Burnside to Greens 400kV Connection

Environmental Appraisal

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Acronyms and Abbreviations

AC	Alternating Current
ACAS	Aberdeenshire Council Archaeology Service
ACIEEM	Associate Member of Chartered Institute of Ecology & Environmental Management
ALDP	Aberdeenshire Local Development Plan
AOD	Above Ordnance Datum
APR	Air Quality Progress Report
AQAP	Air Quality Action Plan
AQIA	Air Quality Impact Assessment
AQO	Air Quality Objective
AQS	Air Quality Strategy
ATC	Automatic Traffic Counter
AWDT	Average Weekday Daily Traffic
BER	Biodiversity Enhancement Report
BGS	British Geological Survey
BNG	Biodiversity Net Gain
BNL	Basic Noise Level
BS	British Standard
BSI	British Standard Institute
CAFÉ	Cleaner air for Europe
CAFS	Cleaner Air for Scotland
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology & Environmental Management
CJEU	European Court of Justice
CTMP	Construction Traffic Management Plan
DAQMP	Dust and Air Quality Management Plan
dB	Decibel
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMRB	Design Manual for Road and Bridges
EA	Environmental Appraisal
EC	European Commission
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EPS	European Protected Species
EPSML	European Protect Species Mitigation Licence
EPUK	Environmental Protection UK
GFA	Gross Floor Area
GPP	Guidance for Pollution Prevention
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HDG	Heavy Duty Vehicle
HDV	Heavy Goods Vehicles
HER	Historic Environment Record
HES	Historic Environment Scotland

HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
IEMA	Institute of Environmental Management and Assessment
kV	Kilovolt
LAQM	Local Air Quality Management
L_{A10}	This is the A-weighted sound level that is exceeded for noise for 10% of the sample period
L_{A90}	This is the A-weighted sound level that is exceeded for 90% of the sample period
$L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level over time period 'T'
LBAP	Local Biodiversity Action Plan
LCA	Land Capability for Agriculture
LDP	Local Development Plan
LDV	Light Duty Vehicle
L_{MAX}	Maximum A-weighted Sound Level
L_{MIN}	Minimum A-weighted Sound Level
LV	Limit Values
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
MSC	Matters Specified in Conditions
NAEI	National Atmospheric Emissions Inventory
NESBiP	North East Scotland Biodiversity Partnership
NESBReC	North East Scotland Biological Records Centre
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
NPF	National Planning Framework
NS	NatureScot
NVMP	Noise and Vibration Management Plan
O_3	Ozone
oCEMP	Outline Construction Environmental Management Plan
OnTI	Onshore Transmission Infrastructure
PAN	Planning Advice Note
PCM	Pollution Climate Mapping
PM	Particulate Matter
PPP	Planning Permission in Principle
pSPA	Proposed Special Protection Areas
PWS	Private Water Supply
RLB	Red Line Boundary
SAC	Special Area of Conservation
SAQD	Scottish Air Quality Database
SBL	Scottish Biodiversity List
SCI	Sites of Community Importance
SDP	Strategic Development Plan
SEPA	Scottish Environment Protection Agency

SMP	Soil Management Plan
SO_2	Sulphur Dioxide
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TA	Transport Assessment
TG	Technical Guidance
TS	Transport Statement
UKHab	UK Habitat Classification Professional Edition – Version 2.0
UKNAQS	UK National Air Quality Strategy
W&CA	Wildlife & Countryside Act 1981 (as amended)
WFD	Water Framework Directive
WHO	World Health Organisation
WRF	Weather Research and Forecasting
WSI	Written Scheme of Investigation
µg	Microns

1 Introduction

Caledonia Offshore Wind Farm Limited (hereafter referred to as the Applicant), is applying for planning permission in principle (PPP) for the development of up to four 400 kilovolt (kV) underground cable circuits, connecting Caledonia Offshore Wind Farm Burnside Onshore Substations site to the Scottish and Southern Energy Networks Transmission (SSEN-T) Greens Substation, together with associated works (the 'Proposed Development').

The Proposed Development will be located within the submitted PPP application red line boundary (RLB) as shown on Proposed Site Plan Appendix A on land between Maryhill and Greens, Turriff, AB53 6XT and AB53 5YQ, grid reference 382451, 846037, ('the Site'). The Site is centred at British National Grid (BNG) X382536 Y846178.

This Environmental Appraisal (EA) provides an assessment of the potential impacts the Proposed Development may have on a range of environmental topics as appropriate.

This EA should be read in conjunction with the following appendices:

- EA Appendix A: Proposed Site Plan;
- EA Appendix B: Air Quality;
- EA Appendix C: Terrestrial Ecology;
- EA Appendix D: Geology, Soils and Contaminated Land;
- EA Appendix E: Archaeology & Cultural Heritage;
- EA Appendix F: Noise and Vibration;
- EA Appendix G: Traffic and Transport; and
- EA Appendix H: Flood Risk and the Water Environment.

2 Background

In January 2022, as part of the ScotWind leasing round, Ocean Winds UK Limited was successfully awarded an Option Agreement granting exclusive rights to develop an Offshore Wind Farm (OWF) within the NE4 Plan Option, which is located within the outer Moray Firth, off the north-east coast of Scotland.

Ocean Winds has progressed the proposals for this OWF, which has been named the Caledonia OWF, via the limited company of Caledonia Offshore Wind Farm Limited. Caledonia OWF is seeking to deliver electricity to the National Electricity Transmission System (NETS) from 2030. Due to the volume of national grid reinforcement works required to connect offshore wind projects and commercial drivers, the Applicant is expecting the Caledonia OWF to be developed in phases. In 2024, the Applicant submitted applications for Section 36 Consents and Marine Licences to Marine Scotland for the offshore components of the project. An application for PPP for the Onshore Transmission Infrastructure (OnTI PPP) was submitted to Aberdeenshire Council (AC) and approved (ref. APP/2024/1812) in July 2025. The OnTI PPP includes a landfall point to the west of Whitehills, an onshore export cable route of approximately 37km and an onshore substation site, comprising two co-located onshore substations. The co-located onshore substations are to be located on land known as Burnside, situated immediately north of the existing SSEN-T New Deer substation.

The OnTI PPP states that the grid connection point to the NETS for the first phase of the Caledonia Development is expected to be the existing SSEN-T New Deer substation, with the second phase potentially connecting to the SSEN-T Greens substation. The requirement to connect to the existing SSEN-T New Deer substation and/or the SSEN-T Greens substation is subject to ongoing detailed network design (DND) being conducted by National Grid Electricity Energy System Operator (NESO) and SSEN-T, in consultation with the Applicant. Until the DND is finalised, there remains the possibility that both phases of the development may connect entirely into the Greens substation.

3 The Proposed Development

3.1 Site Description

The Site is located approximately 6km to the southeast of Turriff and 4km to the southwest of New Deer, on land between Maryhill and Greens, Turriff, AB53 6XT and AB53 5YQ, grid reference 382451, 846037.

The Site covers 157 ha and is surrounded by agricultural land primarily used for pasture and arable farming, with a predominantly rural character. There is an area of commercial forestry to the north-west of the Site. Individual farmsteads and isolated dwellings are a typical feature of the setting, a number of which lie in close proximity to the Site.

Key features include:

- **Watercourses:** The Burn of Greens and Little Water flow east of the Site, with a second tributary of the Burn of Greens along the northern boundary. A pond and drainage ditch connecting to the Burn of Greens lie centrally within the Site.
- **Infrastructure:** New Deer Substation adjoins the southern boundary. Within the Site, a road connects Burnside crossroads to the north. To the east of this road is Mains of Asleid, with arable land, hedgerows, an overhead line (OHL), and a single wind turbine to the north. South of the road, extending east toward Netherton of Greens, are the Neuk and Abbotshaugh farmsteads.
- **Vegetation:** Beech trees and hedges occur near the Site, with hawthorn hedges commonly forming field boundaries.
- **Surrounding Roads:** Large arable fields lie north of the crossroads near Maryhill. The road north from the crossroads is lined in places with trees and cottages. To the north of Burnside substation are pole-mounted OHLs, paddocks, and the road extending west from Burnside crossroads. A road from Borderside to Northburnmill and arable land lies south of the Greens substation site.

The extents and location of the Proposed Development are shown within Figure 3.1, indicated by the red line boundary (RLB).

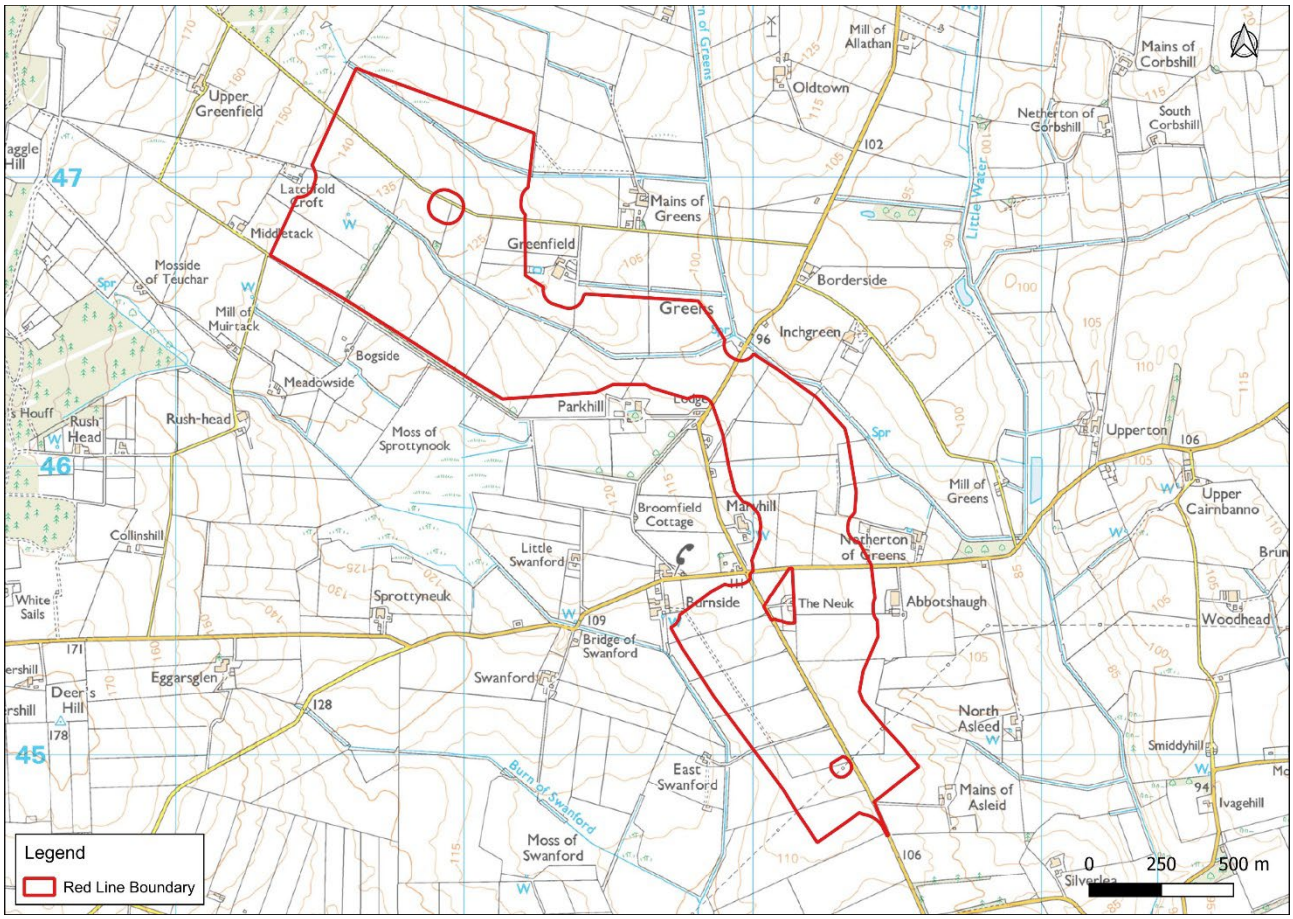

Figure 3.1: Proposed Development's Red Line Boundary (RLB)

3.2 Environmental Designations

There are no statutory or non-statutory designated sites within the Site.

Designated sites located in proximity to the Proposed Development have been listed below. A 20km radius is the applied search area for sites of International Importance (e.g. Special Areas of Conservation (SAC), Special Protection Area (SPA), Ramsar sites).

A radius of 2km has been applied for sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSI), protected or otherwise notable species and non-statutory designated sites of County Importance).

Ther are 2 no. statutory designated sites located within 20km of the Proposed Development. The closest statutory designated site is the Turclossie Moss SAC, approximately 11.6km from the Proposed Development. The Troup, Pennan and Lion's Heads SPA is located c. 17km north of the Proposed Development.

There are no non-statutory designated sites within 2km of the Proposed Development.

The closest non-statutory designated site is the Windy Hills SSSI, located c. 5km to the south-west.

3.3 Proposed Development Description

The Proposed Development will be located within the submitted PPP application RLB. The RLB presented is wider than the actual corridor to provide scope for the detailed design of the cable route. Further details on the specific route within the site will be provided at Matters Specified by Condition (MSC) stage.

The Proposed Development includes the following elements:

- A working cable corridor up to 100 metres wide, accommodating all temporary works areas required for installation;
- Up to four 400 kV cable circuits installed in trenches;
- Up to two temporary haul roads;
- Haul road access points;
- Up to 4 Joint bays for each cable circuit;
- Up to two Satellite construction compounds; and
- Temporary crossing infrastructure for haul road(s), road, watercourse and utilities

The parameters set out are presented to enable consideration and determination of PPP.

Further works to inform the final design will include a detailed review of potential crossing locations and arrangements in conjunction with cable designs to optimise civil and electrical design. Further to this, ground investigation works for the entire cable corridor, with trial pits at agreed distances will be undertaken to ensure that any below ground level soil conditions, like shallow rock, are identified.

Trenchless crossings are not anticipated. Instead, open cut trench crossings are likely to be used (over roads and watercourse tributaries).

The cable corridor is proposed to be a maximum width of 100m, within which the underground cables and construction infrastructure would be located.

The cable route crosses agricultural land and following underground installation of the cables and ground reinstatement, there will be no long-lasting impacts. Land will be reinstated to its previous use but the position of the cables will be marked using marker posts for the safety of land users.

The cables will be installed below ground level and will remain underground post-operation, within the RLB.

4 Supporting Environmental Context

4.1 Air Quality

4.1.1 Introduction

An Air Quality Impact Assessment was undertaken by RPS TetraTech in relation to the Proposed Development, and is detailed within **Appendix B**. The assessment had been carried out in accordance with best practice principles and in line with any local and national policies and legislation relevant to Air Quality. The methodology for assessing air quality in relation to the Proposed Development, primarily focuses on the impacts arising from construction activities, as operational activities have been screened out.

4.1.2 Baseline Environment

Aberdeenshire Council undertook non- automatic (passive) monitoring of NO_2 at 11 sites during 2024. The monitoring data collected continues to remain well below the national air quality objectives. The highest annual mean result was recorded as 17 µg/m^3, which is less than half the national air quality objective. Apart from the slight increase in the Peterhead area the level of NO_2 has reduced compared to the 2023 results. No AQMAs have been declared in the AC area. Additionally, the predicted background concentrations of key air pollutants Nitrogen Oxides (NO_x), NO_2, Particulate Matter (PM_{10}, and $PM_{2.5}$) across the Department for Environment, Food & Rural Affairs (DEFRA) locations from 2023 to 2028 indicate a predicted gradual overall decline, reflecting anticipated improvements in air quality.

The nearest residential sensitive receptor to the Proposed Development has been identified as Receptor ID 25, located approximately 11m from the RLB. The nearest non-residential sensitive receptor has been determined as Receptor ID 2 at approximately 48m from the RLB.

4.1.3 Assessment Summary

In accordance with Institute of Air Quality Management (IAQM) Assessment of dust from demolition and construction 2024 V2.2, the dust impact risk based on the magnitude of impacts and number of receptors within 20m of the RLB, is considered to be "medium". However, provided the mitigation measures detailed out within **Appendix B** are implemented, the residual construction dust effects will not be significant. A Dust and Air Quality Management Plan (DAQMP) will be produced post consent, prior to construction and included by the contractor within the Final Construction Environmental Management Plan (CEMP). The DAQMP will detail how construction dust will be managed throughout construction and air quality impacts avoided and minimised.

The traffic generation associated with the construction phase has been assessed in detail, considering the monthly, daily and hourly traffic flows during construction. The most onerous construction month (month 8) has been considered within the assessment to ensure the most robust analysis of the proposal. Based on the baseline traffic flows and the construction vehicles predicted during the most onerous construction month, the assessment has determined that the Proposed Development is unlikely to have a significant impact upon air quality of receptors located in proximity to the surrounding highway network.

4.2 Terrestrial Ecology

4.2.1 Introduction

An Ecological Appraisal was undertaken by Tetra Tech Limited (Tetra Tech) and is provided in **Appendix C.** The purpose of this Appraisal is to assess the statutory and non-statutory sites of nature conservation interest and any notable species within the site which is used to evaluate the potential receptors on site and identify any constraints to the sites development and make any recommendations necessary.

4.2.2 Baseline Environment

The Troup, Pennan and Lion's Heads Special Protection Area (SPA) is located approximately 17km north of the site. However, NatureScot have confirmed that there are not any anticipated likely impacts and therefore no Habitats Regulations Assessment (HRA) is required. Three areas of native woodland lie within 1km of the site the closest of which is approximately 300m east of site.

An extended Habitat Classification Survey was undertaken on the site on 19th August and 29th September 2025. The following habitats identified were neutral grassland, modified grassland, broadleaved woodland, mixed woodland, coniferous woodland, species-rich native hedgerow, native hedgerow, gorse scrub, cereal crops, non-cereal crops, developed land; sealed surface, standing water and rivers and streams.

A review of historic surveys and data purchased from the North East Scotland Biological Records Centre confirmed the presence of a number of protected and notable species within 2 km of the site. Key findings include the potential of badgers, red squirrels, pine martins and brown hare being active within 2km of the site. Bats (including pipistrelles) have been recorded to have roosts with the Site offering moderate foraging/commuting habitat. Birds of conservation concern (including barn owl and several priority passerines) have been recorded to utilise hedgerows, tree lines and grassland with water vole, otter and other mammals recorded locally but unlikely to be resident on site. Lastly, notable plants (such as large-flowered hemp nettle) and priority invertebrates were recorded, while amphibians and reptiles showed low suitability and few records.

4.2.3 Assessment Summary

The surveys completed to date indicate that several notable species are likely to be present in the area around the site. However as species, such as badgers, birds and bats, are mobile species and with setts, nests and roosting locations changing between Matters Specified by Condition (MSC) stages, additional surveys are required to identify and address any potential impacts. Nonetheless, the information currently available is sufficient to demonstrate presence and to support the principle of the development, subject to adherence with ALDP Policy E1.6 and NPF4 Policy 4f given that surveys have been carried out, presence has been recorded, and proposed next steps and avoidance/mitigation measures are set out to be integrated into the project design.

Further ecological surveys will be undertaken by the Applicant where appropriate and when detailed designs and a finalised cable route and understanding of likely interactions with receptors is known. These details would support the consideration of the detailed design at MSC stage. The mitigation will be delivered through mechanisms such as the production and implementation of a CEMP which include steps such as the appointment of an ECoW to oversee and monitor the proposed mitigation measures.

The habitat enhancement measures identified following the BNG feasibility assessment will not only mitigate potential impacts, but ensure that there is a significant biodiversity

enhancement across the Site. Where possible, habitat enhancement measures will be linked to the ecological receptors present on site. The proposed development, with appropriate ecological considerations, can proceed in compliance with current local and national biodiversity planning policies.

4.3 Geology, Soils and Contaminated Land

4.3.1 Introduction

This assessment considers constraints relating to geology, soils and contaminated land through the identification of baseline conditions and subsequent identification of potential impacts and subsequent mitigation measures

4.3.2 Baseline Environment

The majority of the site is underlain by glacial Till. Some areas lack mapped superficial deposits, and localised Alluvium occurs across small water courses. The wider surrounds are peppered with pockets of peat but there are no mapped peat deposits within the RLB. The site is underlain by the Macduff Formation.

Historic borehole records show no on-site boreholes, with three located 700–900 m east indicating shallow topsoil over thin peat in places and generally shallow bedrock (sandstone or schist) beneath thin granular deposits. Agricultural land quality ranges from prime (Class 3.1) to moderate (Classes 3.2 and 4.1), and there are no mapped peat, designated geological sites or safeguarded mineral resources within the Site.

Hydrogeologically, the bedrock is a low-productivity Southern Highland Group aquifer within a groundwater body assessed as "Poor," and no superficial aquifer is present. Hydrologically, the Burn of Greens and two minor channels cross the north of the Site; these drains are undesignated while downstream reaches have moderate ecological potential. No groundwater-dependent terrestrial ecosystems were identified in the UKHab survey. No registered private water supplies lie within the RLB (subject to Private Water Supply (PWS) Risk Assessment). No artificial ground is mapped and historical mapping indicates longstanding agricultural use; contaminated land enquiries are ongoing but no concerns are anticipated at this stage.

4.3.3 Assessment Summary

A desk-based review of the baseline environment has indicated that the primary constraint for the Proposed Development relates to the potential presence of PWS abstractions on site. Up-to-date data relating to the location of PWS and their abstraction points is being collected by the Applicant, and this will enable further assessment of risks (by way of a 3 stage process as described in **Appendix D**) arising from the Proposed Development.

The presence of limited Class 3.1 soils is not considered to represent a constraint to development providing the site will be restored and returned to its original status (except for only visible permanent works: ground-level access to link box and communications box pit) following laying of the cable.

A Soil Management Plan, produced post consent and prior to construction, can inform agricultural soil restoration, where topsoil and sub-soil will be treated and stored appropriately. The Soil Management Plan would minimise risk of erosion and/or soil degradation which can indirectly affect soil quality.

4.4 Archaeology and Cultural Heritage

4.4.1 Introduction

This section assesses the potential for archaeology and cultural heritage receptors, both within the Site and in the wider area, to experience direct and/or indirect impacts as a result of the Proposed Development. The historic environment desk assessment had been undertaken by RPS TetraTech. The assessment has been undertaken in line with relevant heritage legislation, as well as local and national policies.

4.4.2 Baseline Environment

There are no designated heritage assets in the site or study area and there is considered to be no potential to affect the setting of any assets. Scottish Government Lidar data is not available for the Site. The desk-based work was augmented and verified through a walk-over survey.

Three non-designated heritage sites are confirmed by Aberdeenshire HER within the site including Middletack (NJ84NW0010), Hillhead of Aisled (NJ84NW0019) and Greenfield (NJ84NW0031).

No archaeological fieldwork has been undertaken within the Site previously. The Historic Environment Record (HER) contains no on-site Prehistoric or Early Medieval entries, though nearby remains indicate low-intensity prehistoric activity in the wider area (including cairns and stray flints).

Post-Medieval mapping and the current survey identify several former crofts and minor workings (most now demolished or reduced to footings), suggesting enclosure and agricultural improvement in the late 18th century; overall the site has very low potential for unrecorded Post-Medieval features and negligible potential for previously unknown Modern remains.

4.4.3 Assessment Summary

This assessment has been carried out for the Proposed Development in order to clarify heritage significance and archaeological potential impacts.

There are no designated heritage assets within the Site or study area and, the Proposed Development will have no surface expression during its operational phase. This assessment concluded that there is no potential for impacts upon designated heritage assets.

The assessment has identified five Post-Medieval crofts within the Site that may be affected by the Proposed Development. These are considered to be of local importance. In addition, it is considered that there is potential for hitherto unrecorded archaeology to be present within the Site. This potential is high in respect of the Prehistoric period, low in respect of the Early Medieval to Post Medieval periods and negligible in respect of the Modern period.

For the purposes of this assessment, it has been assumed that any heritage assets within the Site will be removed during the construction phase of the Proposed Development. However, the detailed design will, as far as reasonably practicable, avoid known heritage assets thereby preserving them in situ.

4.5 Noise and Vibration

4.5.1 Introduction

RPS TetraTech were commissioned to carry out a noise and vibration impact assessment in relation to the construction phase of the Proposed Development. This assessment includes an evaluation of the temporary impacts from construction noise and vibration. The operational phase of the Proposed Development will have no associated sources of noise or vibration and, as such operational noise and vibration impacts are not assessed.

4.5.2 Baseline Environment

The study area for the construction noise assessment has been defined with reference to BS5228: 2009+A1:2014, and includes noise sensitive receptors located within 300m from the RLB and 50m from roads expected to experience a change in Basic Noise Level (BNL) of >1 dB.

A total of 38 residential receptors were identified within 300m of the RLB. In addition, several non-residential receptors were identified within the study area, however these comprise commercial premises and are not considered to be sensitive to noise.

The study area is within a rural location and receptors within the study area have been assumed to experience an existing ambient noise level below the most stringent threshold within BS4142 ABC method. As such, category A construction noise thresholds have been applied at all noise-sensitive receptors.

4.5.3 Assessment Summary

Construction noise predictions assume that all construction equipment is operating at the centreline of the Proposed Development, which is considered to be a realistic assumption. The worst case scenario assessed assumes that all construction plant and equipment will operate simultaneously along the centreline, however this is unlikely to be the case.

Without applying mitigation, the predicted worst-case construction and traffic noise could cause temporary, local increases in ambient noise at nearby sensitive receptors for certain activities, with impacts dependent on final corridor alignment, compound/ access locations, plant choice, working methods and programme. By applying mitigation, the potential for these impacts would be temporary and not significant.

A Noise and Vibration Management Plan (NVMP) will be produced post-consent and prior to construction and included within the final CEMP. The NVMP will detail the construction noise measures to be adhered to and consulted on with relevant stakeholders and approved as a separate standalone document.

Construction vibration is unlikely to cause significant impacts; one receptor may experience elevated but tolerable vibration levels. Construction traffic could produce temporary increases in vibration levels where routes, access points or overlapping programmes concentrate HGV/ plant movements past the same receptors.

Once the detail design is finalised, noise impacts will be carefully managed by the contractor, with recommended mitigation and good practice (including BS 5228 compliance and strict site management) detailed within the final CEMP and the NVMP. With implementation of the mitigation and good practice measures, including compliance with BS 5228 and robust site management controls, residual impacts are expected to be temporary and localised. A summary of cumulative impact assessment

for noise and vibration receptors is referenced within Section 6 and detailed in **Appendix F**.

4.6 Traffic and Transport

4.6.1 Introduction

This section provides a baseline characterisation for the transport assessment (TA) and transport receptors. A summary of TA (detailed in **Appendix G**) provides discussion on predicted construction impact on the road network from the Proposed Development.

4.6.2 Baseline Environment

A series of Automatic Traffic Counter (ATC) surveys were carried out in a number of locations in October 2025, findings of which provided the current average weekday total volume of traffic and total volume of HGVs. These locations were selected to ensure that the potential approach routes, which are likely to carry the main volume of traffic, were assessed due to their level of importance in the assessment process. The current traffic volumes on the roads surrounding the Site are less than 40 total vehicles in any hourly period throughout the day, representing a low volume of traffic.

There have only been two serious collisions recorded in the last 5no. years along the B9170, to the north and northeast of the Site. Given the rural location of the Proposed Development there is no existing pedestrian, cycling or public transport infrastructure in close proximity of the Site. The roads surrounding the site are minor and unclassified rural roads with low volumes of traffic.

4.6.3 Assessment Summary

The TA sets out the predicted impact of the Proposed Development upon the surrounding highway network during construction. Local baseline traffic flows were established using ATCs, and these were projected to 2030 using TEMPro to create a future baseline scenario.

Construction-phase traffic generation associated was analysed in detail, considering monthly, daily and hourly traffic flows. The assessment considered the most onerous construction month to ensure robust analysis.

During this peak month (month 8), the Proposed Development is predicted to generate an average of 5no. HGV movements per hour (assuming a 12no. hour working day). The assessment assumes 30no. staff arrive by car to the site in the AM peak hour and 30no. staff departing by car the site in the PM peak hour. For the Month 8, daily averages for that month are approximately 58 HGVs and 120 cars. Based on the future baseline traffic flows and the construction vehicles predicted during the peak month, the impact on the surrounding highway network is considered unlikely to be significant.

Once operational, the Proposed Development will be unmanned and will generate only limited vehicle movements for routine maintenance and inspections. Operational traffic is expected to have a non-significant effect on the surrounding highway network, typically amounting to one trip per year with occasional HGV movements for heavier maintenance or repairs.

A summary of cumulative impact assessment for traffic and transport receptors is referenced within Section 6, and detailed in **Appendix G**.

4.7 Flood Risk and the Water Environment

4.7.1 Introduction

This assessment evaluates potential impacts of flooding on the Proposed Development and the potential impacts of the proposed development on flood risk elsewhere. This section also measures the potential impact of the Proposed Development on water quality within the receiving environment.

4.7.2 Baseline Environment

4.7.2.1 Flood Risk

The Proposed Development has been specifically designed to avoid the mapped floodplains from both the Burn of Greens and Burn of Swanford. Two small tributaries of the Burn of Greens are located within the north-western part of the site and in which the final cable design will need to cross. However, these minor watercourses are not represented on SEPA's river flood maps. The Site does not contain any areas of river flood risk as defined by NPF4 and ALDP. Groundwater flood risk is considered negligible: the site lies on low-productivity Southern Highland Group bedrock with superficial till and nearby borehole data indicate groundwater would not rise above ground in significant rainfall events. The site is not adjacent to functional floodplain, flood defences or reservoirs, so flooding from infrastructure failure is not expected.

4.7.2.2 Water Quality

The proposed development lies in the Little Water sub-catchment of the Ythan, with two minor tributaries crossing the site. The Burns of Greens flows into the designated Little Water/Black Burn (Water Environment Directive (WFD) ID 23237), which currently has a Moderate Ecological Potential; its principal pressures are physical modification of beds and banks and diffuse rural pollution. The surrounding catchment is predominantly intensive lowland agriculture and the site overlies the Ellon groundwater body, assessed as Poor overall status, with nitrate pollution from diffuse agricultural sources identified as the main pressure. The Little Water/Black Burn is designated as a salmonid river with confirmed salmon downstream of the Site. The Ellon groundwater body is within a drinking-water protection area and a Nitrate Vulnerable Zone. Two water-dependent SPAs lie about 25 km downstream, and significant impacts on their water-dependent features are considered unlikely given the distance and expected dilution.

4.7.3 Assessment Summary

The detailed engineering design will be developed at the MSC stage. Some areas of potential surface-water and small watercourse flooding have been identified in which temporary material storage will be kept outside these areas where possible (no soil storage within 10 m of watercourses) and any necessary temporary deposition will be carefully timed and managed. Two small watercourses will be crossed using controlled open-cut trenching with upstream dams and over-pumping to provide dry working areas, with works scheduled for dry conditions and monitored by an onsite Ecological Clerk of Works (ECOW). Post consent, contractors are advised to use SEPA Floodline and the Scottish Flood Forecast. After reinstatement only concrete marker posts will remain above ground, so there will be no operational flood risk. Without mitigation construction posed a potential Moderate impact on the water environment, but a mitigation strategy based on best practice reduces this to Negligible to Minor during construction and Minor in operation. Any proposed crossings will follow SEPA guidance and the Proposed Development is considered compliant with relevant policy and regulation.

4.8 Environmental Management

In addition to the Environmental Appraisal, as part of the planning application the following outline documents have been submitted:

- Outline Construction Environmental Management Plan (oCEMP);
- Outline Biodiversity Enhancement Report (oBER); and
- Outline Construction Traffic Management Plan (oCTMP).

Post consent, the Applicant will develop these outline documents into detailed documents through engagement with Aberdeenshire Council and SEPA as appropriate.

These final versions of the above documents shall be developed in accordance with good practice guidance. It shall describe how the Applicant will ensure suitable management of the following environmental issues during construction of the Proposed Development:

- Waste and material management;
- Water quality;
- Dust and air quality;
- Noise and vibration;
- Surface water drainage and groundwater;
- Ecology (including protection of habitats and species);
- Construction traffic;
- Pollution incidence response (for both land and water); and
- Site operations (including maintenance of the construction compounds, working hours and safety of the public).

5 Summary of Mitigation and Next Steps

This section contains a summary of the mitigation measures proposed to address any potential impacts identified (Table 5.1). Individual technical assessments provided within the appendices to this EA should be referred to for full details of the potential impacts, mitigation and enhancement measures.

Table 5.1 Summary of Mitigation

Topic	Impact	Mitigation Summary
Air Quality	Construction Dust	A DAQMP will be produced post consent, prior to construction and included by the Applicant within the detailed CEMP. The DAQMP will detail how construction dust will be managed throughout construction and air quality impacts avoided and minimised. Mitigations in relation to the Proposed Development will be adhered too where appropriate in accordance with IAQM dust guidance as detailed out in Section 6 of Appendix B.
Terrestrial Ecology	General Mitigations	The key general mitigations across the project (as provided by the client) are as follows: • Tool-box talks will be prepared and delivered by the ECoW as necessary to advise all visitors and workers on site of the presence of ecological features and the mitigation measures required. This will include information on recognizing certain field signs such as badger setts, red squirrel dreys etc. to ensure all contractors can identify signs and notify an ECoW. • Construction activities will be limited to clearly defined working areas and vegetation clearance will be kept to a minimum. Where important habitat loss is unavoidable, habitat removal will be timed and phased to minimise potential impacts, and compensatory habitat created, or existing habitat enhanced in advance of the works. • Habitat connectivity will be retained wherever possible by maintaining links within and to green corridors such as tree lines, scrub and watercourses. Where impacts on connectivity are unavoidable, it may be artificially supplemented (e.g. by the creation of temporary brash hedges).
	Protected Species Licensing	Where protected species may potentially be impacted, further surveys would be undertaken to fully inform the proposals, mitigation, and, if necessary, a European Protected Species Licence (EPSL).
	Habitats	A Biodiversity Net Gain (BNG) feasibility assessment will be required, following the production of detailed layout and landscaping plans, to determine whether the development can provide a net gain in line with Aberdeenshire Council's Local Development Plan 2023

Topic	Impact	Mitigation Summary
		and NPF4 policy 3. A Tree Survey is recommended should the proposed development risk encroaching on root protection zones. Detailed mitigation and compensation for habitat loss to be informed by the BNG feasibility assessment. Standard measures to reduce noise, dust, etc. will be detailed within the final CEMP. Works would be carried out in accordance with permitting requirements, including the Environmental Authorisations (Scotland) Amendment Regulations 2025. NetRegs Guidance for Pollution Prevention (GPP) shall be included within the final CEMP to avoid damage or degradation of adjacent habitats.
	Badger	At the MSC stage, a targeted badger survey is recommended to survey for additional setts, confirm positions and use of setts identified during this application, and to guide appropriate avoidance and mitigation for any potential impacts. Precautionary working measures to avoid accidental harm to badgers and other mammals during the construction phase will be included within the final CEMP.
	Red squirrel, Otter, Water Vole	Pre-works checks. Precautionary working measures will be included within the final CEMP to avoid accidental harm to mammals during the construction phase.
	Bats	For the purposes of informing this Environmental Appraisal it was considered that the level of survey work was proportionate to the environmental risk associated with the development and its location as per clause 4.1.2 of BS42020. Buildings and trees with bat roost potential are to be retained. Should the proposals have the potential to impact buildings or trees offering PRFs for bats via disturbance (such as night-working or vibrations), additional survey will be required to confirm presence or likely absence to fully inform licensing and mitigation. The final CEMP will include mitigation to avoid disturbance of commuting and foraging bats i.e. avoiding unnecessary lighting at night.
	Birds	Existing and publicly available data has been used to inform measures related directly to breeding birds. Breeding bird survey work will be undertaken in advance of submission of documents associated with the MSC. These documents shall detail additional mitigation to

Topic	Impact	Mitigation Summary
		be adopted to avoid impacts on breeding birds, if required beyond that already adopted in the final CEMP. It is expected that breeding bird survey work will continue through to the MSC stage. All vegetation clearance and groundworks should be undertaken outside of the peak nesting bird season (March to September, inclusive). If this is not possible, nesting bird checks by a suitably experienced ecologist will be required no more than 48 hours prior to clearance works. Tree lines, hedgerows, and scrub shown as to be retained within the final design should be protected in accordance with industry standards in order to maintain a variety of suitable nesting habitat in the near landscape.
	Invasive non-native species	Under the Wildlife and Countryside Act 1981, as amended by the Invasive Non-native Species (EU Exit) (Scotland) (Amendment etc.) Regulations 2020, it is illegal to plant, or otherwise cause to grow, any plant in the wild out with its native range. To avoid an offense resulting from the spread of these species, it is recommended that the land managers responsible for these areas are contacted to promote the eradication of these plants prior to the commencement of works.
Geology, Soils and Contaminated Land	Private Water Supplies	PWS mitigation may be required following completion of the full 3 stage PWS assessment.
	Soil Management	A Soil Management Plan may be required to inform agricultural soil restoration where topsoil and sub-soil will be treated and stored appropriately to minimise risk of erosion and/or soil degradation indirectly affecting soil quality.
Archaeology and Cultural Heritage	Secondary Mitigation	The detailed design will avoid impacts upon heritage assets as far as reasonably practicable. Where this is not possible the physical loss of heritage assets will be offset through a programme of archaeological works. This will allow for the identification and appropriate excavation and recording of archaeological remains within the construction footprint of the Proposed Development. The scope of the programme of archaeological works will be set out in a Written Scheme of Investigation (WSI) agreed with Aberdeenshire Council Archaeology Service and secured through a condition attached to consent, should consent be granted. The WSI will include details of how any updates, if

Topic	Impact	Mitigation Summary
		required, to the WSI will be provided throughout the implementation of the programme of archaeological works. The programme of works would offset the physical loss of the archaeological remains affected and minimise the loss of archaeological data.
Noise and Vibration	Construction Noise	Examples of mitigation for noise and vibration impacts is provided within the oCEMP. A Noise and Vibration Management Plan (NVMP) will be produced post-consent, prior to construction and included within the final CEMP. The NVMP will detail the construction noise measures to be adhered to and consulted on with relevant stakeholders and approved as a separate standalone document. The key mitigation for noise receptors would be the consideration of noise sensitive receptors and careful design of the final cable route and associated construction infrastructure i.e. haul road position within the cable corridor and location of plant. Additionally, a range of secondary measures will be taken to ensure that noise and vibration impacts are managed appropriately. Examples of this includes mechanical plant and equipment checks, use of sound reduced models, implementation of noise barriers and engagement with impacted residents.
	Construction Traffic Noise	Examples of mitigation for noise and vibration impact in relation to traffic and transport will be detailed in the final Construction Traffic Management Plan (CTMP). The NVMP will take cognisance of and align with the CTMP as it evolves.

Topic	Impact	Mitigation Summary
Traffic and Transportation	Construction Traffic	Examples of mitigation for traffic and transport impacts is provided within the oCTMP. A 'considerate contractor' approach will be adopted to minimise potential impacts on traffic and transport receptors, supported by clear communication and coordination across contractors, sub-contractors, and suppliers. Measures will include advance signage, driver briefings, and continuous engagement with stakeholders to maintain safety and reduce disruption. Construction vehicle routing will be agreed with Aberdeenshire Council and the routes strictly adhered to. These, and other relevant mitigation, will be detailed in the final CTMP.
Flood Risk and the Water Environment	Construction	Mitigation for the management of sediment, excavation, concrete works, and chemicals, oils and fuels in line with guidance and good practice measures.
	Changes to Bank Morphology and Hydrological Flow Regimes	A Reinstatement Management Plan will be devised to advise best practice techniques for re-establishing ground conditions conducive to natural generation, to be employed post-construction to ensure the riparian zone and banks of watercourses are stabilised as soon as is practicable. This plan will include measures such as: • Commence stream bank reinstatement as soon as in-stream construction work is completed, where practicable. • Where practical, stabilise cleared banks to facilitate reinstatement • When reinstating watercourses, replace stockpiled stream bed rocks, pebbles and/or coarse gravel and reinstate watercourse banks to stabilize and facilitate bio-restoration. • Where appropriate, undertake active works to re-establish vegetation in areas that may be slow or difficult to regenerate naturally, difficult to stabilise or prone to erosion.
	Private Water Supply	All drainage from the Site will be appropriately managed and discharged away from all PWS catchments, and drainage and pollution prevention measures will be managed through a CEMP which will ensure protection of PWS catchments.

6 Cumulative Impact Assessment

A review of the surrounding area, including recent planning history within 5 km of the Proposed Development was undertaken. Projects approved or in planning considered are detailed within the Planning Statement.

Cumulative impacts result from the combined incremental changes of the Proposed Development and other reasonably foreseeable activities or projects in the local area. These include:

- Approved but uncompleted projects; and
- Projects that are reasonably foreseeable and provide sufficient information to assess potential cumulative impacts with the Proposed Development. While not all have submitted planning applications, they are expected to commence construction before, or around the same time as, the Proposed Development.

In accordance with Regulation 8 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, a developer may request the planning authority to adopt a screening opinion of a proposed development. On 28 February, the Applicant requested a screening opinion from Aberdeenshire Planning Service at Aberdeenshire Council. On the 20 March 2025, Aberdeenshire Council issued their screening opinion and stated that an Environmental Statement is not required.

The screening process examined both, the characteristics of the Proposed Development and the characteristics of its potential impacts, with cumulative impacts considered in each case. No significant impacts were identified for any of these factors.

Based on this decision, it remains only necessary to consider cumulative impacts in the context of NPF4 and a proportionate approach appropriate to the nature and stage of the PPP application has been applied. For the purposes of the Proposed Development, the following four potential cumulative developments are considered within this EA (Table 6.1), within **Appendix F: Noise and Vibration** and **Appendix G: Traffic and Transport**. These four developments have been selected as they have the potential to both spatially and temporally coincide with the construction phase of the Proposed Development, and therefore result in potential cumulative impacts, if unmitigated.

Table 6.1 Other Developments Considered for Cumulative Impact Assessment

Planning Reference	Site Address	Development Type	Decision Status	Approximate Distance from the RLB
APP/2024/1927	Land At Mains Of Greens Cuminestown Aberdeenshire AB53 5YQ	National for Erection of 400kV AC Substation and Associated Infrastructure	Approved 8 October 2025	0.0km, partially overlaps with the RLB
APP/2024/1812	Boyndie Bay To New Deer	Onshore Transmission Infrastructure for Caledonia Offshore Wind Farm including Formation of Onshore Landfall Point, Laying of Underground Cables, Erection of 2 Co-Located Substations, and Associated Works to connect to the Transmission Grid	Approved 04 July 2025	0.0km, partially overlaps with the RLB
ECU00005224	Abbotshaugh BESS	EIA Screening - Construction and operation of a proposed BESS (over 50MW) and associated substation with associated infrastructure, access and ancillary works.	Under Consideration EIA Screening	0.0km, partially overlaps with the RLB
ECU00006067	New Deer 2 BESS, Land Near Wagglehill North And South, Cuminstown	Construction and operation of a Battery Energy Storage System (BESS) along with associated infrastructure and ancillary works, earthworks, access, drainage, landscape and biodiversity enhancement.	Consultation	0.0km, partially overlaps with the RLB

Assessments within this EA currently do not consider the application of mitigation and conclusions and are drawn in the absence of it. However, the mitigation summary set out in Section 5 demonstrates the likely measures to be applied and how the impacts can be addressed.

Additionally, the Applicant would look to participate in a forum with other developments in the locality of the Proposed Development to share detailed information on topics with potential for cumulative interest.

However, with appropriate mitigation measures in place, the predicted cumulative impacts associated with the construction phase of the Proposed Development can be deemed temporary, short-term and not significant. Further detail on the assessment of cumulative impacts is provided within **Appendix F: Noise and Vibration** and **Appendix G: Traffic and Transport**.

Further detail and additional specific rationalised mitigation measures will be presented at MSC stage.

7 Appendix A – Proposed Site Plan