposed Development on the following topics:

- Forestry;
- Landscape and Visual Impact;
- Ecology, Nature Conservation and Ornithology;
- Cultural Heritage;
- Traffic and Transport;
- Hydrology, Hydrogeology, Geology and Soils;
- Noise and Vibration; and
- Cumulative Effects.

5.1.6 Each of the above topics consider how the Proposed Development would affect potential receptors; a group, person, or environment that has the potential to be impacted by the Proposed Development. Some receptors would be more sensitive to environmental impacts than others.

5.1.7 In accordance with the EIA Regulations, the assessment has considered 'cumulative effects'. There are two aspects to cumulative effects, defined as follows:

- in-combination effects: the combined effect of the Proposed Development together with other reasonably foreseeable future developments (taking into consideration effects during the construction and operational phases); and
- effects interactions: the combined or synergistic effects caused by the combination of several effects on a particular receptor (taking into consideration effects at the site preparation and earthworks, construction and operational phases), which may collectively cause a more significant effect than individually. A theoretical example is the culmination of disturbance from dust, noise, vibration, artificial light, human presence and visual intrusion on sensitive fauna (e.g. certain bat species) adjacent to a construction site.

5.1.8 The future developments that have broadly been considered with respect to in-combination effects within this EIA Report are shown on **Figure 4 – Cumulative Developments** and are listed in **Table 5-1**.

Table 5-1: Cumulative Developments

ID	Development Name and Type	Application Status (Application Reference)
1	BBNP 400kV OHL	Pre-Application (ECU00005165)
2	Electrical Transmission Infrastructure Comprising Transition Joint Bays, Underground Cable Circuits Within a Cable Corridor, Substation and Ancillary Works (Caledonia Offshore Wind Farm Connection)	Decided- PAC Agreed as Specified in Notice (ENQ/2023/0739)
3	Installation of Underground Cable	Awaiting decision (ENQ/2022/1845)
4	Formation of Onshore Landfall Point, Laying of Underground Cable and Erection of Substation	Approved (APP/2023/1454)
5	Erection of a Synchronous Compensator	PAC Agreed as Specified in Notice (ENQ/2021/1180)
6	Formation of Forestry Private Way	Decided - Prior Approval Required (APP/2023/2102)
7	Formation of Footpaths	Approved (APP/2022/2571)
8	Formation of Footpath	Approved (APP/2021/2773)
9	Formation of Footpath	Approved (APP/2022/0034)
10	Installation of Footpath and Associated Post and Wire Fencing	Approved (APP/2022/0076)
11	Smiddybank Battery Energy Storage System (BESS)	Pre-Application (ECU00005004)
12	Monquhitter BESS	Pre-Application (ECU00005129)
13	Greens Underground Cable Connection	N/A (Permitted Development)

6. SCOPE AND CONSULTATION

6.1 EIA Scoping

6.1.1 Scoping is the stage of the EIA process that sets out what needs to be assessed in the EIA to help define the approach to the assessment and what information may be needed to identify the likely significant effects from the development. Scoping provides a basis for a proportionate approach to EIA that is focused on likely significant effects to be considered and assessed. Consultation and engagement with stakeholders in the early stages of a development helps greatly to inform decisions about the design and the EIA scope.

6.1.2 An EIA Scoping Report was submitted to Aberdeenshire Council in June 2024 with a formal request for an EIA Scoping Opinion. The EIA Scoping Report contained information on the existing environmental conditions of the Site, details of the Proposed Development and the proposed assessment topics and methods. An EIA Scoping Opinion was received from Aberdeenshire Council in September 2024 which confirmed the scope of the assessments to be included in the EIA Report and it made reference to site specific issues of interest to Aberdeenshire Council, to be considered and addressed in addition to those laid out in responses from consultees. The responses, contained within the EIA Scoping Opinion, were considered in detail during the EIA process. The EIA Report includes a matrix (**Volume 4, Appendix 6.5 Scoping Matrix**) detailing the key issues that were raised in the Scoping Opinion and how and where they are addressed in the EIA Report.

6.2 Consultation

6.2.1 Consultation is an important part of the EIA process and has been undertaken with a range of organisations and groups. The Applicant has sought to keep an open dialogue with local communities within the vicinity of the Proposed Development since the early stages and throughout the evolution of the Proposed Development. This has included carrying out consultation events during the site selection and consenting stages, engaging with statutory consultees, non-statutory consultees, community members, local organisations, local elected officials as well as landowners, residents and businesses that may be affected by the Proposed Development.

7. FORESTRY

7.1.1 The forestry chapter considers the likely significant effects from the construction and operation of the Proposed Development on forest and woodland areas. The assessment has been undertaken in line with the UK Forestry Standard (UKFS) guidance by Bidwells Forestry. Throughout the assessment, areas of semi-natural woodland are referred to as woodland, and areas of predominately commercial species are referred to as forests.

7.1.2 Secondary effects resulting from forestry activities, including effects on habitats and species, ornithology, hydrology and landscape and visual effects, would be considered within their respective chapters of this EIA Report and have therefore not been included within the Forestry Chapter.

7.1.3 The Study Area has been limited to the woodland removal required to create and safely operate the Proposed Development, which includes a small area of commercial forest plantation in the north west of the Site.

7.1.4 Forest walkover and mapping surveys were undertaken in October 2024, to confirm the extent of the woodland areas affected by the Proposed Development and to further assess the current woodland characteristics. Photographic records were taken to provide visual samples of the woodland types. In addition to the site survey, existing data sources from the forest owner and their agents were reviewed and checked against the data collected onsite.

7.2 Baseline Conditions

7.2.1 The baseline characterisation identified one landowner with forest or woodland potentially affected by the Proposed Development. A Woodland Report has been prepared for the affected forest or woodland property.

7.2.2 The total areas of woodland habitats recorded within the Proposed Development are as follows:

- Commercial Woodland (2.46 ha).
- Semi-natural Woodland (0.21 ha).
- Hedgerow (1.73 ha).

7.3 Assessment of Potential Effects

7.3.1 The assessment identifies the potential for significant effects (pre-mitigation) on forest management and removal of semi-natural woodland during construction.

7.3.2 With the application of additional mitigation (good practice construction measures and compensatory planting provision), any residual effects from construction or operation of the Proposed Development on woodland removal and forest management would be not significant.

Cumulative Effects with Other Future Developments

7.3.3 A review of in-combination cumulative effects from developments known to the planning system within 5 km of Site has been undertaken. No significant cumulative effects have been identified under the assumption that developers will be required to undertake compensatory planting for any areas of felling.

8. LANDSCAPE AND VISUAL IMPACT

8.1.1 A thorough site selection process, followed by a comprehensive design process has been undertaken, with landscape professionals involved from the beginning of the design of the Proposed Development. This has ensured that landscape and visual effects have been a key consideration of the development of the design, with landscape and visual amenity embedded into the mitigation. It is recognised that a National Development of this scale and nature initiates localised significant landscape and visual effects, however, through iterative and collaborative design the extent of the potential landscape and visual impacts from the Proposed Development has been reduced.

8.1.2 The landscape assessment considers the effects of change and development on the landscape as a resource. The character of the landscape derives from a combination of physical factors, natural processes, and human intervention. Landscape effects are a combination of the physical changes to the fabric of the landscape arising from the Proposed Development and perceptual changes – the way these physical changes alter how the landscape is perceived.

8.1.3 Visual assessment is concerned with the general visual amenity of people who may be affected by the Proposed Development and their perception and responses to changes in these views.

8.1.4 The assessment of likely significant effects on the landscape and on visual amenity arising from the Proposed Development considers both construction and operational phases. The assessment considers the baseline conditions and the mitigation that has been built into the design. The assessment reports on the residual effects of the Proposed Development, considering committed mitigation, assessed at Year 1 and Year 15 of operation.

8.1.5 The Study Area for the visual assessment is based on the results of the visibility study as, by definition, visual effects can only occur where at least some part of the development can be seen. Therefore, the study area for the LVIA and for the cumulative assessment for the LVIA have been set at 2 km from the Site to ensure the assessment focuses on potentially significant effects.

8.2 Baseline Conditions

8.2.1 The Site is located within gently undulating topography, dissected by rivers and burns. The Site lies on a gradual southeast facing slope falling from the gentle ridge of Waggle Hill less than 1 km west of the Site, to the shallow valley of the Burn of Greens, less than 1 km to the east. The Site and surrounding area is rural in character, predominantly a mixture of intensive arable and improved grazing land with conifer plantations on parts of the higher ground. The Site is used for arable production, grazing by livestock and in the northeast corner, a coniferous plantation. The poorly drained land near to the Burn of Greens is rough grazing while the remaining land in the west with improved drainage is used for arable. The field pattern is geometric with medium sized fields.

8.2.2 There are two small settlements near the Site, the village of Cuminestown, 2.5 km north of the Site and the town of New Deer, 5 km to the east. There are scattered farmsteads and individual residential properties across the Study Area, mostly in the order of 500 m to 1 km apart. Farms often have large storage sheds associated with the farmstead, used for storage of grain or housing livestock.

8.2.3 The Culsh Monument, 5 km east of the Site is a local landmark and viewpoint, sited on a local high point at 153 m Above Ordnance Datum.

8.2.4 The main road within the Study Area is the B9170 from New Deer to Cuminestown, approximately 1 km northeast of the Site at its closest point. There is a dense network of unclassified roads and tracks linking the scattered farms. A minor road used by local residents and farm vehicles forms the southern boundary of the Site. There are a number of cycle routes within the wider area, including a section of National Cycle Network

Route 1 but none with the potential to have a view of the Proposed Development within 2 km of the Site boundary.

8.2.5 The Rothienorman to New Deer to Peterhead 400kV OHL runs generally east to west,, approximately 1.4 km southeast from the site boundary at its nearest point. Other vertical features include local distribution lines, clusters of wind turbines and single wind turbines. These features are relatively common within this local landscape and detract from the rural character.

8.2.6 The Site lies within the Undulating Agricultural Plain – Aberdeenshire (LCT 20), as defined by NatureScot. LCT 20 is an open expansive landscape characterised by gently undulating hills and ridges, smoothly rounded terrain with broad shallow valleys and large fields.

8.3 Assessment of Potential Effects

Mitigation

8.3.1 Mitigation for Landscape and Visual effects has been embedded into the design of the Proposed Development. A design strategy was developed in the early stages of the EIA process, and includes the following key elements:

- Substation platform – the substation platform level has been specified to minimise the requirements for import and export of construction and waste materials.
- Landform design – new naturalistic landforms will be created to provide screening of the Proposed Development from local residents and users of the local road network.
- Habitat creation – a variety of new habitats are proposed, including extensive areas of new native species woodland, species-rich grass and wildflower. Over time the areas of new woodland will help to screen the Proposed Development from many local views.
- Drainage design – diverted watercourses are designed with a naturalistic watercourse profile.

Landscape Assessment

8.3.2 The Proposed Development would change the shape of the land and introduce larger scale infrastructure than currently exists into a predominantly rural landscape. It would have a significant adverse effect on the landscape very locally both during construction and on completion but a non-significant effect on the landscape more widely. The effect on the local landscape character would reduce over time as the mitigation planting becomes established; the effect would be non-significant 15 years after completion of construction.

Visual Amenity Assessment

8.3.3 The degree of significance at individual receptors varies according to their orientation in relation to the Site, local topography, and the presence or absence of screening elements such as buildings, walls, trees and shrubs between the receptor and the Site.

8.3.4 During construction and on commencement of operation there would be significant adverse visual effects on approximately a dozen residential properties within 1 km of the Site. There would also be significant adverse visual effects on users of three minor roads close to the Site.

8.3.5 The effect on visual amenity would reduce over time as the mitigation planting develops. By Year 15, the number of residential receptors significantly affected would have reduced although significant effects would remain for seven residential properties within approximately 500 m of the Site boundary. Of these, two would be neutral in nature: substantially changed but, once the mitigation is established, different not necessarily better or worse. Significant effects would also remain for users of the minor road along the southern edge of the site.

Cumulative Effects with Other Future Developments

8.3.6 In-combination cumulative effects on landscape character may occur alongside a number of future developments in the area. At construction phase Monquhitter BESS has the potential for in-combination

significant effects on landscape character. At operational phase, Monquhitter BESS and BBNP 400 kV OHL have the potential for significant cumulative effects on landscape character.

8.3.7 In-combination cumulative effects on visual amenity may occur alongside a number of future developments in the area. At construction phase, Caledonia Offshore Wind Farm Connection and Monquhitter BESS have the potential for in-combination significant effects on visual amenity. At operational phase, Monquhitter BESS and BBNP 400 kV OHL have the potential for significant cumulative effects on visual amenity.

9. ECOLOGY, NATURE CONSERVATION AND ORNITHOLOGY

9.1.1 The ecology, nature conservation and ornithology assessment has focused on Important Ecological Features (IEF) that have been established during the scoping and EIA process and occur within the Proposed Development's Ecological Zone of Influence (EZoI). IEFs are species and habitats present within the Proposed Development's EZoI that are of sufficiently high value that certain levels of impact upon them, as a result of the Proposed Development, could result in a significant effect. The description and valuation of ecological features has taken account of any likely changes, including, for example: trends in the population size or distribution of species; likely changes to the extent of habitats; and the effects of other proposed schemes or land-use changes.

9.1.2 The conservation value of each ecological feature was evaluated within a geographical context using the categories recommended in the Guidelines for Ecological Impact Assessment. The evaluation considered a variety of factors including: the rarity of a species or habitat; habitat diversity; whether the species population size is notable in a wider context; whether the habitats are important in supporting a rare species; whether species are on the edge of their habitat range; or whether the faunal assemblage is characteristics of that habitat type.

9.1.3 A desk study was undertaken to identify records of protected or notable species within 2 to 5 km of the Site between 2013-2023 (i.e. relatively recent records). This was supported by a range of habitat and species surveys undertaken between November 2022 and July 2024 to establish habitats and identify which protected species are present on Site.

9.1.4 An assessment of impacts and effects on badgers has been prepared in a separate, confidential technical appendix. Due to the on-going persecution of badgers, information relating to this species is considered sensitive.

9.2 Baseline Conditions

9.2.1 The assessment scoped in the following IEFs: habitats, bats, otter, water vole, fish, barn owls and badgers (separate confidential assessment). The species identified as IEFs have been valued in the context of the Site and surrounding area, and wider conservation status, including habitats (local), bats (district), otter (local), water vole (local), fish (district), barn owl (local).

Habitats

9.2.2 Generally, the Site comprises modified grassland and cropland, with built features / developed land including derelict buildings at Mains of Greens, a farm track and a minor road. A coniferous plantation was mapped in the northwest of the Site. Lines and small groups of coniferous trees were found by Mains of Greens. A drainage ditch extends through the Site from west to east, feeding into the Burn of Greens along the eastern Site boundary. Other linear features that were recorded include native hedgerows between crop fields. No EU Habitats Directive Annex 1 habitat types, important peat habitats, or irreplaceable habitats were identified within the Site or surrounding 250 m area. Habitats considered a priority at the Site were limited to hedgerows, providing connectivity across the open landscape for wildlife.

9.2.3 Species-poor, rush-dominated neutral grassland was mapped from low lying areas in the east and centre of the Site, these habitats may be groundwater dependent. No other habitats that could be groundwater dependent were identified within the Site and surrounding 250 m area.

9.2.4 The Burn of Greens, a small watercourse within the river Ythan catchment, and a tributary of the Littlewater Burn lies to the east of the Site. Following consultation with the Ythan District Salmon Fisheries Board (DSFB)

and previous aquatic walkover surveys, it is understood that the Littlewater Burn is a good quality habitat for all age classes of salmonid fish.

Bats

9.2.5 There were no commercially available records of bats identified within 5 km of the Site.

9.2.6 A total of 14 structures were identified within the survey area as having suitability to support roosting bats. A total of seven trees were identified within the survey area as having potential roost features and therefore suitable for use by roosting bats. However, during roost inspections, all trees and buildings at the Site showed no evidence of use by bats.

9.2.7 Automatic static bat detector surveys identified numerous bat calls around some of these buildings over the hibernation survey effort. Calls recorded were primarily common pipistrelle and soprano pipistrelle, therefore it is likely that buildings in and around the Site are being used by these bat species in the hibernation season. This was further supported by the dusk emergence surveys, which recorded a pipistrelle bat emerging from one of the buildings on the Site.

Otter

9.2.8 No commercially available records of otter were identified within 2 km of the Site. An otter spraint was recorded along the Burn of Greens.

9.2.9 The Burn of Greens contains suitable prey species for otters and therefore its associated watercourses, ditches and the nearby watercourses throughout the Site were deemed suitable habitat for otters to commute and forage along.

Water Vole

9.2.10 No commercially available records of water vole were identified within 2 km of the Site.

The majority of ditches within the survey area were considered to be of limited suitability for water vole, based on the intensive agriculture practices to the edge of these features and their potential to dry out. The bank composition, flow speed and vegetation were generally suitable to support water vole on the Burn of Greens. Clear evidence of foraging around burrow entrances was recorded, although no evidence was recorded to indicate current use by water vole. Habitat was considered unsuitable to support water vole outwith the immediate bankside vegetation, however they may be able to migrate between suitable areas along the watercourse both upstream and downstream.

Fish

9.2.11 Watercourses / drainage ditches within the Site, excluding the Burn of Greens, were of limited suitability for fish based on the intensive agriculture practices to the edge of these features and their potential to dry out. Fish habitat surveys found that the Burn of Greens provides suitable habitat for brown trout and brook lamprey.

9.2.12 A total of 55 fish were caught during electrofishing surveys the Burn of Greens. Brown trout (fry and parr) and brook lamprey (ammocetes) were sampled. Brook Lamprey was the most abundant species sampled, accounting for 82 % of the total number of fish caught.

Barn owl

9.2.13 A cluster of abandoned buildings associated with Mains of Greens farm and a small, stone barn approximately 400 m north of the Mains of Greens cluster offered suitability for roosting or nesting barn owls. However, there was no evidence of barn owls being present (no pellets or droppings) in June 2024 within the Site.

9.2.14 During a bat Preliminary Roost Assessment in October 2023, a barn owl was noted to fly out of the small stone barn north of the Mains of Green cluster, and pellets were found. Presumably the same bird, having moved

location, was then inadvertently disturbed from the Mains of Greens cluster. A barn owl was also incidentally seen during a bat survey in June 2024 inside the small stone barn north of the Mains of Greens cluster.

The baseline findings indicate a barn owl is roosting within buildings within the Site but there is no evidence of breeding.

9.3 Assessment of Potential Effects

9.3.1 Construction and operational effects have been assessed, including (not limited to) effects from habitat loss, habitat fragmentation, changes to resources, artificial lighting, disturbance / displacement of species / groups, and incidental mortality and injury of IEF species. The significance of these effects was balanced against the current distribution and abundance of otter, barn owls and relevant species of bats and fish, their population trends and conservation objectives at the relevant scale which they have been valued.

9.3.2 A suite of construction and operational mitigation measures has been identified for the species impacted by the Proposed Development, including sensitive construction working practices and replacement habitat creation. As a result, any residual effects from construction or operation of the Proposed Development on otter and fish have been reduced to non-significant. Residual effects on bats and barn owls are likely to be significant, however compensation measures have been identified to offset this and ultimately there would be no significant effects on bats and barn owls.

9.3.3 Beneficial effects for otter, water vole, and bats, driven by the landscape proposals and drainage strategy, have been identified but would be non-significant.

Cumulative Effects with Other Future Developments

9.3.4 A review of in-combination cumulative effects on IEFs from developments known to the planning system within 5 km of Site has been undertaken. No significant cumulative effects on any IEFs have been identified.

9.4 Enhancements

9.4.1 A Biodiversity Net Gain (BNG) assessment has been undertaken (see **Volume 4, Appendix 9.6 Biodiversity Net Gain Report**) to demonstrate that the Proposed Development would be able to deliver significant biodiversity enhancements on Site. The assessment predicts the Proposed Development would deliver the Applicant's commitment of a 10% net gain for habitat areas, when measuring the change in biodiversity units of habitats at the Site.

10. CULTURAL HERITAGE

10.1.1 Cultural Heritage comprises a diverse range of elements that are referred to throughout the EIA Report as heritage assets. Heritage assets are features that have been created or have undergone modification from human activity. This includes a wide range of visible and buried archaeological sites and monuments, as well as other historic features or places. Heritage assets comprise World Heritage Sites, Scheduled Monuments, Listed Buildings, Gardens and Designed Landscapes (GDL), Battlefields, Conservation Areas, buried archaeological remains, other historic buildings, and earthworks.

10.1.2 A Study Area of 250 m extending from the boundary of the Site has been used to identify heritage assets. The assessment has been informed by a review of all available archaeological records, historical documentary evidence, cartographic evidence, and photographic material. A targeted walkover survey of the accessible areas within the Site was carried out in November 2023 by heritage professionals.

10.1.3 Impacts on designated heritage assets at both construction and operation phases, and impacts on any heritage assets during operation phase have been scoped out.

10.2 Baseline Conditions

10.2.1 There are 12 heritage assets identified within the Site and Study Area. Within the Site, there are three non-designated heritage assets, comprising a rig-and-furrow, a farmstead, and a boundary dyke. The other nine heritage assets within the Study Area comprise five farmsteads, one mill, one building (Inchgreen Cottage), one croft, and one house dating to the post-medieval period.

10.2.2 The Site has low potential to contain archaeological remains from all periods, except the Modern period where the potential is negligible. There is currently no evidence to suggest that archaeological remains dating from periods apart from the post-medieval would be present within the Site, and any archaeological remains are likely to be agricultural in nature. It is possible that additional remains related to post-medieval agriculture could be located, such as rig-and-furrow.

10.2.3 The future baseline in relation to cultural heritage is expected to be the same as the present.

10.3 Assessment of Potential Effects

10.3.1 All groundbreaking activities associated with the construction of the Proposed Development have the potential to directly impact upon heritage assets. Such activities include, but are not limited to groundworks, topsoil stripping, ground compaction, access, drainage, stockpiling, and storage. As a worst-case, it has been assumed that all areas within the Site will be subject to groundbreaking works during construction, and that any known heritage assets or currently unknown sub-surface archaeological remains will be physically impacted by these works and wholly removed.

10.3.2 There are three non-designated heritage assets within the Site, one of which consists of upstanding buildings or structures. It has been assumed that these heritage assets would be demolished and removed as part of the Proposed Development, resulting in a significant effect to one of the assets prior to mitigation. As such the following mitigation measures are required:

- Historic Building Recording for Mains of Greens farmstead; and
- a programme of archaeological evaluation to investigate the presence or absence of archaeological remains is recommended, with the investigation methodology detailed in an appropriate Project Design, which will be agreed by Aberdeenshire Council Archaeology Service.

10.3.3 Once the proposed mitigation measures are considered, any residual effects arising from the construction of the Proposed Development would be not significant.

Cumulative Effects with Other Future Developments

10.3.4 The assessment concluded that there will be no cumulative effects in relation to heritage assets.

11. TRAFFIC AND TRANSPORT

11.1.1 The traffic and transport assessment considers the access proposals and potential traffic and transport effects associated with the construction and operation of the Proposed Development on the surrounding public road network and sensitive receptors.

11.1.2 The assessment is structured around the consideration of seven potential environmental effects related to traffic and transport within the Study Area: severance of communities; road vehicle driver and passenger delay; non-motorised user delay; non-motorised user amenity; fear and intimidation on and by road users; road user and pedestrian safety; and hazardous / large loads.

11.1.3 Considering the potential access routes and potential receptor locations, the Study Area has been identified as follows:

- C29S between Oldmill of Allathan and the Site Access;
- B9170 between the B9027 and Old Meldrum;
- B9027 between the B9170 and the A98;
- A948 between the B9170 junction at New Deer to the A90 east of Ellon;
- A981 (including B9028) between the B9028/A948 junction south of New Deer and the A950;
- C30S between the C29S and the B9005 at Cottown;
- B9005 between the C30S at Cottown and the A947 at Fyvie;
- A920 between Kirkton of Culsalmond and the B9170;
- A950 between the A98 and the Peterhead (A90);
- B9005 between the C30S at Cottown and the A947 at Fyvie; and
- C121B between the C29S and the B9170.

11.1.4 A desk study was undertaken that included reviews and identification of relevant transport policy, personal injury accident data, sensitive receptor locations and any other traffic sensitive receptors in the area. Ordnance Survey (OS) plans were reviewed to determining potential origin locations of construction staff and supply locations for construction materials, to inform the extent of local area road network to be included in the assessment and to identify constraints to the movement of Heavy Goods Vehicles (HGV) traffic and larger loads.

11.1.5 To establish baseline traffic flows, Automatic Traffic Counters (ATC) were installed at four locations. To supplement the ATC data, traffic survey data has been obtained from the Department for Transport (DfT) for the remaining road network contained within the Study Area. In addition, traffic data was obtained from consented developments in the area.

11.2 Baseline Conditions

11.2.1 The baseline conditions of each of the 11 potential access routes and receptor locations is outlined, including (but not limited to) carriageway type, speed limit, length, notable junctions, passing places and location.

11.2.2 A review of the traffic flow data indicates that the traffic and HGV volumes within the Study Area are low. Although it is noted that the C29S (South) between the proposed Site access and the C30S has the highest level of HGV activity within the Study Area. As this site was surveyed in 2023 for the EIA assessment of traffic and transport from the Green Volt Offshore Windfarm onshore grid connection, it is likely that the high percentage of HGVs on this link can be attributed to the construction of New Deer Substation, or vehicles servicing a waste management business operating close to the Site.

11.2.3 A review of the latest available accident data (2018-2022) shows that personal injury accidents were recorded for a number of the construction traffic routes. No accidents were recorded on the C29S, which would provide direct access to the Site. The A948 between B9170 and the B9028 (section of the A981) recorded the greatest

number of accidents and is slightly above national average. However closer analysis of the accidents on this link indicates that five of the ten accidents occurred at junctions, which does not directly compare with national averages which are calculated through traffic flow counts and road lengths. The accident data review confirmed that there are no specific safety concerns within the Study Area.

11.2.4 Due to the rural location of the Site, there are limited pedestrian facilities throughout the majority of the Study Area. There are pedestrian footways in Cuminestown, New Blyth, New Deer, Woodhead and Fyvie, however there are few footways present outwith these villages. There are no Core Paths within a 3.5 km radius of the Site entrance. The nearest Core Paths located within or near the Study Area are in New Deer, Cuminestown, New Blyth, Woodhead and Fyvie, with other Core Paths throughout the Study Area. There are a limited number of cycle facilities within the Study Area.

11.2.5 To assess the worst-case scenario forecasts, taken from the submitted Construction Traffic Management Plan, of peak construction movements anticipated in 2028, have been used for the traffic and transport assessment.

11.3 Assessment of Potential Effects

11.3.1 During construction, the overall increase in vehicle trips compared to the existing capacity of the road, has been assessed to be low. It is therefore considered that the existing road network can accommodate the anticipated temporary increase in traffic generated by construction activities and that the effects are not significant. Seven key traffic and transport criteria were assessed against thresholds identified by guidance and using professional judgement, with the greatest significance found to have temporary, short to medium term and not significant transport effects.

11.3.2 Operational traffic is considered to be so low that its effect would be negligible and therefore is scoped out of further assessment.

11.3.3 Construction traffic will be managed through the implementation of a CTMP and the residual effect has been determined to be negligible when assessed in relation to the seven key traffic and transport indicators.

Cumulative Effects with Other Future Developments

11.3.4 In relation to the cumulative impact of the Proposed Development with local developments, it is considered that the coincidence of the construction phases is not predicted to result in significant cumulative traffic effects on the road network. The study has demonstrated that there is spare capacity on the local road network to accommodate the predicted level and type of vehicles associated with the various schemes. It is considered that the cumulative effect would be temporary, short to medium term and not significant.

12. HYDROLOGY, HYDROGEOLOGY, GEOLOGY AND SOILS

12.1.1 The potential for construction effects on hydrology, hydrogeology, geology and soils have been assessed for the Proposed Development. Baseline conditions for the Proposed Development and surrounding area were established through desk study and ground investigation, it is noted however that further assessment is required in areas of historical land use.

12.1.2 The following sensitive hydrology, hydrogeology, geology and soils receptors within 1 km of the Proposed Development have been identified:

- surface water bodies, including the Burn of Greens and Little Water / Black Burn;
- groundwater bodies (Ellon and New Byth Groundwater Bodies and Southern Highland Group);
- water abstractions including PWS; and
- fisheries; and
- human health (construction workers, future site users and adjacent site users).

12.1.3 The assessment has considered how the Proposed Development would potentially affect the sensitive receptors listed above through the impacts of pollution of surface watercourses, groundwater, and water supplies; changes to resource availability; loss and compaction of soils; modification of groundwater levels and flows, and surface water drainage patterns, and short-term flood risk increase during the construction of the Proposed Development. The potential effects of exposure to potential contamination sources during construction have also been considered.

12.2 Baseline Conditions

12.2.1 There are no nationally or internationally important designated sites relevant to hydrology, hydrogeology, geology and soils within 1 km of the Site.

12.2.2 The majority of the Study Area is located within the River Ythan catchment. A small part of the Study Area is located within the River Deveron Catchment.

12.2.3 Within the Site, there are several minor watercourses adjacent to field boundaries, which eventually discharge into the Burn of Greens, or the Little Water / Black Burn. The minor watercourses are heavily modified / artificial drainage ditches, associated with the Site's existing use for pastoral and arable farming. There are also likely to be buried field drains which discharge into the ditches. The hydrological regime of the Proposed Development would be modified on account of these factors.

12.2.4 The bedrock formation underlying the Study Area is Macduff Formation – micaceous psammite, semipelite, and pelite. A review of superficial Geology indicates that the Study Area is dominated Devensian till (diamicton) with small areas of peat, however there are areas where no superficial deposits are mapped.

12.2.5 The main groundwater body underlying the Site has been classified by SEPA as having an overall status of 'Good' in 2020. The Study Area is underlain by Southern Highland Group, low productivity aquifer. Connectivity of the aquifer at the Site, with wider groundwater bodies is expected to be limited.

12.2.6 There are no records of contaminated land, however historical land uses in the south east of the Site may present potential sources of contamination, including a sheep wash, a timber / threshing mill, and a dam. There is a low risk of unexploded ordnance (UXO) on Site.

12.2.7 Aberdeenshire Council records indicated there are 17 potential Private Water Supplies (PWS) within 1 km of the Site. A site walkover conducted in September 2023 confirmed the presence of an additional PWS within the

Site, not recorded in the council's PWS data. Further assessment of PWS is provided in **Volume 4, Appendix 12.1 PWSRA.**

12.2.8 Based on the Scottish Water abstractions dataset, there are no Scottish Water abstractions within 1 km of the Site. Based on data provided by SEPA, there are five registered CAR activities within 1 km of the Site. The Site is located within a SEPA Drinking Water Protected Area for groundwater.

12.2.9 The Study Area contains areas of high risk of river flooding and surface water flooding, based on SEPA's indicative flood risk mapping

12.3 Assessment of Potential Effects

12.3.1 Following the implementation of good practice measures and the specific mitigation measures outlined, including those outlined within the GEMPs and CEMPs, no significant effects are predicted for the hydrology, hydrogeology, geology, and soils receptors, including human health, with the exception of three PWS that lie within the Site associated with property that the Applicant will purchase.

Cumulative Effects with Other Future Developments

12.3.2 The cumulative assessment concluded that cumulative effects for hydrology, geology, hydrogeology, soils and contaminated land are not considered to be significant. This is based on the assumption that other developments would also follow industry best practice and guidance and effective 'source' controls, and therefore have residual effects that are not significant. Furthermore, the differing construction programming and activities that would be anticipated to occur across various developments reduces the probability that water quality and flow issues would be coincident across the catchments.

13. NOISE AND VIBRATION

13.1.1 The potential for construction and operational noise impacts has been assessed for the Proposed Development, as well as for the provision of two 400/132 kV Super Grid Transformers (SGT) and associated plant in the future, which would be installed under permitted development rights. The methodology of the assessment has been agreed with Aberdeenshire Council as per their requirements of the Scoping Report, and has been informed by relevant policy, British Standards (BS) and guidance.

13.1.2 A baseline noise survey was undertaken to establish the background sound level at the nearest 'noise sensitive receptors' (NSRs).

13.1.3 An assessment has been undertaken, to determine the likely impact arising from the construction phase of the Proposed Development upon NSRs, near the construction phase activities. A noise model of the Proposed Development was created, to predict the operational impact on the nearest NSR.

13.2 Baseline Conditions

13.2.1 The nearest NSRs to the Site are isolated dwellings located around the Site. Noise measurements were taken at four locations, which are considered to be representative of the nearest sensitive receptors to the Site. The noise climate at the measurement positions was noted to be influenced by road traffic noise during the daytime at a low level, typical of a rural context.

13.2.2 A weather station was installed at one of the measurement locations. Noise measurements recorded during dry conditions with wind speeds lower than, or equal to 5 m/s were included for analysis.

13.2.3 In practice, there is no "single" background sound level as this is a fluctuating parameter. However, the background sound level used for the assessment is a representative average and therefore should be representative of the period being assessed.

13.2.4 Existing and future baseline noise levels are assumed to be the same.

13.3 Assessment of Potential Effects

13.3.1 The assessment concludes that nearby NSRs have the potential for Moderate Adverse and therefore Significant effects from construction noise and therefore appropriate mitigation must be implemented. Portable barriers would need to be used and strategically placed to mitigate a larger area, which will require further assessment and planning of activities by the Principal Contractor. Avoiding high noise construction work during the weekends and evenings in the vicinity of the potentially impacted NSRs for the platform works and civils work phases would also be required. With these mitigation measures, potential residual construction effects are deemed not significant.

13.3.2 The assessment concludes that nearby NSRs have the potential for Major Adverse and therefore Significant effects from operation noise. The Proposed Development is expected to exceed the target noise levels proposed by Aberdeenshire Council, but would achieve their recommendation of not exceeding 35 dBA. The operational assessment provides a worst-case scenario, using night-time background noise levels. With this in mind, further contextual assessment was carried out to calculate the significance of the operational noise at night from inside the NSRs, assuming a partially open window for ventilation. Taking context into account, the significance would be Minor Adverse and Not Significant. Despite this, further mitigation is required to be implemented, which includes the requirement for a Noise Mitigation Scheme; based on a robust acoustic design process during detailed design, developed in close liaison with Aberdeenshire Council's Environmental Health Officer. With these mitigation measures, potential residual construction effects are deemed not significant.

Cumulative Effects with Other Future Developments

13.3.3 A review of cumulative developments was conducted to identify any in-combination cumulative effects on NSRs. Most of the cumulative developments do not yet have construction or operational data available, and

therefore it is difficult to know if a cumulative effect may occur. For a number of the cumulative developments, it is possible that construction activities could occur concurrently with the Proposed Development and create in-combination effects. In these scenarios, good practice measures and best practicable means to reduce the potential for in-combination effects should be implemented. Further mitigation could be required and would need to be considered by the Principal Contractor’s Environmental Manager.

14. CUMULATIVE EFFECTS (EFFECT INTERACTIONS)

14.1.1 The assessment of Cumulative Effects (Effect Interactions) identified only one potential receptor (nearby residents to the Proposed Development) likely to see a measurable effect interaction from the Proposed Development. This being residential receptors in the vicinity of the Site. The assessment concluded no significant effects interactions on residential receptors in both the construction and operation phases.

15. SUMMARY

15.1.1 The Proposed Development is required to substantially strengthen the local transmission network and support new onshore and offshore connections, such as those created through the Scotwind offshore lease rounds. The Proposed Development will further help facilitate the export of future renewable generation from the North of Scotland to demand centres throughout the UK.

15.1.2 An EIA has been undertaken to assess the likely significant effects arising as result of the Proposed Development. The EIA assessments show that through the careful and iterative design of the Proposed Development, site-specific mitigation measures and the use of good practice methodologies during construction, the potential for adverse environmental effects has been reduced.