



**THISTLE WIND
PARTNERS**

Bowdun Offshore Wind Farm Onshore Scoping Report

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Glossary

Defined Term	Definition
Additional mitigation	Also referred to as secondary mitigation which is defined by IEMA as: <i>Actions that will require further activity in order to achieve the anticipated outcome. These may be imposed as part of the planning consent, or through inclusion in the EIA Report (sic).</i>
Air Quality Management Areas	An area declared by a local authority where its review and assessment of air quality shows that an air quality objective is likely to be exceeded.
Bowdun Offshore Wind Farm (Bowdun OWF) (or the Project)	An overarching term for the Project that includes the Generation Assets and infrastructure of the Offshore Wind Farm (OWF), and both Offshore and Onshore Transmission Assets.
Bowdun Offshore Wind Farm Limited	A special-purpose vehicle (legal entity) for the purpose of developing the Project.
Cable Corridor	The agreed onshore Cable Corridor within which the onshore export cables will be sited and consent will be sought
Contracts for Difference (CfD)	The UK Government's main mechanism for supporting low-carbon electricity generation.
Converter station	A converter station converts electricity between Alternating Current (AC) and Direct Current (DC). AC is used in the transmission system, while DC is used for sending electricity long distances along the subsea cables.
Crown Estate Scotland (CES)	Division of the Scottish Government responsible for the management of land and property in Scotland owned by the monarch.
Cumulative effects	The effects of the Proposed Development assessed together with effects from one or more different projects on the same receptor/resource.
Effect	Term used to express the consequence of an impact, i.e., the result of change or changes on specific environmental resources or receptors. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor or resource in accordance with defined significance criteria.

Defined Term	Definition
Embedded mitigation	Measures that are adopted as part of the Proposed Development and therefore assessed within the EIA. The proposed approach for the EIA for the Proposed Development is that embedded mitigation includes both primary mitigation and tertiary mitigation. These are defined by IEMA as follows: <i>Primary: Modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project, and do not require additional action to be taken.</i> <i>Tertiary: Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects.</i>
Environmental Impact Assessment (EIA)	Assessment of the potential likely significant effects of a proposed development on the physical, biological, and human environment during construction, operation and maintenance and decommissioning.
European Economic Area	An area which encompasses European Union (EU) countries and also Iceland, Liechtenstein and Norway.
Habitats Regulation Appraisal (HRA)	An assessment carried out under the Habitats Regulations to determine if a plan or project proposal could adversely affect the integrity of a designated European site.
Habitats Regulations	A term that refers to the collective legislation that translates the Habitats Directive (Council Directive 92/43/EEC) into specific legal obligations in Scotland, namely: the Conservation (Natural Habitats, &c.) Regulations 1994; the Conservation of Habitats and Species Regulations 2017; (in each case as amended).
Impact	A change caused by an action that occurs during a project's lifetime.
Inshore	Waters within the 12 nautical miles (nm) territorial sea limit.
Inter-Array Cables	Cables which link the Wind Turbines to each other and with the Offshore Substation Platforms (OSPs)

Defined Term	Definition
Inter-related effects	The potential effects of multiple impacts from the construction, operation and maintenance and decommissioning of the Proposed Development, affecting one receptor.
Intertidal area	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS).
Landfall	The area in which the Offshore Export Cables make Landfall and is also the transitional area between the Offshore Transmission Assets and the Onshore Transmission Assets. Located in the intertidal area (see definition above) at Bay of Benholm.
Local Authority	A Local Authority is a body empowered by law to exercise various statutory functions for a particular area of the United Kingdom. Functions will cover planning, roads/highways, environmental health, flood protection, environment/ecology, cultural heritage and waste. The relevant Local Authority for this Project and the associated onshore elements is Aberdeenshire Council. In the context of the Proposed Development, they will also be the relevant planning authority.
Marine Directorate	The Marine Directorate of the Scottish Government, formerly known as Marine Scotland. The planning and licensing authority for Scotland's seas and custodian of Scotland's National Marine Plan (NMP). The Marine Directorate - Licensing and Operations Team (MD-LOT) are specifically responsible for managing Section 36 Consent and Marine Licence Applications seaward of MHWS.
Maximum Design Scenario	The scenario within the design envelope likely to result in the greatest impact on a particular topic receptor, and therefore the one that should be assessed for that topic receptor.
Mean High Water Springs (MHWS)	The average tidal height throughout a year of two successive high waters during those periods of 24 hours when the range of the tide is greatest.
Mean Low Water Springs (MLWS)	The average tidal height throughout a year of two successive low waters during those periods of 24 hours when the range of the tide is greatest.

Defined Term	Definition
Mitigation	Measures to avoid, prevent, reduce or control effects on the environment. See also definitions for Embedded Mitigation and Additional Mitigation.
National Development	National developments are significant developments of national importance that will help to deliver the spatial strategy as set out by the Scottish Government as defined in National Planning Framework 4 (NPF4). Bowdun OWF is a National Development.
National Grid	The national electricity transmission network.
Non-statutory consultee/stakeholder	Organisations that the Local Authority/regulators (on and offshore) may choose to engage with (if, for example, there are planning policy reasons to do so) and who are not designated in law but are likely to have an interest in a project.
Offshore Export Cables	Subsea cables used to transmit electricity generated offshore by the Wind Turbines from the OSPs to shore. The Transition Joint Bay (TJB) is the location where the Offshore Export Cable terminates, and the onshore cabling begins.
Offshore Generation Assets	The infrastructure required for the Proposed Development required to generate electricity comprising of the Wind Turbines, Wind Turbine foundations and associated infrastructure e.g., IACs.
Offshore Scoping Report	The report that presents the findings that relate to the Offshore Generation Assets and Offshore Transmission Assets for the purpose of obtaining a Scoping Opinion. The report defines what is intended to be assessed and reported as part of the EIA.
Offshore Transmission Assets	The Offshore Transmission Assets required for the Proposed Development comprising of the OSPs, Offshore Export Cables and associated infrastructure up to MHWS.
Onshore	Area landward of Mean Low Water Springs.
Onshore Environmental Impact Assessment (EIA) Report (hereafter, 'Onshore EIAR')	Document prepared to report the findings of the EIA for the Proposed Development and produced in accordance with the EIA Regulations. An Onshore EIAR will be submitted to support the Onshore Planning Application for the Proposed Development to the relevant Local Authority.

Defined Term	Definition
Onshore EIA Regulations	The term used to refer to the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended).
Onshore Export Cables	Onshore cables that transfer electricity from Landfall to the Substation.
Onshore Infrastructure	All of the Proposed Development components landward of the MLWS including the Onshore Export Cables and the onshore Substation.
Onshore Scoping Report	The Report that presents the findings of the EIA scoping process undertaken for the Proposed Development with the purpose of obtaining a Scoping Opinion from the Local Planning Authority. The Report defines what is intended to be assessed and reported as part of the EIA.
Onshore Transmission Assets	The transmission infrastructure associated with the Project above MLWS which will be covered by the Onshore Scoping Report and subsequent Onshore EIA Report.
Operations and Maintenance	Includes routing inspections, repairs and replacement of infrastructure and equipment associated with the Proposed Development.
Option Lease Agreement	An agreement between Crown Estate Scotland and the developer, permitting the future development of offshore wind within an agreed area (for the Bowdun OWF this is E3), subject to all necessary consents (on and offshore) being secured.
Plan Option Area	A location identified in the Sectoral Marine Plan (SMP) as a preferred area for commercial scale offshore wind development.
Planning application	An application for planning permission under the Town and Country Planning (Scotland) Act 1997 as amended will be required for any onshore development related to the projects. This is required for any development landward of the MLWS.
Planning Permission	Planning permission under the Town and Country Planning (Scotland) Act 1997 as amended which will be required for the Proposed Development.

Defined Term	Definition
Planning Permission in Principle (PPP)	Planning permission in principle is a type of application that allows a proposal to be assessed without having to give the details of the final layout, design or finish of any buildings. It is granted subject to a condition that certain matters have to be approved by the planning authority before the work begins. Planning permission in principle does not actually allow for development to commence, but rather that the principle of that development is accepted by the planning authority.
Planning Statement	A statement setting out and detailing the key approach and considerations relevant to the planning application.
Planning Application Boundary	The red line boundary representing the extent of the planning permission in principle application.
Pre-Application Consultation (PAC)	Statutory engagement with communities and stakeholders prior to submission of the consent applications both onshore and offshore.
Project (the)	An overarching term for the Bowdun Offshore Wind Farm (Bowdun OWF) comprising the offshore and onshore infrastructure required to generate and transmit electricity from the Array Area to the onshore Grid Connection Point (GCP). The Project includes both the Offshore Generation Assets, the Offshore Transmission Assets and the Onshore Transmission Assets.
Project Design Envelope (PDE)	A description of the range of possible elements that make up the design options for the Proposed Development under consideration when the exact engineering parameters are not yet known.
Proposal of Application Notice (PoAN)	Formal notification sent to the Local Planning Authority outlining the intent to submit a Major/National Planning application a minimum of 12 weeks in the future.
Proposed Development	Term used to define the Onshore Infrastructure associated with the Project landward of MLWS for which consent is being sought. Further details of the parameters are included in Section 3: Project Description.

Defined Term	Definition
Ramsar Sites	Ramsar Sites are wetlands of international importance that have been designated under the criteria of the Ramsar Convention on Wetlands for containing representative, rare or unique wetland types or for their importance in conserving biological diversity.
Rochdale Envelope (also known as Project Design Envelope)	Inter-changeable with PDE.
Scoping Boundary	The boundary within which all elements of the Proposed Development will be located. The Scoping Boundary comprises the Landfall, Cable Corridor which starts at MLWS and Substation. This area may be refined through future site selection work, with details presented in the Onshore EIA Report.
Scoping Opinion	Regulation 17 of EIA Regulations allows for a request to the Planning Authority (or Scottish Ministers as appropriate) to be made to provide 'an opinion' in relation to the EIA. The Scoping Opinion is the formal written response outlining the scope and level of detail expected to be provided in the Onshore EIA Report.
ScotWind	Name given to the Crown Estate Scotland offshore wind leasing in April 2022. This was the process of making seabed available for commercial-scale offshore wind projects.
Section 36 Consent	Scottish Ministers' consent under Section 36 of the Electricity Act 1989 required for the generating assets of the Project.
Special Areas of Conservation (SAC)	SACs are areas designated for the conservation of certain plant and animal species listed in the Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.
Special Protection Areas (SPAs)	SPAs are sites that are designated to protect rare or vulnerable birds (as listed on Annex I of the Directive 2009/147/EC on the conservation of wild birds), as well as regularly occurring migratory species.
Site of Special Scientific Interest (SSSI)	A Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981). SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.

Defined Term	Definition
Statutory consultee	Organisations and bodies, defined by statute, who must be consulted on relevant planning applications. Of relevance to the Proposed Development this includes NatureScot; Scottish Environment Protection Agency (SEPA); Historic Environment Scotland, and any other public body which the planning authority (Aberdeenshire Council) considers is likely to have an interest in the Proposed Development by reason of that body's specific environmental responsibilities or local and regional competencies.
Study area	For each environmental topic, the baseline environment will be characterised, and the potential environmental impacts will be described within a topic-specific 'study area'. The study areas are defined for each topic in the Onshore Scoping Report and are based on the maximum spatial extent across which potential impacts of the Proposed Development may be experienced by the relevant receptors (i.e., zone of Influence).
Substation	The onshore Substation which is part of the electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse, by means of electrical transformers.
Substation search area	The search area within Fetteresso Forest, explicitly within 2km of SSEN's proposed Hurlie substation, where the Proposed Development substation will be.
Sustainable Drainage Systems	A sustainable drainage system aims to control the flow of water on site in order to minimise the impact of a development on the surrounding environment, specifically in terms of flooding and pollution of waterways.
Transition Joint Bay	Used to connect an onshore cable to an offshore cable. These are typically concrete lined and are located at the Landfall (see definition above) and where required to join cable runs.
Thistle Wind Partners (TWP)	The Joint Venture of DEME Group, Qair, and Aspiravi as the energy companies that have partnered to develop the Proposed Development.

Defined Term	Definition
Water Framework Directive (WFD)	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. The WFD promotes water management through river basin planning. It covers inland surface waters, estuarine waters, coastal waters and groundwater.
Wind Turbines	Structures comprising of a tubular tower, rotor blades, and a nacelle which houses the Wind Turbine generator..
Zone of Influence	The area around the Proposed Development that may be impacted by the proposed works.
400 kV Cable Corridor	The 400 kV cable corridor will house the cabling required for the onward transmission from the Substation to the proposed SSEN substation, Hurlie.

Acronyms

Acronym	Definition
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
AIS	Air Insulated Substation
AWI	Ancient Woodland Inventory
ALDP	Aberdeenshire Local Development Plan
Bowdun OWF	Bowdun Offshore Wind Farm
AQMA	Air Quality Management Area
ATC	Automatic Traffic Counter
BTO	British Trust for Ornithology
CCC	Climate Change Committee
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
CO ₂ e	Carbon Dioxide Equivalents
CRTN	Calculation of Road Traffic Noise
CTMP	Construction Traffic Management Plan
Defra	Department for Environment Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DMP	Dust Management Plan
DMRB	Design Manual for Roads and Bridges
DUKES	Digest of UK Energy Statistics
EclA	Ecology Impact Assessment
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EPDs	Environmental Product Declarations
EPUK	Environmental Protection UK
ESO	Electricity System Operator
FRA	Flood Risk Assessment
GCP	Grid Connection Point
GHG	Greenhouse Gas
GIS	Gas Insulated Substation

Acronym	Definition
GLVIA3	Guidance for Landscape and Visual Impact Assessment: Third Edition
GVA	Gross Value Added
GWDTE	Ground Water Dependent Terrestrial Ecosystems
HDD	Horizontal Directional Drilling
HDV	Heavy Duty Vehicles
HEDBA	Historic Environment Desk-Based Assessment
HER	Historic Environmental Record
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HND	Holistic Network Design
HNDFUE	Holistic Network Design Follow Up Exercise
HRA	Habitats Regulations Appraisal
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IAQM	Institute of Air Quality Management
ICCI	In-combination Climate Change Impacts
IEMA	Institute of Environmental Management Assessments
IOFs	Important Ornithological Features
IPH	Institute of Public Health
JNCC	Joint Nature Conservation Committee
LCA	Life Cycle Assessment
LCfA	Land Capability for Agriculture
LCT	Landscape Character Type
LDV	Light Duty Vehicle
LLFA	Lead Local Flood Authority
LVIA	Landscape and Visual Impact Assessment
MAU	Marine Analytical Unit
MD-LOT	The Marine Directorate - Licensing and Operations Team
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MSC	Matters Specified in Conditions
NMP	National Marine Plan

Acronym	Definition
NMP2	Second National Marine Plan
NPF4	National Planning Framework 4
OIA	Ornithological Impact Assessment
OS	Ordnance Survey
OTNR	Offshore Transmission Network Review
OWPS	Offshore Wind Policy Statement
OWF	Offshore Wind Farm
PAC	Pre-Application Consultation
PDE	Project Design Envelope
PLHRA	Peat Landslide Hazard Risk Assessment
PoAN	Proposal of Planning Application Notice
PPP	Planning Permission in Principle
PRoW	Public Rights of Way
PPWS	Public and Private Water Supplies
PWS	Private Water Supplies
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SCDS	Supply Chain Development Statement
SEPA	Scottish Environment Protection Agency
SPA	Special Protection Area
SPP	Species Protection Plan
SPV	Special-Purpose Vehicle
SSEN	Scottish and Southern Electricity Networks
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
SWMP	Site Waste Management Plan
SWT	Scottish Wildlife Trust
TAN	Technical Advice Note
TJB	Transition Joint Bay
TWP	Thistle Wind Partners
UK	United Kingdom
UKCP18	United Kingdom Climate Projections 2018
VP	Vantage Point

Acronym	Definition
WFD	Water Framework Directive
WHO	World Health Organisation
ZTV	Zones of Theoretical Visibility

Table of Units

Unit	Definition
°C	Degrees Celsius
GW	Gigawatts
ha	Hectares
km	Kilometres
kV	Kilovolts
m	Metres
MW	Megawatts
nm	nautical miles

1 Introduction

1.1 Background

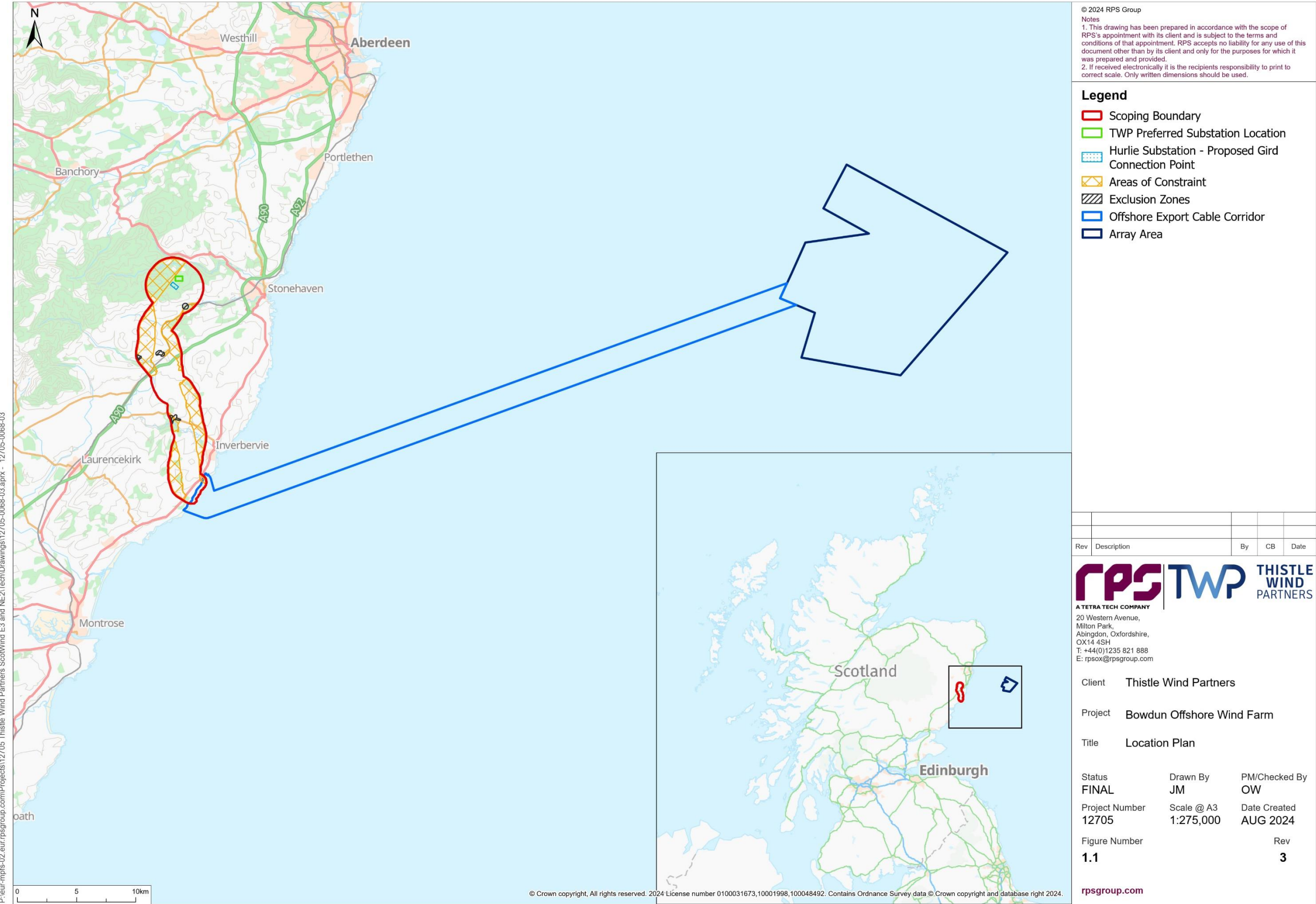
- 1.1.1 In 2020, Crown Estate Scotland (CES) launched the ScotWind leasing process to facilitate the increase in offshore wind capacity to support the Scottish Government's 2045 Net Zero target. Following the ScotWind leasing round in 2022, on entering into an Option Lease Agreement (OLA) with CES, Thistle Wind Partners Limited (TWP) secured the rights to develop a commercial scale Offshore Wind Farm (OWF) project in the E3 Plan Option Area (POA) as defined in the Scottish Government's Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020).
- 1.1.2 TWP is a Joint Venture between DEME, Qair Marine and Aspiravi International. Together the TWP partners have a strong background in offshore renewable energy development and delivery, and associated port developments. TWP is the developer of the Bowdun Offshore Wind Farm (Bowdun OWF), located within the E3 POA, hereafter referred to as the Project, and is located 38 km from the Aberdeenshire coast at its closets point (see Figure 1.1).
- 1.1.3 A special-purpose vehicle (SPV) – Bowdun Offshore Wind Farm Limited, has also been set up for the purpose of developing the Project. The anticipated installed capacity of the Project at this stage is up to approximately 1008 MW.
- 1.1.4 TWP has applied to connect the Project to the national electricity network (the National Grid) which, in the north of Scotland, is owned and operated by Scottish and Southern Electricity Networks (SSEN) Transmission. The operation of the grid, and decisions as to where connections of this scale can be made, is the responsibility of National Grid Electricity System Operator (National Grid ESO). The next phase of offshore connections to the National Grid is currently the subject of an Offshore Transmission Network Review (OTNR) by the UK Government and the regulator, Ofgem. Under the OTNR, the National Grid ESO is responsible for producing a Holistic Network Design (HND) to assess options and improve the coordination of offshore wind connections to transmission networks.
- 1.1.5 In July 2022, National Grid ESO published the Pathway to 2030 HND, which set out the approach to connecting 50 GW of offshore wind to the UK electricity network and the first stage of the design and offshore wind grid connection locations (National Grid ESO, 2022). The grid connection for the Project is part of the second stage known as the Holistic Network Design Follow Up Exercise (HND FUE). In March 2024 National Grid ESO published Beyond 2030: A national blueprint for a decarbonised electricity system in Great Britain (National Grid ESO, 2024). This indicated that the Bowdun OWF ('SW_E3') Grid Connection Point (GCP) will be located at a new substation, to be developed by SSEN, in the Fetteresso Forest known hereafter as 'Hurlie'. SSEN has undertaken public consultation on its proposals for this

new substation and is proceeding with obtaining the necessary consents for their substation. All publicly available data regarding Hurlie is accessible on SSEN's website (SSEN, 2024a).

- 1.1.6 TWP will apply for Planning Permission in Principle (PPP) from Aberdeenshire Council for the Onshore Infrastructure landward of Mean Low Water Springs (MLWS), hereinafter referred to as the Proposed Development. The Proposed Development is the subject of this Onshore Scoping Report. A PPP approach is considered appropriate owing to the scale and complexity of the Proposed Development and is a common approach for schemes of this nature in Scotland. Ultimately the principle of development can be established thus allowing further site specific assessment and requisite design evolution through the second stage of this process.
- 1.1.7 As shown in Figure 1.2 the Proposed Development would comprise Landfall, Cable Corridor from Landfall to a newly constructed substation for the Project, and onward connection to the National Grid electricity transmission network. As noted above the GCP for Bowdun is via SSEN's proposed Hurlie substation¹. The onshore cables would be underground and therefore the Proposed Development will have no overhead transmission lines.
- 1.1.8 The Scoping Boundary (see Figure 1.3) defines the search area for the Cable Corridor. Therefore, where topics refer to the Cable Corridor, the Scoping Boundary between the Landfall and Substation search areas is being considered.
- 1.1.9 The Landfall would be within the area shown in Figure 1.3 as the purple area or the Landfall search area.
- 1.1.10 The substation search area is represented by the blue oval in Figure 1.3 a 2 km search area around the proposed SSEN Hurlie substation (shown on Figure 1.3), the preferred location for the TWP Substation has been identified as the green box within this search area. The exact location of the TWP Substation is subject to ongoing discussions with SSEN, in relation to the grid connection, and Forestry Land Scotland, the Scottish Government Agency responsible for the land and management of Fetteresso Forest.

¹ The SSEN Hurlie Substation is subject to a separate planning application. Planning permission is being sought by SSEN for this 400kV substation as part of their East Coast 400kV Phase 2 Projects, consisting of several onshore reinforcement projects on the east coast of Scotland.

Figure 1.1: The Project Including The Offshore Crown Estate Scotland Lease Site and Onshore Scoping Boundary



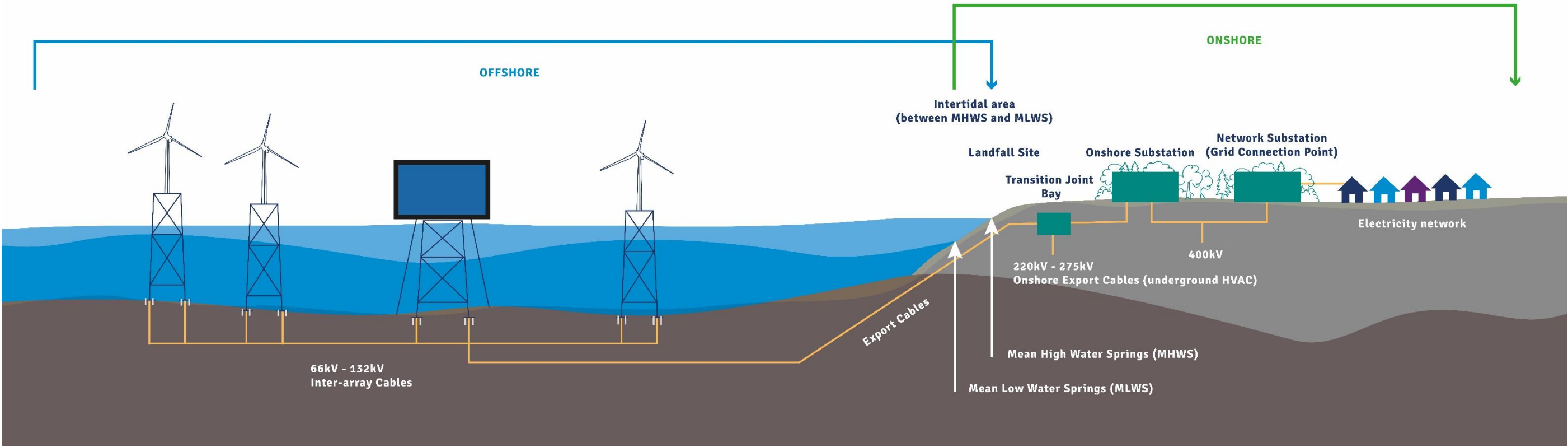


Figure 1.2: Bowdun OWF components and interaction with the National Grid Transmission Network

- 1.1.11 Figure 1.3 also shows ‘exclusion zones’ in black hatching; these are areas in which the Proposed Development infrastructure will not be located.
- 1.1.12 In addition to the exclusion zones, there are also constrained areas within the Scoping Boundary considered to be subject to additional constraints (shown in orange). For example, a portion of the substation search area is shown as constrained, due to SSEN proposals in these areas and designated sites e.g. Garden and Designed Landscapes are shown as constrained in the cable route search areas. While still within the red line boundary these areas, highlight where ongoing assessments are seeking to better define the cable route and/or the substation location. As these areas are within the red line boundary they are still being considered within the EIA process. However, the shading offers a degree of focus on less constrained areas in the interest of illustrating the ongoing likely refinement of the cable route.
- 1.1.13 Overall, the principal consents for the Project that will be sought are as follows:
- Application for PPP to Aberdeenshire Council, supported by an Onshore EIA Report for the construction, operation and maintenance and decommissioning of the Proposed Development required to enable the export of electricity from the Offshore Generation Assets to the National Grid GCP at the proposed Hurlie substation, to the west of Stonehaven.
 - A separate application will be made to Marine Directorate Licensing Operations Team to build and operate the offshore array and marine export cable to shore, i.e., all generation and transmission assets seaward of Mean High Water Springs (MHWS). This will be supported by an Offshore EIA Report for the construction, operation and maintenance and decommissioning and its power export system including full details and environmental assessment of the offshore application. A separate Offshore Scoping Report has been submitted to MD-LOT for the offshore aspects of the Project.

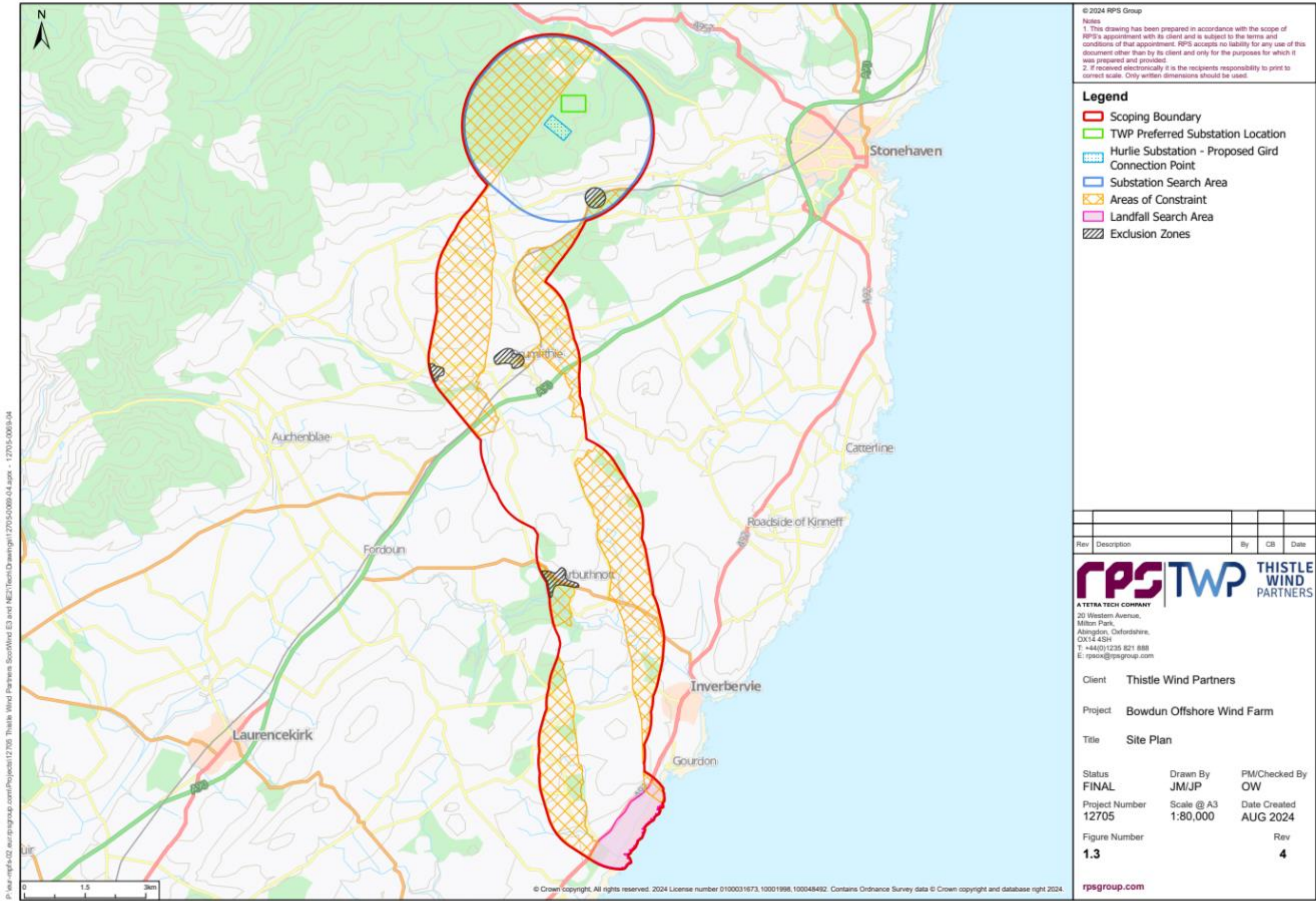


Figure 1.3: Proposed Development Scoping Boundary and the Substation and Landfall Search Area

- 1.1.14 This Onshore Scoping Report identifies potential impacts and significant effects, and associated topics proposed to be scoped into the EIA for the Proposed Development which will be the subject of the PPP application to Aberdeenshire Council. It is based upon an understanding of the environmental conditions likely to be encountered within the technical topic study areas. The Onshore Scoping Report also identifies those potential topics and effects that are proposed to be scoped out of the EIA Report and considers appropriate mitigation measures that will be adopted as part of the Proposed Development design.
- 1.1.15 Aberdeenshire Council is invited to consider the information provided in this Onshore Scoping Report and to advise on whether they agree with the conclusions reached through the provision of a Scoping Opinion.
- 1.1.16 An EIA Report will be prepared following receipt of the Scoping Opinion from Aberdeenshire Council, with the aim of submitting the PPP application, with the accompanying EIA Report, by the end of 2025.
- 1.1.17 The Onshore Infrastructure would be located within the Scoping Boundary identified within this Onshore Scoping Report (see Figure 1.3). The site and route selection process are underway for the Landfall, Cable Corridor and Substation. All elements have been subject to initial environmental and engineering surveys, and consultation with Aberdeenshire Council has commenced and public/community engagement events are planned for Q3 2024.
- 1.1.18 Consultation with relevant statutory and non-statutory consultation bodies through Aberdeenshire Council's Major Pre-Application meeting process has commenced via an initial introductory meeting with Aberdeenshire Council on 4 March 2024 and subsequent round table meeting on 6 June 2024. This has informed this Onshore Scoping Report and will help to inform the development and design evolution of the Proposed Development. Feedback from Aberdeenshire Council and consultees received thus far has been taken into account in this Onshore Scoping Report.

1.2 The EIA Team

- 1.2.1 This Onshore Scoping Report has been prepared by RPS on behalf of TWP. RPS is a registrant of the Institute of Environmental Management and Assessment (IEMA) Quality Mark in recognition of the standard of the EIAs produced for numerous large scale infrastructure projects. This means RPS adheres to the IEMA quality mark commitments and meet the requirements as set out in Regulation 5(5) of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (The EIA Regulations). A statement confirming the competence and relevant expertise of those preparing the EIA Report shall be included in the submitted EIA Report. RPS prepared the Onshore Scoping Report, with the exception of Section 17: Socio-economics, Tourism and Recreation which has been prepared by BiGGAR Economics.

1.3 Project Overview

- 1.3.1 TWP will be seeking PPP for the Proposed Development. The infrastructure required for the Proposed Development, as shown in Figure 1.2, includes marine cables above MLWS terminating at a Transition Joint Bay (TJB); Onshore Export Cables from the TJB to the new TWP Substation, and an onward connection to the National Grid electricity transmission network.
- 1.3.2 The Proposed Development will have no overhead transmission lines and all cables will be buried underground. Further detail of the Proposed Development is provided in Section 3: Project Description.

1.4 Purpose of the Onshore Scoping Report

- 1.4.1 The purpose of this Onshore Scoping Report is to provide information on the Proposed Development to allow for engagement with stakeholders on it's likely significant effects and, as a result, the topics to be addressed in the EIA. In addition, scoping can be used to present and seek agreement on the baseline data sources and assessment methodologies to be used to inform the EIA.
- 1.4.2 This Onshore Scoping Report has been prepared in support of a request for a Scoping Opinion from Aberdeenshire Council in accordance with Regulation 17 of The Town and Country Planning (EIA) (Scotland) Regulations 2017 (hereafter referred to as the Onshore EIA Regulations).
- 1.4.3 Table 1.1 summarises the information requirements for scoping requests set out in the EIA Regulations and where these can be found in this Onshore Scoping Report.

Table 1.1: EIA Regulation Requirements

EIA Regulation Requirement	Summary Content
A description of the location of the development, including a plan sufficient to identify the land.	Section 1: Introduction, includes a plan/map of the location of the Proposed Development.
A brief description of the nature and purpose of the development and of its likely significant effects on the environment.	Section 3: Project Description, includes a description of the Proposed Development. The subsequent topic sections include a description of the likely significant effects on the environment arising from the Proposed Development.
Such other information or representations as the developer may wish to provide or make.	Further information on the Proposed Development is included in Section 3: Project Description and individual topic sections.

- 1.4.4 The approach taken in the preparation of this Onshore Scoping Report has aimed to achieve the following objectives:

- To provide an overview of the baseline environment and the data collection and survey methodologies that will be implemented to inform the EIA baseline characterisation for each technical assessment.
- To propose topics and effects to scope into the EIA process, drawing upon the existing evidence base and presenting topic-specific assessment methodologies where appropriate.
- To propose topics and effects to be scoped out of the EIA process, drawing upon the existing evidence base where appropriate, where there is clear justification for doing so.

- 1.4.5 This approach will allow the EIA to focus on impacts leading to likely significant effects or on those where the significance of the effect is uncertain. This will allow for the preparation of a proportionate EIA Report.
- 1.4.6 The EIA Report will present the findings of the EIA for the Proposed Development informed by the Scoping Opinion provided by Aberdeenshire Council, with the inclusion of responses obtained by Aberdeenshire Council from the relevant statutory and non-statutory consultation bodies. Details of the proposed approach to stakeholder consultation by TWP are outlined in Section 5: Consultation Process.
- 1.4.7 Following PPP the Proposed Development will be seeking a Multi Stage Consent in EIA terms as defined by Regulation 2(1) of the EIA Regulations.

2 Policy and Legislation

2.1 Introduction

- 2.1.1 This section outlines the key legislation and policy context within which the Proposed Development would be considered in detail. A Planning Statement will be prepared in support of the planning application detailing the planning policy context, the information below offers a high-level overview.

2.2 Climate Change Policy and Need for the Project

- 2.2.1 In April 2019, the First Minister of the Scottish Government declared a climate emergency, which was followed by the UK Government declaring its own climate emergency, along with an environmental emergency, in May 2019. These announcements demonstrate the UK and Scottish Governments' commitment to tackling climate change, which is further demonstrated through the policies outlined within this section.
- 2.2.2 The challenges associated with climate change, energy supply and security of supply are driving government policy and decision making on renewable energy developments. There are now a significant number of national and international policies, strategies and regulations relating to climate change and the development of renewable energy in Scotland.

International Commitments

- 2.2.3 The Climate Change Act 2008 transposes into UK law the commitments made following signature of the Kyoto Protocol, which came into effect in 2005. This protocol sets international binding Greenhouse Gas (GHG) emission reduction targets. The Climate Change Act 2008 introduced legally binding targets, including the reduction of GHG emissions by 80% by 2050 compared to 1990 levels, subsequently amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019 to 100% of emissions by 2050 and further amended in 2021 by the Climate Change Act 2008 (Credit Limit) Order 2021 to include a 78% reduction by 2035. As noted below, there are even more ambitious Scottish targets applicable to the Project.
- 2.2.4 The Paris Agreement 2016 (Paris Agreement under the United Nations Framework Convention on Climate Change) is an international treaty, agreed at the Paris Climate Conference. This agreement aims to improve resilience to climate change impacts and provide support to developing countries to implement climate change mitigation. The targets in this agreement supersede those made in the Kyoto Protocol, aiming to keep the global temperature to below 2°C above pre-industrial levels, and limit global warming to 1.5°C.

UK Climate and Energy Legislation and Policy

- 2.2.5 In the UK, there is a variety of climate change and environmental legislation which seeks to secure the reduction of GHG emissions and tackle climate change. These are outlined in Table 2.1.

Table 2.1: UK climate and energy legislation and policy

UK energy legislation and policy	Relevance and Detail
UK Government's target (British Energy Security Strategy 2022)	The UK Government's target is to deploy a capacity of 50 GW for offshore wind development by 2030, of which 5 GW will be floating wind (increased earlier in 2022 from 40 GW by 2035). The UK Government has also set out plans to decarbonise the energy sector by 2035, stating that home-grown, green technologies such as offshore wind and nuclear energy will support the UK to transition away from reliance on fossil fuels
The Energy Act 2023	The Energy Act 2023 focusses on measures to decarbonise the UK, seeking to transform the energy system and assist in the transition to a low carbon economy.
The Climate Change Act 2008	The Climate Change Act 2008 as amended by the Climate Change Act (2050 Target Amendment) Order 2019 provides a legal framework to tackle climate change in the UK. It also established the Committee on Climate Change, an independent, statutory body which advises the UK government on emissions targets and reports to Parliament on progress.
The 'Powering Up Britain: Energy Security Plan' and 'Net Zero Growth Plan'	The 'Powering Up Britain: Energy Security Plan' and 'Net Zero Growth Plan', were published by the Department for Energy Security and Net Zero (DESNZ) in March 2023 (DESNZ, 2023a and DESNZ, 2023b). These build on previous strategies for energy security and net zero in the UK, supporting the development of OWFs and other renewable energy sources to deliver a low-carbon economy.

Scottish Climate and Energy Legislation and Policy

- 2.2.6 In addition to the International and UK legislation set out above, there is further Scottish legislation and policy applicable to the Proposed Development, which as referenced above seek to achieve Scotland's more ambitious targets. These are set out in Table 2.2.

Table 2.2: Scottish climate and energy legislation and policy

Scottish Energy Legislation and Policy	Relevance and Detail
The Climate Change (Scotland) Act 2009	The Climate Change (Scotland) Act 2009 as amended by the Climate Change (Emission Reduction Targets) (Scotland) Act 2019 sets out a legally binding target for 'net zero', i.e., reducing GHG emissions by a value 100% lower than 1990 levels by the year 2045, five years earlier than the remainder of the UK. The Act also requires Scottish Ministers and public bodies to act within sustainable development parameters and

Scottish Energy Legislation and Policy	Relevance and Detail
	places duties on them to act within and deliver these objectives. Furthermore, it also allows Scotland to contribute to the Paris Agreement goals of limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C.
The Climate Change (Emission Reduction Targets) (Scotland) Act 2019	The Climate Change (Emission Reduction Targets) (Scotland) Act 2019 commits to making Scotland net-zero by 2045 relative to a 1990 baseline.

2.2.7 In addition to the above, there is specific policy applicable to offshore wind in Scotland, these are set out in Table 2.3.

Table 2.3: Policy and legislation for offshore wind in Scotland

Policy and Legislation for Offshore Wind in Scotland	Relevance and Detail
Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020a)	The SMP for Offshore Wind Energy (Scottish Government, 2020a) provides a spatial strategy for OWF leasing (including the E3 allocation for Bowdun OWF site under the Scotwind Leasing Round in 2022) and other marine developments. The spatial strategy seeks to reduce any potential impacts on the environment and other marine users. The SMP also provides options for strengthening the Scottish economy including adding jobs and investments through new offshore developments.
The National Marine Plan (NMP) (Scottish Government, 2015)	The National Marine Plan (NMP) (Scottish Government, 2015) was adopted by the Scottish Government in March 2015. Within the NMP, policies are laid out for the sustainable development of marine resources both within Scottish territorial sea (within 12 nm) and offshore waters (12 nm to 200 nm). The Scottish NMP is compatible with the UK Marine Policy Statement (UK Government, 2011) and other UK marine plans. It also addresses the interaction between renewable energy development and other marine users, whilst recognising the need for investment in offshore wind. Currently, the Scottish Government is drafting a second NMP (NMP2) to provide an update given, amongst other changes, the increase in OWF.
The Scottish Energy Strategy: The Future of Energy in Scotland (Scottish Government, 2017)	The Scottish Energy Strategy: The Future of Energy in Scotland (Scottish Government, 2017), presents the plan for decarbonising and improving energy infrastructure within Scotland. This includes the Scottish Government's vision for renewable and low carbon energy solutions, including energy supply and delivery. It also set a target of supplying the equivalent of 50% of Scotland's heat, transport and

Policy and Legislation for Offshore Wind in Scotland	Relevance and Detail
	electricity consumption from renewable energy sources. The strategy emphasizes the importance of recent Contracts for Difference auctions for Scottish offshore wind projects and how the same process can be used and expanded upon for future marine energy developments. The draft ‘Energy Strategy and Just Transition Plan’ was published for consultation on 10 January 2023 and will eventually replace the Scottish Energy Strategy (Scottish Government 2023b). Consultation for the draft Energy Strategy and Just Transition Plan closed on 22 May 2023.
The Offshore Wind Policy Statement (OWPS) (Scottish Government, 2020c)	The OWPS (Scottish Government, 2020b) explains expectations for offshore wind developments in the future and how they can help the Scottish Government reach its Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 goals. The OWPS builds on renewable energy targets outlined in Scotland’s Energy Strategy (Scottish Government, 2017), setting a goal to achieve up to 11GW of offshore wind capacity in Scotland by 2030. The selection of potential OWF locations by Scotland’s SMP allows OWPS to be applied to future developments.

2.3 Application and Consenting Process

Consenting Process (PPP) & National Development

- 2.3.1 During the initial stage of the Proposed Development, PPP is to be sought under The Town and Country Planning (Scotland) Act 1997. This is a common approach for projects and infrastructure of this scale and complexity. TWP, through the submission of a planning application and EIA Report will seek to establish the principle of developing the Onshore Infrastructure within the Scoping Boundary.
- 2.3.2 Following the grant of PPP, TWP would then seek to address all Matters Specified in Conditions (MSC) through subsequent application(s) which would aim to confirm the exact detail and parameters of the development. The detail and parameters would be within the parameters established by the PPP. In addition, any agreed mitigation measures required in order to allow the development to commence will be secured. This will classify the Proposed Development as one requiring Multi Stage Consent under The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017(Regulation 2(1)).
- 2.3.3 As is described below, the Proposed Development is designated as a National Development in National Planning Framework 4 (NPF4). Designation as a National Development means that the Project is

considered to be of national importance therefore, establishing the need for the Project.

2.3.4 The planning application will be considered in line with the undernoted policy and legislation. The key steps to this process are set out in Table 2.4.

Table 2.4: Key consenting steps

Step	Activities/Process
Pre-Application	Pre-Application Consultation with Communities Pre-Application Consultation with Local Authority EIA Scoping Proposal of Application Notice EIA Report Additional consultation including Public Information days
Application	Submission of application (PPP) Circulation of key information to key stakeholders and community Advertisement of application
Statutory Consideration	Period for public comment and responses from statutory or non-statutory consultees.
Recommendations	Council considers all comments Pre-Determination Hearing held if necessary Any issues raised through consultation, discussion or hearing addressed Assessment and recommendation made by Planning Authority
Determination	Council Determination processes – Planning Committee/appropriate delegated process
Post Determination	Review of any conditions attached to Planning Permission Preparation of details to address MSC phase of PPP process.

2.4 Legislative and Regulatory Framework

2.4.1 The relevant planning legislative and regulatory framework which will be considered is set out in Table 2.5.

Table 2.5: Legislative and regulatory framework

Legislative and Regulatory Framework	Details
Town and Country Planning (Scotland) Act 1997	The Town and Country Planning (Scotland) Act 1997 is the primary legislation for the planning system in Scotland, on land, and effectively sets out how the system should operate. Key objectives are listed as ensuring the sustainable use of

Legislative and Regulatory Framework	Details
	land, promoting sustainable economic development, encouraging regeneration as well as maintaining and enhancing heritage assets including those of a natural and cultural description. The 1997 Act also includes requirements for Pre-Application Consultation (PAC) with communities for all major and national developments (the Proposed Development is classified as national).
Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013	The processing of any planning application in Scotland will be carried out under the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 which set out and detail each step of the planning process and outline necessary requirements throughout, from pre application to post determination.
Planning (Scotland) Act 2019	The Planning (Scotland) Act 2019 introduced a range of changes to the planning system. Among the most profound and relevant of these is the changed scope and status of Scotland's NPF4, which has become an all-encompassing national planning framework and policy document. The NPF4 supersedes Scottish Planning Policy and Strategic Development Plan policy which now form part of the Development Plan.
The Town and Country Planning (Pre-Application Consultation) (Scotland) Amendment Regulations 2021	These regulations set out the requirements for PAC, specifically the requirement for a minimum of two public events spaced in excess of fourteen days apart. It is the intention of TWP to offer in excess of this minimum requirement and these regulations will be conformed to.
Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017	The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations) sets out the provisions for EIA that are applicable to the Proposed Development.

2.5 Planning Policy Context

2.5.1 The relevant planning policy context that has been used to inform this Onshore Scoping Report and subsequent Onshore EIA Report is reflected in Table 2.6.

Table 2.6: Planning policy context

Planning Policy Context	Detail
National Planning Framework 4 (NPF4)	NPF4 has a multipurpose role within the planning system, this is of relevance to this project through setting out 18 National

Planning Policy Context	Detail
	Developments, establishing the need for these and then providing detailed policy for the assessment for energy and infrastructure projects. The Proposed Development is a National development (National Development number 3). Strategic Renewable Electricity Generation and Transmission Infrastructure being related to energy transmission (cables and substation) in excess of 132 kV. The classification as a national development establishes the need for the project, specifically with regard to facilitating the transition to net zero and being stated as being essential for this aim. Furthermore, Policy 11 Energy, also outlines clear support for renewable energy proposals which includes enabling works such as grid transmission infrastructure (see paragraph 11a) ii.).
Aberdeenshire Local Development Plan 2023 (ALDP)	The ALDP outlines a vision for the entire Aberdeenshire Council administrative area and promotes sustainable economic growth while safeguarding the environment. This sets out a Spatial Strategy for the area and draws upon the National Vision as set out in NPF4, adopting similar principles in order to achieve outcomes related to supporting sustainable economic growth, reducing carbon emissions and adapting to climate change as well as protecting and enhancing the natural environment. A concerted effort has been made within the plan to ensure that policies tackle and cope with climate change, specifically recognising National Developments (which would include the Proposed Development) and establishing a supportive policy baseline for renewable energy projects, subject to wider environmental considerations. In addition to the ALDP and Policies, there is also a suite of Planning advice which sets out best practice guidance on meeting the requirements of the ALDP.

3 Project Description

3.1 Introduction

- 3.1.1 This section of the Onshore Scoping Report provides a description of the Proposed Development, or where appropriate the parameters within which it will be designed. This section also sets out the activities associated with the construction, operation and maintenance and decommissioning of the Proposed Development that have been used to determine the scope of the EIA.
- 3.1.2 At this stage the Proposed Development description is indicative and has been set to allow sufficient flexibility to accommodate future project refinement. This section therefore sets out a series of parameters for which maximum (and where relevant, minimum) values are shown. These parameters enable an assessment of a likely maximum design scenario and are referred to as the Project Design Envelope (PDE).
- 3.1.3 Throughout the design and EIA process, TWP will seek to refine the proposed parameters and to provide more detailed likely maximum design scenarios. The Onshore EIA Report will present a project description, with further refinement of the parameters on which the assessment will be based.
- 3.1.4 The Proposed Development will be located within the Scoping Boundary shown on Figure 1.3.
- 3.1.5 The Scoping Boundary has been refined through a series of studies. These studies investigated a number of different landfall options, cable routes and potential GCPs on the electricity network. The ultimate location of the GCP is not TWP's decision but that of the National Grid ESO. TWP considered a number of options as part of the initial GCP studies, in anticipation of the completion of the HNDFUE studies being undertaken by National Grid ESO.
- 3.1.6 The GCP for the Bowdun OWF is expected to be 'Hurlie', a new substation to be constructed by SSEN in the Fetteresso Forest area of Aberdeenshire, approximately 6 km to the west of Stonehaven, in line with that reported in the Beyond 2030 Report (National Grid, ESO 2024). SSEN had previously undertaken public consultation on proposals for a new substation in the vicinity of an existing SSEN substation at Fiddes, approximately 6km south of Fetteresso Forest. However, in light of significant concern raised during consultation by the local community, proposals were amended and a revised location adjacent to the existing SSEN substation in Fetteresso Forest has been presented as an alternative option, referred to as Hurlie. SSEN has proceeded with public consultation on this revised site as well as obtaining the necessary consents for the Hurlie 400kV substation.
- 3.1.7 The Landfall search area at Benholm has been identified through desk-based studies, which considered a number of different locations. The locations were assessed against a number of parameters such as, space

availability, accessibility, geology, slope, cliff height, existing/planned infrastructure and numerous environmental and human factor constraints. In addition, the chosen Landfall location had to take into account the proposed Offshore Export Cable corridor. Proximity to the anticipated GCP was also a key consideration in this process. At the time of selecting a landfall location at Benholm initial indication was that GCP would be Fiddes due to the work being undertaken by SSEN. Following a change of the SSEN substation proposals from Fiddes to Hurlie, a review of the landfall location at Benholm was undertaken to confirm the locations was still the most appropriate for the Project. The outcome of this review was that Benholm remains the preferred Landfall location for Bowdun OWF from both a GCP point of view and suitability for the Offshore Export Cable Corridor.

3.1.8 The Scoping Boundary area is 6,202.43 hectares (ha) covering a broad area of land stretching from the coastal area to the south of Gourdon, passing through the wider Arbuthnott and Drumlithie areas before reaching the proposed GCP in the vicinity of the proposed SSEN transmission infrastructure within Fetteresso Forest (Hurlie substation). It is entirely contained in the Kincardine and Mearns area within the local authority area of the Aberdeenshire Council. There are seven community council areas as shown on Figure 3.1 whose boundaries overlap with the Scoping Boundary:

- Arbuthnott Community Council;
- Benholm and Johnshaven Community Council;
- Gourdon Community Council;
- Mearns Community Council;
- Royal Burgh of Inverbervie;
- Catterline, Kinneff and Dunnottar; and
- Stonehaven and District Community Council.

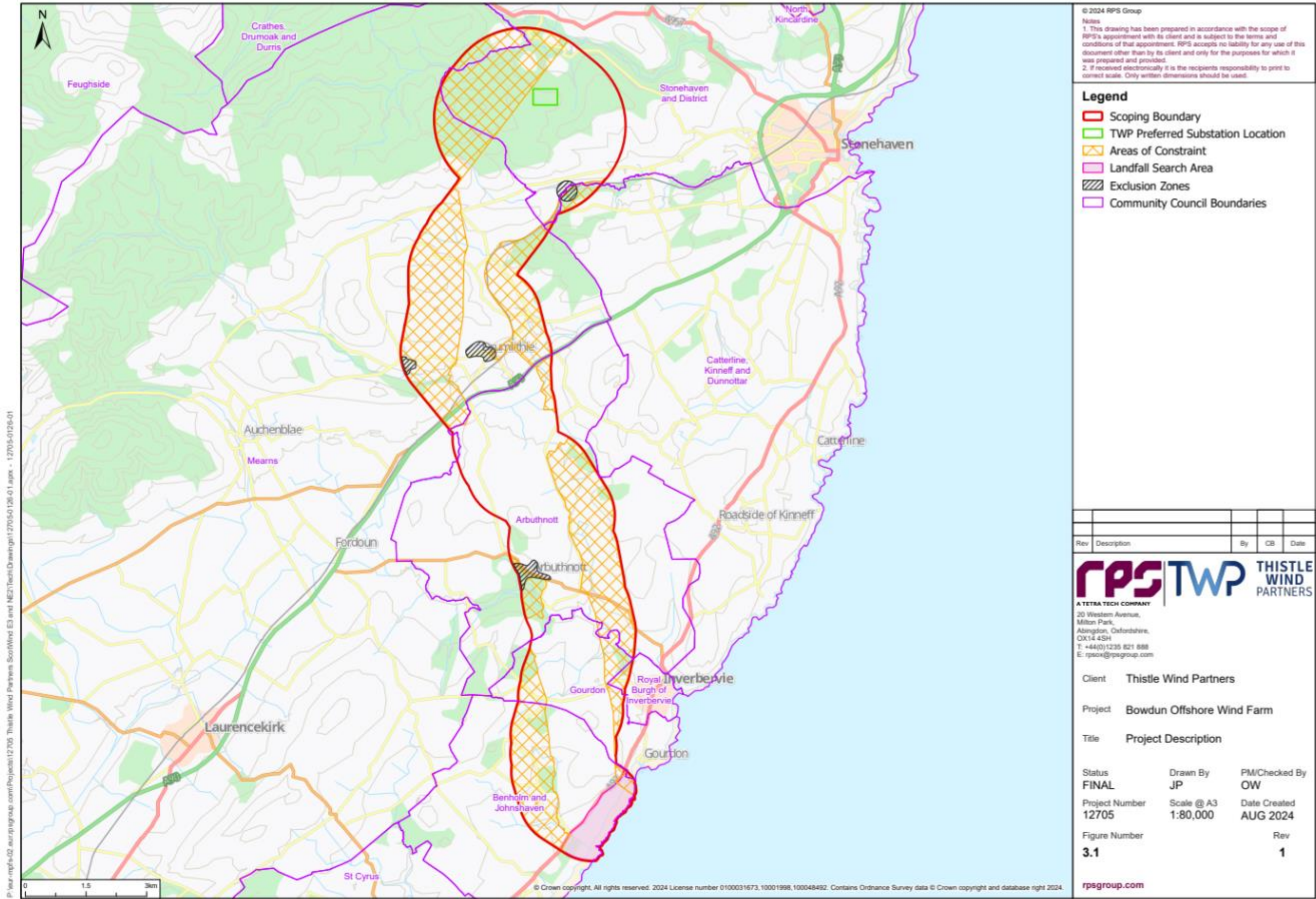


Figure 3.1: Community Councils within and adjacent to Onshore Scoping Boundary

3.2 Project Design Envelope (PDE) Approach

- 3.2.1 The PDE approach (also known as the Rochdale Envelope approach) will be adopted for the Proposed Development assessment. This approach is common practice to assist with a need for flexibility, in accordance with Scottish Government guidance (Planning Advice Note 1/2013, 2013b). Utilising the PDE approach provides flexibility in the design of a project and allows for assessment of a likely maximum design scenario within the maximum (or minimum) parameters identified.
- 3.2.2 This approach will be taken because it is not possible to provide precise final design details of the Proposed Development at this stage in the project development process. Additionally, consultations with statutory and non-statutory stakeholders are ongoing. A number of design principles are being developed, which will be considered alongside with stakeholder feedback and wider feedback and engineering considerations to allow TWP to fully understand likely significant effects that need to be mitigated, which will aid the refinement of the final application. As the Proposed Development progresses, the design detail will evolve based on technologies and stakeholder feedback and this additional design definition will be provided at both PPP and then more so at MSC stages.
- 3.2.3 Transmission infrastructure, including cabling and substation technologies, is constantly evolving. Therefore, improvements in technology and construction methodologies occur frequently and an unnecessarily prescriptive approach at this stage could preclude the adoption of new technology and methods.
- 3.2.4 For each of the impacts to be assessed in the topic-specific Onshore EIA Report Chapters, the maximum design scenario will be identified from the range of potential options for each parameter in the PDE. The maximum design scenario assessed is therefore the scenario which would give rise to the greatest potential impact. For example, where several design options are included, the assessment will be based on the option predicted to have the greatest impact. This may be the option with the largest footprint, the greatest height or the largest area of disturbance during construction, depending on the topic under consideration. By identifying the maximum design scenario for any given impact, it can be concluded that the impact (and therefore the effect) would be no greater for any other design scenario. By employing the maximum design scenario approach, this retains some flexibility in the final design of the Proposed Development, but within certain maximum or minimum parameters, which will be assessed in the Onshore EIA Report.
- 3.2.5 The details about the PDE will be clearly set out within the project description chapter of the Onshore EIA Report and within the topic chapters to identify the maximum design scenario for that topic.

3.3 Proposed Infrastructure

3.3.1 The key components for the Proposed Development, comprise the following:

- Landfall site - this is where the Offshore Export Cables are jointed to the Onshore Export Cables.
- Cable Corridor - the area within which the Onshore Export Cables will be located i.e., between Landfall and the Substation.
- Any temporary ancillary onshore infrastructure required for the construction phase of the Cable Corridor and Substation (such as construction compounds and access).
- Substation - the proposed onshore substation containing the components for transforming the power supplied from the Bowdun OWF up to 400 kV. It is anticipated that the Substation will be at a location close to the GCP, within the substation search area.
- 400 kV onshore cable corridor - the cable corridor for the onward transmission to the grid, which connects the Proposed Development Substation to the Hurlie Substation.

3.3.2 These key components are briefly described in the following sections and shown on Figure 1.2. Parameters (dimensions and numbers where appropriate) are provided to indicate the potential scale of the Proposed Development. A refined project description will be provided in the Onshore EIA Report.

Landfall

3.3.3 Landfall will be located within the coastal area between Gourdon and Benholm Beach, Aberdeenshire (see Figure 1.3) which is in the Kincardine and Mearns Area of Aberdeenshire.

3.3.4 The exact location of the Landfall is subject to a process of refinement and will be described further in the subsequent Onshore EIA Report. However, it would be located within the Landfall search area indicated on Figure 1.3.

3.3.5 Where the cables come ashore at the Landfall, the Offshore Export Cables would be installed through the intertidal zone using trenchless methods (e.g., Horizontal Directional Drilling (HDD), micro-tunnelling, pipejacking etc.). Trenchless methods typically involve the installation of cables directly or through pre-installed underground ducts below ground with minimal excavation. Initial studies have noted the presence of conglomerate material at the Landfall which requires careful consideration and will be subject to further assessment to determine the most appropriate construction method.

3.3.6 The multicore Offshore Export Cables will be split and jointed to the single core Onshore Export Cables at the TJBs. The TJBs are an underground concrete structure (steel reinforcement may be added if necessary) where the cables and joints are anchored. These would be backfilled with a suitable material and the area around the TJBs will be landscaped and

returned to as close to the original condition as appropriate. During the operational phase, visible evidence of the TJBs would be limited to a manhole required for visual inspection of a link box in close proximity to the TJB and would be located on the landward side of the Landfall.

- 3.3.7 The works at the Landfall are likely to require access to the shoreline for construction vehicles and drilling equipment depending on the installation method and the location of the Landfall. The Landfall works would be supported by a temporary construction compound. Construction accesses and compounds will be sensitively designed taking into account environmental issues and the EIA findings including local amenity and traffic.

Onshore Cabling/Cable Circuits

- 3.3.8 Onshore Export Cables are typically installed as cable circuits, which comprises three independent cables. These may be installed in a flat or trefoil formation dependent on installation method, hazard crossings and various other environmental constraints. The Proposed Development may require up to four separate trenches, but this will be subject to further study work.
- 3.3.9 The cable circuits may be installed directly into open trenches or pulled through previously installed ducts. It is anticipated that the majority of the cable circuits will be installed using open trenching methods, however, where an open trench approach is not preferred due to certain environmental constraints (e.g., roads and watercourses), trenchless techniques will be employed, such as HDD.
- 3.3.10 The Cable Corridor is currently anticipated to have a maximum width of 50 m during construction, within which the Onshore Export Cables will be located. The width of the permanent and/or temporary areas may change in specific locations, for example where obstacles such as trunk roads, railway crossings, HDD sections or crossings are required.
- 3.3.11 The Cable Corridor will also require access to allow the movement of construction vehicles and the installation of the Onshore Export Cable circuits, in addition to other related works such as temporary compounds laydown areas and joint bays. This access may require the construction of temporary and permanent access tracks. Operation access may also be required, typically this would be to enable a visual inspection basis of joint bays and any other critical areas identified.

The indicative parameters for the Onshore Export Cables are provided in

- 3.3.12 Table 3.1. All onshore parameters are indicative at this stage and subject to refinement as a result of the engineering process and understanding of the local context and stakeholder feedback.

Table 3.1: Indicative parameters for the Onshore Export Cables

Specification	Parameters
Number of trenches	Up to four
Burial depth (in typical installation conditions)	Up to 2 m
Cable Corridor width	Approximately 500 m at the PPP application stage, to be reduced to 50 m through further applications for MSC.
Number of circuits	Up to four
Cables per circuit (onshore)	Three

- 3.3.13 In addition to the above, fibre-optic cables will be required for communications and temperature sensing. This may include up to one communication and one temperature sensing fibre-optic cable per circuit.
- 3.3.14 During construction of the cable trenches, the topsoil and subsoil would be removed and stored separately on site within the temporary working width of the Cable Corridor. Potential construction impacts will be managed through a Construction Environmental Management Plan (CEMP), an outline of which will be provided alongside the Onshore EIA Report.
- 3.3.15 Joint bays and link boxes would be required along the Cable Corridor. Joint bays are typically concrete lined pits, that provide a clean and dry environment for jointing sections of cable together. These are then backfilled with a suitable material and re-covered with native soils, as appropriate, and the area would then be landscaped and returned to as close to the original condition as feasible. Link boxes are smaller pits that house connections between the cable shielding, joints for fibre-optic cables and other auxiliary equipment. It is likely these would be the only remaining visible evidence of the Cable Corridor during the operational phase, with a manhole cover granting access for inspection purposes.
- 3.3.16 Full details of the proposed Cable Corridor, jointing bays and installation methods (and parameters) will be included within the Onshore EIA Report.

Substation Site

- 3.3.17 A purpose-built TWP Substation will be required and would comprise the electrical equipment required to transform Bowdun OWF export electricity voltage to meet the required National Grid level. There will be further equipment requirements to meet the UK Grid Code as required to supply the National Grid.
- 3.3.18 Two broad substation design options are included in the PDE: Air Insulated Substation (AIS) and Gas Insulated Substation (GIS) designs. For an AIS option, the equipment is typically housed in an open yard style, with a number of control buildings associated with the operation and monitoring of the equipment. For a GIS option, typically some of the equipment would be housed within single or multiple buildings but may also be in an 'open

yard style'. It is also possible to have a combination of the above i.e. a hybrid solution which uses AIS and GIS equipment (Hybrid Insulated Switchgear (HIS)). The substation location will also include access roads, areas for landscaping and drainage mitigation within the forest setting and in order to align with other uses including the extensive forestry operations as well as existing and proposed SSEN transmission infrastructure.

- 3.3.19 Provisions will also be required for construction and temporary laydown areas, in the vicinity of the preferred substation area. Temporary construction compound(s) and working area(s) will be required to facilitate the construction of the onshore substation.
- 3.3.20 The exact siting of the Substation within the Scoping Boundary will be identified through the EIA process and will take into account environmental and engineering constraints, as well as stakeholder and commercial considerations. However, the preferred location is identified in Figure 1.3 which is within 2 km of SSEN's proposed Hurlie Substation in Fetteresso Forest. The 2km distance is as per Section 14 of the Connection Use of System Code, definition of connection assets (National Grid ESO, 2017). In addition, there is an existing SSEN Fetteresso 275 kV substation within the Fetteresso forest.
- 3.3.21 An overview of the site selection process is provided in Section 6: Site Selection and Consideration of Reasonable Alternatives.
- 3.3.22 The design envelope for the onshore substation is provided in Table 3.2. It should be noted that AIS and GIS are different in form and size and the indicative maximum parameters are presented here. All onshore parameters are indicative at this stage and may change as a result of the engineering process and as understanding of the local context and stakeholder feedback evolves.

Table 3.2: Indicative key parameters for Onshore Substation

Specification	Parameters
Maximum building heights	25 m, including basement
Maximum platform area	400 m x 600 m
Number of control buildings	Up to 3

3.4 Design Principles

- 3.4.1 The Design Principles envisaged to be at the core of the development and the evolution of the design will seek to 'best fit' the Proposed Development into the local environment, subject to achieving necessary safety, engineering and electrical design requirements. The design principles will also have regard to NPF4, seeking to minimise the potential significant effects of the Proposed Development on the climate, people, value and place (including biodiversity).

Residential Amenity

- 3.4.2 The design will take into account the need to avoid significant effects on residential properties, or public/business buildings. Cable routing and substation site selection will be conducted using appropriate buffer zones from any sensitive receptors. This would include the avoidance of settlements and groupings of houses or buildings as appropriate. This principle will be extended to specifically omit various features in the area, including the settlement of Drumlithie which would be completely avoided alongside Garden and Designed Landscape features, including Arbuthnott. The Cable Corridor will not pass through these receptors (see Figure 1.3 exclusion zones).
- 3.4.3 In addition to the above, the development will generally seek to avoid populated areas, common land, third party interactions, designated recreational resources and any land used for defence purposes or land allocated for residential development within the Local Development Plan. The ease and suitability of construction accesses will be considered to limit disruption.
- 3.4.4 Good practice construction working arrangements, working hours and general good neighbour arrangements would be adopted to avoid significant effects from any impacts associated with traffic, noise and air emissions within and around local communities. Community liaison would be provided through a dedicated Stakeholder Manager appointed for the purpose of prompt resolution of issues.
- 3.4.5 The Landfall will be carefully designed and constructed in order not to prejudice the amenity value of the coastal path running along the coast south of Gourdon. Care will be taken to minimise disruption and enjoyment of this asset. Such steps are not uncommon in Aberdeenshire, with both Moray East and Moray West Offshore Wind Farms landfalls navigating and accommodating coastal paths and access at their respective landfall areas. As noted earlier a trenchless installation method at the Landfall is expected which will limit disturbance.

Biodiversity

- 3.4.6 Throughout all aspects of the Proposed Development, as directed through Policy 3 of NPF4, biodiversity enhancement, conservation and restoration will form a key principle to the design of the Proposed Development. Works will be undertaken so that the environment is left in a demonstrably better state than prior to the commencement of the Proposed Development. The aim through the design of the Landfall, Cable Corridor and Substation will be to avoid impacts on biodiversity, ecology and heritage, but also that appropriate mitigation and restoration take place to enhance the local baseline, ecological connectivity and provide for future management. There will also be a commitment to “make good” areas temporarily affected by construction of the Proposed Development whether that be the restoration and enhancement of hedgerows or habitats impacted by construction, or to reinstate road carriageways in instances where additional passing places are constructed.

- 3.4.7 The approach to biodiversity enhancement will be discussed and agreed with Aberdeenshire Council, with careful consideration of the need to ensure that enhancements and steps required for the compensation of any woodland loss are accounted for separately, as per advice and guidance issued by Aberdeenshire Council.

Roads

- 3.4.8 When constructed, road upgrades or enhancements would be to an adoptable standard. By constructing to an adoptable standard, should such measures implemented for the construction stage be considered to be beneficial Aberdeenshire Council, they can be adopted as permanent improvements (or removed as appropriate). This is in line with similar projects, including substation developments at New Deer, where road improvements have remained in situ to the benefit of the surrounding communities. This approach was agreed as being sensible at the Project's pre application meeting with Aberdeenshire Council on 6 June 2024.

Natural Designations

- 3.4.9 Generally, avoidance of designated features, protected sites, habitats, species and sensitive areas of conservation importance will be sought as well as the avoidance of open water, wetlands or land within a flood risk area (generally this would represent land or built form with an annual probability of being flooded of greater than 0.5%).
- 3.4.10 Furthermore, where practicable the development will seek to avoid areas of deep peat. Efforts will be made to ensure the avoidance of ancient woodland removal compensatory planting will be carried out where appropriate if this is not possible.

Cultural Designations

- 3.4.11 Efforts will be made to avoid impacts upon cultural heritage assets including scheduled monuments, historic buildings, designed landscapes as well as unscheduled archaeological features. As above, this will specifically include Arbuthnott and Glenbervie designations.

Land, Trees and Infrastructure

- 3.4.12 Where practicable, and where such features have already had an impact upon biodiversity and/or caused hydrological disturbance, cable routing will be undertaken along field boundaries and existing linear features, with enhancement steps taken where possible.
- 3.4.13 It is acknowledged that national scale infrastructure projects such as the Proposed Development have the potential to lead to significant impacts upon local roads and traffic, particularly in rural areas such as this part of southern Aberdeenshire. To this end, care will be taken to ensure that appropriate traffic management measures are in place in order to minimise disruption, traffic impacts and severance as appropriate. This will involve the early agreement of construction routes, local signposting to direct drivers along agreed routes, continual toolbox talk updates to staff and

contractors on site, vehicle logs including vehicle origin, registration and purpose in order to identify any issues and target resolutions and ultimately appropriate mechanisms for raising any concerns with TWP. A Construction Traffic Management Plan (CTMP) would be implemented to assist in achieving this.

- 3.4.14 Site specific restoration will be preferred should there be any unavoidable impacts such as the removal of hedgerows during construction or cable laying, with restoration in situ, using appropriate and sympathetic materials the preferred approach. Owing to the length of the Cable Corridor leading to the Substation, restoration and appropriate enhancement within the Planning Application Boundary as a whole would be achievable. This is also likely to include improved access to features and receptors above as part of the Proposed Development.
- 3.4.15 The Substation search area is within an existing commercial forestry plantation at Fetteresso Forest. Discussions have already commenced with the forestry operator, FLS as removal of trees and forestry parcels would be required to facilitate the development. As a forestry plantation, tree removal is part of the ongoing management of the forest with parcels of forest routinely cleared for timber production. Efforts will be made to ensure that tree removal is limited to pre-defined forestry parcels and this removal does not prejudice future operations. The areas to be felled as a result of this development are earmarked for removal within the Mearns Forestry Management Plan (Forestry and Land Scotland, 2014) and comprise a mix of areas already felled, with areas due for felling over stages up until 2049.
- 3.4.16 A preferred substation site has been identified, to the north of the proposed Hurlie Substation. This identification allows for confirmation of the forestry parcels most likely to be impacted by the Proposed Development in terms of tree removal and also indicates where in the cycle of removal within the aforementioned management plan the parcels sit. This in turn will facilitate discussions with FLS and Aberdeenshire Council with regard to the impact upon the forest, appropriate mitigation and associated compensatory planting as required. These details will all be set out within the Onshore EIA Report.
- 3.4.17 Where buildings and boundary treatments are to be put in place, sensitive and appropriate material selections will be made in order to ensure that the built form of the development can be appropriately and successfully integrated into the landscape and respects the character and nature of the surrounding area.
- 3.4.18 The Cable Corridor will cross the A92, the A90 trunk road as well as the main Dundee-Aberdeen railway line. Crossing points would be suitably located to avoid any disruption of service or impacts upon the operation and safety of assets and surrounding area, noting the prominent sensitivities of the surrounding area in this regard. TWP has commenced

consultations with Transport Scotland, BEAR Scotland and Network Rail to facilitate informed design decisions at crossing locations.

- 3.4.19 Similarly the Cable Corridor will cross a number of major fuel and gas pipelines, consultation has commenced with the relevant operators to ensure crossing points are suitably located to avoid disruption of service or impacts upon the operation and safety of these assets.

Embedded Mitigation Measures

- 3.4.20 The EIA Regulations require a description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment.
- 3.4.21 A number of mitigation measures are proposed that form part of the Proposed Development and are referred to in this Onshore Scoping Report as ‘embedded mitigation measures’. These include measures that are part of the design itself such as modifications to the location or design aspects (also referred to as primary mitigation measures) and also those measures required to meet other legislative requirements or standard practices (also referred to as tertiary mitigation measures) (further detail about the approach to mitigation is provided in Paragraph 4.4.12 of Section 4: EIA Methodology.).
- 3.4.22 The topic sections of this Scoping Report identify the embedded mitigation measures of relevance to the assessment of each topic and these include those such as avoidance of designated areas as described in Sections 3.4.2 to 3.4.18 and measures to be contained within the following:
- CEMP
 - CTMP
 - Site Waste Management Plan (SWMP)
- 3.4.23 Embedded mitigation measures will be refined as part of the Proposed Development for assessment in the Onshore EIA Report. A schedule of mitigation will be included with the Onshore EIA Report that collates the proposed mitigation associated with the project.

3.5 Construction and Installation

- 3.5.1 The construction and installation period for the Proposed Development is anticipated to be up to 3.5 years, although it should be emphasised that the Cable Corridor would be constructed progressively. Therefore, the duration of construction at points along the Cable Corridor would be far reduced in specific localities. There is also potential for construction at more than one location e.g. Landfall and substation to run concurrently. The general construction activities would include the following:
- pre-construction site investigation surveys;
 - installation at the Landfall, including TJB;
 - the Onshore Export Cable installation;
 - Substation construction and installation;

- grid connection 400 kV export cable installation; and
- Substation commissioning.

3.5.2 Installation of the Cable Corridor is anticipated to be undertaken in the following broad sequence. However, some sequencing may differ once the Principal Contractor(s) is appointed:

- completion of any preconstruction surveys;
- installation of fencing within the construction areas;
- site clearance and establishment of temporary construction compound(s), including vegetation clearance where required;
- establish and prepare temporary haul road(s) along Cable Corridor;
- excavation of trenches for direct burial and/or cable ducts with topsoil and subsoil removed from the trench and stored on site; or the installation of HDD ducts;
- excavation of joint bays (this may also be undertaken after the ducting is laid and the cable trench is reinstated);
- cable laying/pulling and then cable jointing;
- placement of stabilised backfill material;
- replacement of subsoil and topsoil;
- reinstatement to previous land use and placement of inspection covers (where required);
- removal of temporary fencing and haul road; and
- (re)planting of any sections of hedgerow.

3.5.3 Temporary compound(s) will be required to facilitate the construction of the onshore substation. To install a platform for the Substation, some 'cut and fill' will be required (i.e., excavated material may be used to create a level site for the Substation construction after foundation installation). The extent of cut and fill required will be determined as the design progresses. The Substation building substructures are likely to be composed of steel and cladding materials.

3.5.4 Laying cables along public roads and significant closures of local roads will be avoided where practicable. Where public roads are crossed by the Cable Corridor, as above in Paragraph 3.4.21 impacts will be minimised and in addition control measures such as a CTMP will be employed. These will maintain continuous access as far as possible. Any temporary closure and/or diversions of roads, public footpaths or private accesses during the construction or decommissioning will be agreed in consultation with Aberdeenshire Council and/or landowners, together with the appropriate traffic management measures.

3.5.5 Some of the components of the Proposed Development are likely to be fabricated offsite at manufacturing sites in the UK and/or abroad.

3.5.6 Construction phasing will be set out when details of the Cable Corridor and Substation location are known. In the interest of minimising disruption and securing efficiency in the delivery of other large infrastructure projects in the vicinity of the Proposed Development, construction phasing will have

regard to the phasing and construction times associated with other relevant projects. This approach would be taken in line with feedback already received from Aberdeenshire Council and in relation to transmission and other project substations also planned for the area.

3.6 Operation and Maintenance

- 3.6.1 The seabed lease period for the Bowdun OWF is 60 years. The Proposed Development's assets will require operation and maintenance activities to take place over their lifetime.
- 3.6.2 The Onshore Export Cables would be continuously monitored remotely and may require infrequent on-site inspections and corrective maintenance activities, if and where they may be required.
- 3.6.3 Following completion of construction, operational access to the Landfall TJBs may be required. Link boxes would be provided with inspection covers to allow for access to the TJBs. Some access may be required for checking and where corrective and/or preventative activities are required.
- 3.6.4 The Substation would be monitored and operated remotely. Operational and maintenance staff would visit the Substation to undertake maintenance works as and when required.

3.7 Decommissioning

- 3.7.1 At the end of the operational lifetime the Proposed Development would be decommissioned or repowered.
- 3.7.2 If decommissioning takes place, it is anticipated that all structures above ground would be completely removed. The decommissioning sequence would generally be the reverse of the construction sequence and involve similar types and numbers of vehicles and equipment. Decommissioning will be carried out in accordance with the relevant guidance in place at that time.
- 3.7.3 It is expected that the Onshore Export Cables would be left in situ to minimise the environmental disturbance during decommissioning, this would also be subject to specific land agreements with landowners. The cable ends would be cut, sealed and securely buried as a precautionary measure.
- 3.7.4 The structures of the jointing bays and link boxes would be removed only if it is feasible with minimal environmental disturbance or if their removal is required to return the land to its current agricultural use.
- 3.7.5 The components of substations have varying life expectancies. Transformers typically have a lifetime of up to 40 years, and the lifespans of some components can be extended beyond this period. Decommissioning of the Substation will be reviewed in discussion with the transmission system operator and appropriate regulators in the light of any other existing or proposed future use of the Substation. If complete decommissioning is required, then all electrical infrastructure would be

removed, and any waste arising disposed of in accordance with relevant regulations.

- 3.7.6 Foundations would be broken up and the site reinstated to its original condition or for an alternative use.

3.8 Development Phasing

- 3.8.1 As referred to in Section 2.3, the Proposed Development will be pursued through a Multi Stage Consent approach, with a PPP application and Onshore EIA Report establishing the principle of development and future MSC stage application(s) providing the detail and securing or delivering any specific mitigation.
- 3.8.2 It is anticipated that the Bowdun OWF will be constructed over a period of up to five years, with onshore aspects taking 3.5 years. The timing of commencement of construction is dependent on several factors including the award of necessary consents, securing of project finance (e.g. CfD), progression of the associated Onshore Transmission Assets to facilitate the connection to the National Grid, and completion of procurement and contracting for the Project. However, it is anticipated that construction would commence no earlier than 2029.
- 3.8.3 The specific details of the construction process including timing, duration and sequencing is not known currently, however the expected major construction activities are detailed in Section 3.5. Furthermore, the construction port or harbour locations are not currently known.
- 3.8.4 It is anticipated that Wind Turbines, foundations, and offshore structures will be constructed and assembled at a to be determined port(s) before being transported to the Array Area via specialist installation vessels for installation and commissioning. A separate Offshore Scoping Report covers the offshore aspects of the Project, as consent for the offshore elements is subject to different consenting regimes than the Proposed Development and focus of this report is the onshore aspects of the project.

4 EIA Methodology

4.1 Introduction

- 4.1.1 This section of the Onshore Scoping Report describes the general methodology proposed to be applied to the EIA. It outlines the methodology for the identification and evaluation of potential likely significant environmental effects including the proposed methodology for the identification of potential cumulative effects with other developments and interactions between effects. A systematic and auditable evidence-based approach is to be followed in order to evaluate and interpret the potential effects on physical, biological and human environment receptors.

4.2 Scoping

- 4.2.1 Scoping is the process of identifying the aspects to be considered within the EIA. This Onshore Scoping Report describes the proposed scope and methodology of the technical studies being undertaken to provide an assessment of any likely significant effects. Provision is made under Regulation 17 of the EIA Regulations for an applicant to request a scoping opinion from the determining authority, in this case Aberdeenshire Council. This Onshore Scoping Report provides the information specified in the EIA Regulations to accompany such a request.

Pre-Application Consultation

- 4.2.2 On 4 March 2024, TWP attended an initial introductory pre application meeting with Aberdeenshire Council and formally submitted a Pre-Application Advice Request. This initial contact was undertaken in order to introduce the Proposed Development and set out the likely pathway towards submitting a planning application and preparing an Onshore EIA Report.
- 4.2.3 Following from the above introduction and formal submission, a round table meeting with selected consultees was held on 6 June 2024. Advice from a number of topic specialists and consultees was given, which has been incorporated into this report and the ongoing assessment where appropriate.

4.3 Legislation and Guidance

- 4.3.1 The EIA Regulations set out the requirements for considering EIA projects within Scotland and importantly set out statutory processes and minimum requirements which EIA development must adhere to. The Onshore EIA Report will conform to these requirements. A further overview of key legislation and Guidance is contained in Section 2: Policy and Legislation.
- 4.3.2 Reference will also be made to advice contained in Planning Circular 1/2017: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. The following EIA guidance will be taken into account:

- The Institute of Environmental Management and Assessment (IEMA, 2017) Guidance on Delivering Proportionate EIA - A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice;
- Planning Advice Note 1/2013: Environmental Impact Assessment (Scottish Government, 2017);
- Guidelines for Environmental Impact Assessment (Institute of Environmental Management and Assessment (IEMA), 2004);
- Environmental Impact Assessment Guide to: Shaping Quality Development (IEMA, 2015); and
- Environmental Impact Assessment Guide to: Delivering Quality Development (IEMA, 2016).

4.4 Key Principles of the Assessment

Overview

4.4.1 The EIA process will assess the potential impacts arising from the construction, operation and maintenance, and decommissioning phases of the Proposed Development. The assessment of each topic will form a separate chapter of the Onshore EIA Report. For each environmental topic the following will be addressed:

- outline of the planning policy and guidance context;
- summary of consultation;
- description of the environmental baseline conditions;
- identification of measures envisaged to avoid, prevent, reduce or, if possible, offset significant adverse effects (embedded mitigation);
- assessment of significant effects during the construction, operation and maintenance, and decommissioning phases;
- identification of any secondary mitigation required in relation to likely significant effects identified, together with consideration of any residual effects; and
- assessment of cumulative impacts with other developments and inter-relationships between the environmental topic areas.

Characterising the Baseline

4.4.2 A comprehensive evaluation of the existing environment in which the Proposed Development would sit, will be undertaken to facilitate a robust assessment of the potential effects on receptors. The baseline environmental receptors will be determined through a combination of desk-based studies, primary data and consultation. Baseline conditions will be broadly determined by:

- defining a study area for each topic and corresponding receptor(s) based on their relevant characteristics;
- desk based studies;
- consideration of potential effects that might arise as a result of the Proposed Development; and

- ensure baseline data is sufficient to make informed and robust judgments about the significance of potential effects.

4.4.3 Individual topics will determine their respective study area using the Scoping Boundary with a combination of the determined baseline environment and appropriate linkages with receptors.

4.4.4 Consideration will also be given to the likely evolution of baseline conditions in the absence of the Proposed Development (the future baseline). Each topic section will consider how potential climatic changes may affect topic-specific future baselines, including the sensitivity or resilience of receptors.

Assessment of Significant Effects

4.4.5 For the purposes of EIA, the term ‘impact’ is used to define a change that is caused by an action. Impacts can be defined as direct, indirect, secondary, cumulative and inter-related (referred to as inter-relationships in this report). They can also be either adverse or beneficial. Impacts can also be permanent or temporary. The term ‘effect’ will be used in the EIA to express the consequence of an impact on a receptor.

4.4.6 For each of the impacts assessed in the EIA process, a level of magnitude will be assigned, taking into account the spatial extent, duration, frequency and reversibility of the impact. The magnitude of each impact will be categorised using the following scale:

- No change;
- Negligible;
- Low;
- Medium; and
- High.

4.4.7 Topic specific definitions for each of these categories will be provided in the topic chapters of the Onshore EIA Report, taking into account topic specific guidance and specialist knowledge.

4.4.8 To define the sensitivity of receptors the vulnerability, recoverability and value/importance will be taken into account. The determination of these factors will be specific to each environmental topic and defined within the topic chapters of the Onshore EIA Report.

4.4.9 The sensitivity of each receptor to each impact will then be defined for each topic using the following scale:

- Negligible;
- Low;
- Medium;
- High; and
- Very high.

Evaluation of Significance of Effect

- 4.4.10 Each topic assessment will consider the magnitude of the impact and the sensitivity of the receptor in determining the significance of effect, in accordance with defined significance criteria. A matrix approach will be used to guide the topic assessments and the conclusions will be informed by expert judgement. Generally speaking, with regard to the above, a significance level of ‘Moderate’ or above is considered to be a ‘significant effect’ in the context of the EIA Regulations. This is however dependent on topic specific guidance and as such significance levels will be clearly defined within each topic. An example matrix is provided in Table 4.1.

Table 4.1: Sensitivity of receptor and magnitude of impact matrix

Sensitivity of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No Change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No Change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No Change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No Change	Minor	Minor or Moderate	Moderate or Major	Major
Very High	No Change	Minor	Moderate or Major	Major	Major

Mitigation Measures

- 4.4.11 The EIA Regulations require a description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment.
- 4.4.12 The Institute of Environmental Management and Assessment (IEMA, 2016) outlines three different forms of mitigation:
- Primary mitigation (inherent): *‘Modification to the location or design of the development made during the pre-application phase that are an inherent part of the project, and do not require additional action to be taken’* (IEMA, 2016).
 - Secondary mitigation (foreseeable): *‘Actions that will require further activity in order to achieve the anticipated outcome. These may be imposed as part of the planning consent, or through inclusion in the ES (sic)’* (IEMA, 2016).
 - Tertiary mitigation (inexorable): *‘Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirement, or actions that are considered to be standard practices used to manage commonly occurring environmental effects’* (IEMA, 2016).

- 4.4.13 Significant adverse effects identified will be mitigated as far as practicable. The Proposed Development will include ‘built in’ mitigation, otherwise known as embedded mitigation (this includes both primary mitigation and tertiary mitigation as referred to above). Further or ‘secondary mitigation’ measures that could further prevent, reduce and where possible offset any significant adverse effects will then be developed where necessary, taking into account current guidance, precedents from similar projects as well as the effectiveness and feasibility of solutions. This will be followed by an identification of residual significant effects.
- 4.4.14 The embedded mitigation measures applicable to the assessment of each topic are outlined in the topic sections.

Monitoring

- 4.4.15 Throughout the lifetime of the development, where appropriate, monitoring of the effectiveness of mitigation measures identified through the EIA process to address residual significant effects will be carried out in accordance with Regulation 30 of the EIA Regulations and the guidance contained in Planning Circular 1/2017 (Scottish Government, 2017). Where it is considered appropriate that monitoring measures are attached to a consent this can be achieved through the use of existing mechanisms, such as planning conditions. TWP will work with Aberdeenshire Council to ensure that all monitoring measures are appropriately implemented.

4.5 Inter-Relationships

- 4.5.1 Inter-relationships between EIA topics may lead to greater environmental effects in combination with each other than they otherwise would do if considered in isolation. This can take the form of different impacts within the same EIA topic through the lifetime of the Proposed Development (construction, operation and maintenance and decommissioning) as well as effects on receptors between different EIA topics. These effects will be considered in the Onshore EIA Report.

4.6 Cumulative Effects Assessment

- 4.6.1 An assessment of cumulative effects will be undertaken for the Proposed Development in line with Schedule 4 of the EIA Regulations. This will consider the potential for cumulative effects from this Proposed Development together with other existing and/or approved projects as well as projects that have submitted applications that are not yet consented, as per paragraph (5)(e) of Schedule 4.
- 4.6.2 An initial review of other developments to be included in the cumulative effects assessment is provided in Table 4.2. This will be reviewed, taking into account advice from Aberdeenshire Council in due course, including consideration of likely construction periods as appropriate.

Table 4.2: Initial review of other developments

Project Reference	Description
ENQ/2024/0146	Erection of 400 kV AC Substation and Associated Infrastructure (National Development) – Pre-Application for the SSEN Hurlie Substation
APP/2023/0940	Installation of Battery Energy Storage System with an Installed Capacity of up to 49.9 Megawatts (MW) and Associated Infrastructure – Drumlithie
ENQ/2022/1736	Construction and Operation of a Battery Energy Storage Project of up to 50 MW – Pre-Application. Drumlithie
APP/2022/1701	Installation of 9.2 MW Ground Mounted Solar Array and Battery Energy Storage Units and Associated Infrastructure – Drumlithie
TBC	SSEN Overhead Line works in the vicinity – connecting to and from existing substation infrastructure at Fetteresso, Fiddes and then into the proposed Hurlie substation

- 4.6.3 It is envisaged at this point that projects that will be included in the cumulative assessment will include the transmission network upgrades being carried out by SSEN involving the construction of a new transmission substation, Hurlie. In addition, the associated Overhead Line upgrades by SSEN in the vicinity will also be considered in the cumulative assessment.
- 4.6.4 An agreed date will be set out with Aberdeenshire Council in advance of the finalisation of the Onshore EIA Report, this would serve as a cut-off date for establishing a list of other developments to be considered. Any projects under construction, approved but not yet commenced and those with applications under consideration but not yet determined will be considered. This final category will include any applications at appeal or public inquiry.
- 4.6.5 The Bowdun onshore and offshore consenting regimes overlap, as the MLWS is the extent of the Scoping Boundary and MHWS is the extent of the Offshore Scoping Boundary, there is therefore the potential for in combination effects across both regimes. This will be taken into consideration within each section in order to allow for an assessment of the project in its entirety, in effect both will assess the intertidal area only but that is the extent of the interaction between the assessments.

4.7 Transboundary Impacts

- 4.7.1 Regulation 41 of the EIA Regulations outlines that where a development in Scotland is likely to have significant effects in a European Economic Area state, that certain steps and provisions in this regard apply. Due to the onshore nature and location of the Proposed Development there will be no transboundary effects and as such, these provisions will not be considered

further in the Onshore Scoping Report and are scoped out of the Onshore EIA Report.

4.8 EIA Matters Scoped Out

Consideration of Human Health and Electromagnetic Fields

- 4.8.1 The IEMA guidance on the scoping of human health in EIA (Pyper *et al.*, 2022a) has been considered when determining the likely significant Human Health effects. For Scotland the IEMA guidance notes that the Director of Public Health for the relevant NHS Board is the relevant organisation for EIA engagement in relation to Human Health.
- 4.8.2 During operation, the Proposed Development would contribute to increased national energy security and the provision of renewable energy. This supports many aspects of public health and contributes to the public health benefit of the Proposed Development. For example, reduced reliance on fossil fuels should lead to improvements to air quality which in turn should be beneficial to public health. However, these beneficial effects would not be significant and therefore do not require further assessment. In line with the principles of preparing a proportionate EIA Human Health is scoped out of further assessment. However, it should be noted that mitigation relevant to population health effects is expected to be secured through other parts of the EIA, including:
- landscape and visual impact assessment;
 - geology and ground conditions;
 - air quality;
 - noise and vibration;
 - traffic and transport;
 - socio-economics, tourism and recreation; and
 - water quality and flood risk assessment.
- 4.8.3 The design of the Proposed Development does not include overhead lines and all onshore cables will be buried underground, as such exposure to Electromagnetic Fields (EMF) from these sources can reasonably be expected to be within standards for health protection. This issue is not considered further within this Scoping Report.
- 4.8.4 On this basis all population level health effects are scoped out of the Onshore EIA Report, and it is not proposed that a Human Health or EMF standalone chapter will be included in the Onshore EIA Report. Further detail on this is included in Section 18: Human Health.

Major Accidents or Disasters

- 4.8.5 Regulation 4(4) of the EIA Regulations requires that consideration is given to any '*expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters*'.

- 4.8.6 Major accidents and disasters (MADs) are further defined in IEMA Guidance (IEMA, 2020) which provides the following definitions:
- Major Accident: an event *‘that threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment and requires the use of resources beyond those of the client or its appointed representatives (i.e., contractors) to manage’*;
 - Disaster: a *‘man-made/external hazard (such as an act of terrorism) or a natural hazard (such as an earthquake) with the potential to cause an event or situation that meets the definition of a major accident’*.
- 4.8.7 A description of how MADs are considered in the design of the Proposed Development will be outlined in the project description chapter of the Onshore EIA Report. The Onshore EIA Report will consider the risks of major accidents and disasters relating to the following:
- reduction in groundwater water quality and quantity (Section 19: Water Quality and Flood Risk);
 - impact on quality of surface water and watercourses (Section 19: Water Quality and Flood Risk);
 - increased flood risk (Section 19: Water Quality and Flood Risk);
 - vulnerability of the Proposed Development to climate change (Section 16: Climate Change);
 - accidental pollution (Section 8: Biodiversity and Terrestrial Ecology and Section 19: Water Quality and Flood Risk);
 - impact of construction traffic on accidents and safety (Section 15: Traffic and Transport); and
 - impact of Abnormal Indivisible Loads (AILs) on safety (Section 15: Traffic and Transport).
- 4.8.8 As is set out in dedicated sections embedded mitigation, agreed design principles and stated good practice construction and working arrangements are to be adopted throughout the Proposed Development and are addressed at topic specific levels within this report. Chemical or fuel spillages will be covered and suitably addressed through construction practices, agreed pollution prevention measures and relevant CEMP processes to be implemented. As set out elsewhere in this report, avoidance of key receptors will ensure that risks of MADs upon receptors will be prevented. Furthermore, good design of electrical systems, plant, machinery and other infrastructure to the relevant safety standards and the implementation of safe systems of work will further ensure no significant major accidents risk to or from the Proposed Development.
- 4.8.9 Flooding as a result of the Proposed Development is covered in Section 19: Water Quality and Flood Risk and as set out, is unlikely to occur as a result of the Proposed Development. Flooding as a result of natural disasters is similarly considered to be of low risk, as are other impacts as a result of climate hazards such as extreme weather events.

- 4.8.10 Operational impacts such as failure of equipment, fire or explosions at the onshore substation are considered to be of a low risk. The Substation would not be manned and as above, high quality design standards are to be adopted to ensure a negligible risk.
- 4.8.11 There are a number of major pipelines in the study area including high pressure gas, fuel and oil pipelines. There is a gas pipeline which borders the west of the Scoping Boundary, and passes into the Scoping Boundary, highlighted via the constraints shading to the west of Drumlithie on Figure 1.3. The Cable Corridor will need to cross the pipeline in order to reach the Substation. Given the complex nature of crossing such infrastructure, key design considerations will include to limit crossing points and proximity of the cable corridor to the pipeline. Following discussions with the relevant stakeholders, there is a requirement to ensure the crossing is “at grade” along the route. This restricts the location at which the Cable Corridor would cross the gas pipeline given the undulation of the landscape which additionally, restricts the ability to cross at multiple points. TWP will be using trenchless methods such as HDD to cross pipelines which is a commonly used technique for such operations. The HDD will follow all regulations and best practice for such operations. Appropriate deployment of this technique, safe operation of infrastructure and collaboration with stakeholders will reduce any risks of accidents to well within acceptable parameters.
- 4.8.12 Formal pre-application responses have been provided by Shell and INEOS with respect to the major pipelines. Continued consultation with Shell will continue in line with their response,
- “If the application is to proceed, we would be pleased to meet with the developer to address our concerns and to ensure that any risk to the pipeline is reduced to as low as reasonably practicable”.*
- 4.8.13 In addition INEOS provided six comments in their pre-application responses which,
- “seek to ensure that suitable and sufficient assessment and controls will be in place during the construction and operational phases of this development”.*
- 4.8.14 Construction methods and mitigation measures will be discussed with pipeline operators such that the construction and operational phase of the Proposed Development reduces risks to as low as reasonably practicable for the Major Pipelines in the study area.
- 4.8.15 In addition, it is necessary for the Cable Corridor to cross the railway. Following discussions between Network Rail and TWP, there is a requirement for the cable to cross the railway “at grade” along the route. Similar to the requirements for pipeline crossings as set out above. The point at which this is most practical is to the south of Drumlithie. The crossing will again utilise HDD in order to minimise disruption and impacts upon the railway. This is a very common technique for this type of crossing

of major infrastructure and would be carried out in line with industry practice and with the collaboration of all stakeholders. Historical issues and landslides within the wider vicinity have also been taken into account, the distance from elevated ground, location of the crossing to the south of Drumlithie and importantly the “at grade” nature of the crossing would be suitable. Therefore, the works are considered to have a low or negligible chance of resulting in any ground instability issues at sensitive locations along with wider railway line.

- 4.8.16 In line with the formal pre-application responses, TWP will continue to consult with Network Rail to ensure all necessary measures are followed when crossing the railway line.
- 4.8.17 In addition to crossing the gas pipeline and the railway line as described above, the A90 will also need to be crossed by the Cable Corridor. The use of HDD will ensure there is minimal disruption to the A90, and the use of HDD in these scenarios is a very common approach in developments such as this. Transport Scotland and other relevant stakeholders will be engaged in discussions to ensure the best possible crossing point is chosen. As above, suitable collaborative working and best practice methodologies will ensure there is little or no risks of accidents or disasters.
- 4.8.18 As set out in Figure 1.3, the constraints shading assists in illustrating the known constraints as described above and provides an evidence base for these being considered. The design will continue to evolve to accommodate these and ultimately the Proposed Development minimising risks.
- 4.8.19 Therefore, the risk of MADs occurring as a result or in relation to the Proposed Development are considered to be very low and the topic is to be scoped out of the Onshore EIA Report as a standalone chapter, with coverage across different chapters, where relevant, to be included. This is considered to be appropriate and proportionate in the circumstances.

Waste

- 4.8.20 As identified in Paragraph 3.4.22, TWP intends to submit an Outline SWMP for construction which will be included as a technical appendix to the Onshore EIA Report. A finalised and agreed SWMP would be implemented for the commencement of construction. The Principal Contractor(s) will be required to follow the measures set out within the Outline SWMP. These will include the management of waste and ensuring the movement of waste from the area of construction to the relevant facilities is recorded.
- 4.8.21 The Outline SWMP will lay out the good practice measures adopted and ways in which all waste from the Proposed Development must be managed. On this basis, it is unlikely that any significant effects will arise from the disposal and recovery of waste during the construction phase of the Proposed Development.
- 4.8.22 The Outline SWMP will be prepared in accordance with the relevant, policy, legislation and guidance, including:

- “The Waste Hierarchy” (as outlined in Section 34 of the Environmental Protection Act) which promotes the Best Practical Environmental Option and preferred options for management of waste;
- Guidance for Pollution Prevention (NetRegs, 2024);
- the IEMA Guide to Materials and Waste in Environmental Impact Assessment (IEMA, 2020);
- Environmental Protection Act 1990;
- Environment Act 1995; and
- Environmental Protection (Duty of Care) (Scotland) Regulations 2014.

- 4.8.23 The roles and responsibilities of the Principal Contractor(s) will be overseeing the implementation of the waste management procedures during the construction phase as identified in the Outline SWMP. This will include the relevant and mandatory training requirements for all contractors on site.
- 4.8.24 The Outline SWMP will also set out the requirements for ongoing monitoring, this could be in the form of regular site inspections, to ensure compliance with the waste management procedures prescribed in the Outline SWMP.
- 4.8.25 SEPA’s pre-application response highlights the importance of managing waste material that arises from forest waste. The Proposed Development will avoid large scale felling where reasonably practicable. However, in the instance where large scale felling may be required, a map with the boundaries of where felling will take place and a description of what is proposed for this timber in accordance with SEPA’s Guidance Note (LUPS-GU27) *‘Use of Trees Cleared to Facilitate Development on Afforested Land’* (SEPA, 2014).
- 4.8.26 Operational waste is proposed to be scoped out, as there will be limited amounts generated during this phase of the Proposed Development. However, any waste produced during this phase would be managed using the waste hierarchy. Where disposal is required, it will follow collection procedures, using licensed contractors and as agreed by the relevant regulators and local authorities.
- 4.8.27 On this basis, operational waste is unlikely to produce significant effects and therefore it is proposed to be scoped out of the Onshore EIA Report.

5 Consultation Process

5.1 Pre-Application Consultation

- 5.1.1 The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013, The Town and Country Planning (Pre-Application Consultation) (Scotland) Amendment Regulations 2021 and the relevant provisions of the Town and Country Planning (Scotland) Act 1997 (as amended) outline the extent of statutory PAC to be undertaken on projects of this nature.
- 5.1.2 The objective of PAC is for communities to be better informed about major and national development proposals and to have an opportunity to contribute their views before a formal planning application is submitted to the planning authority. This helps to:
- improve the quality of planning applications;
 - mitigate negative impacts where possible;
 - address misunderstandings; and
 - to air and address, where practicable, any community issues.
- 5.1.3 It is outlined that any adjustments made as a result of PAC should improve the proposal and assist the efficient consideration of applications once submitted. This process ensures the wider concept of ensuring that mitigation is designed into the Proposed Development from an early stage.
- 5.1.4 It is envisaged that the PAC process would likely engage both the general community and assist in engaging with a wider spectrum of stakeholders.
- 5.1.5 PAC does not take away the need for, and right of, individuals and communities to express formal views to the planning authority during the planning application process itself. While engagement should be meaningful and a developer should consider community views, there is no obligation to directly reflect them through changes to the development proposed in any subsequent application. Therefore, it is important for communities and others to follow their interest in a proposal through to the planning application stage, when views can be made to Aberdeenshire Council before it determines the application. It is the intention of TWP to proactively engage with communities and stakeholders and to carefully design the Proposed Development with comments and feedback in mind.
- 5.1.6 Under the aforementioned Regulations, the statutory minimum (which will be exceeded in this case) would represent two public events held more than 14 days apart following the submission of a Proposal of Application Notice (PoAN).
- 5.1.7 As PAC is required in this case, TWP will provide Aberdeenshire Council a PoAN at least 12 weeks prior to the submission of an application for planning permission. That notice must include the following information:
- a description in general terms of the development to be carried out;
 - the postal address of the development site, if it has one;

- a plan showing the outline of the site at which the development is to be carried out and sufficient to identify the site;
- detail as to how the prospective applicant may be contacted and corresponded with; and
- an account of what consultation the prospective applicant proposes to undertake, when such consultation is to take place, with whom and what form it will take. This should include steps in addition to the statutory minimum for consultation.

5.1.8 Therefore, TWP will ensure the site identified in the PAC covers the likely options for the final proposal of the Proposed Development. After a minimum of 12 weeks, having carried out a level of consultation beyond the statutory requirements throughout the wider pre-application phase of the Proposed Development, as well as any additional requirements specified by Aberdeenshire Council, TWP will submit the application along with the required written PAC report.

5.1.9 TWP will hold at least two events for members of the public where they can make comments on the proposals.

5.1.10 Notice of these public events must and will be published at least seven days in advance in a newspaper circulating in the locality of the Proposed Development. The notice for each public event must and will include:

- a description of the Proposed Development and its location;
- details as to where further information may be obtained concerning the Proposed Development;
- the date and place of the public event;
- a statement explaining how, and by when, persons wishing to make comments to the prospective applicant relating to the proposal may do so; and
- a statement that comments made to the prospective applicant are not representations to the planning authority, and that there will be an opportunity to make representations on any resultant application to the planning authority.

5.1.11 The timing of the public events is a key factor within TWP's engagement plans in terms of both advising of the Proposed Development, but also allowing for sufficient time to incorporate advice, feedback or potential changes into the Proposed Development.

5.2 Consultation to Date

5.2.1 At the time of writing, the following activities have taken place:

- Pre-Application Introduction with Aberdeenshire Council (4 March 2024);
- Formal Major Application Consultee Round Table Meeting (6 June 2024), with written feedback received (25 July 2024);
- written correspondence with NatureScot concerning the scope and methodology of Ornithology surveys being carried out;

- initial, informal, dialogue with local community groups and stakeholders in order to raise awareness of the Project;
- podcasts and one information video produced by TWP and available www.twp.scot; and
- attendance and presentations at local community events in the Kincardine and Mearns area as described below under Community Engagement.

5.2.2 Feedback from Aberdeenshire Council and other stakeholders offered to date has been incorporated into the proposal and design as well as specifically directing and informing Section 9: Terrestrial Ornithology. As per Section 3.4, the advice is also being taken into account with regard to the Council's approach and expectations concerning biodiversity enhancement, compensatory tree planting and potential road upgrades.

Community Engagement

5.2.3 TWP have commenced engagement with the local community pre-scoping to share information on Bowdun OWF. This has included notification of the community councils via email, and an invitation to the upcoming consultation events scheduled for October 2024. On 9 May 2024.

5.2.4 Additional engagement activities undertaken are summarised in Table 5.1.

Table 5.1: TWP Community engagement activities

Engagement	Description of events/activities
Community Councils	Meeting with Gourdon Community Council to introduce the Project. Benholm and Johnshaven Community Council (September 2024) Stonehaven District Community Council (October 2024). Continued engagement with the Community Councils post scoping and during the EIA will be undertaken e.g. providing updates and attending meetings as required.
Community Events	Stall at the Feein' Market June 2024 Stall at the Harbour Festival August 2024
STEM/Skills	TWP has partnered with many Science Technology Engineering and Maths (STEM) organisations to engage with school children in our project region and provide access to education on renewables and offshore wind. Events attended include -Young Engineers and Science Club (YESC) Celebration Day, May 2024 at bp Aberdeen. -TechFest Activity Weekend, June 2024 at Robert Gordon University.

- 5.2.5 TWP are also working with the Stonehaven and District Round Table in relation to supporting grants to be available to local organisations and charities.

5.3 Stakeholder Identification

- 5.3.1 Through experience of the Scottish Planning System and the knowledge and cognisance of examples of similar large-scale infrastructure projects, the following key stakeholders have been identified in Table 5.2. This is not exhaustive at this stage and will be added to as consultation and discussions continue.

Table 5.2: Relevant stakeholders identified for engagement as part of the Proposed Development application process

Stakeholder	Proposed Means of Engagement
Aberdeenshire Council	Early project introductions (4 March 2024) Formal Major Pre-Application meeting (6 June 2024) Focused post-scoping engagement on key EIA topics (as required) Attendance of PAC event(s) (PAC phase) Assessment/determination meetings/calls Pre-Determination Hearing
NatureScot Scottish Environment Protection Agency (SEPA) Transport Scotland Historic Environment Scotland	Early project introductions (pre-scoping/scoping phase) Major Applications Meeting(s) Post Scoping engagement on key topics PAC events Engagement during determination phase Engagement and consultation post determination
Scottish Water Scottish Ministers Marine Scotland	Early project introductions (pre-scoping/scoping phase) Engagement during determination phase Engagement and consultation post determination
Community Councils	Early project introductions (pre-scoping/scoping phase) Post Scoping engagement Engagement during determination phase PAC Events Pre-Determination Hearing
Offshore Wind Farm Developers	Early project introductions (pre-scoping/scoping phase) Engagement during determination phase Engagement and consultation post determination PAC Events

Stakeholder	Proposed Means of Engagement
National Grid/SEN-Transmission	Ongoing engagement re grid connections
Non Statutory Consultees e.g., Fishery Boards, Royal Society for the Protection of Birds (RSPB).	Early project introductions (pre-scoping/scoping phase) Post Scoping engagement on key topics PAC events Engagement during determination phase
Network Rail	Early project introductions (pre-scoping/scoping phase) Engagement during determination phase Engagement and consultation post determination
Pipeline Operators Northern Gas Networks (NGN) Shell INEOS	Early project introductions (pre-scoping/scoping phase) Engagement during determination phase Engagement and consultation post determination

6 Site Selection and Consideration of Alternatives

6.1 Introduction

- 6.1.1 A staged and systematic exercise is ongoing for the Proposed Development in order to establish, define and ultimately select the sites for the Substation, Cable Corridor and Landfall. This exercise and the considerations taken into account will continue to evolve and be revised beyond the EIA Scoping stage and indeed beyond the initial PPP stage, ultimately leading to a fully defined development through MSC. A combination of environmental assessment, surveys, engineering and land inputs will be utilised to determine the optimal design and locational parameters for the Proposed Development. This will have cognisance to the input of stakeholders and be partly led by the application of planning conditions on the PPP, which in turn will direct additional mitigation and considerations required within the detailed design.
- 6.1.2 The Onshore EIA Report, prepared for the PPP application will identify the likely significant effects on the environment and will ensure that Aberdeenshire Council are able to take account of all significant environmental effects likely to follow as the Proposed Development proceeds through the Multi Stage Consent process. It is the intention that the Onshore EIA Report will afford Aberdeenshire Council sufficient confidence that the PPP and associated conditions cover the requisite development parameters in order to cover the subsequent MSCs.
- 6.1.3 The structure of the aforementioned PPP and MSC stages will provide a definitive link to the ultimate securing of mitigation. As above, planning conditions setting out the requisite levels of information required at the MSC stage in addition to ongoing design and engineering work will allow for bespoke solutions to be adopted in order to fully secure and provide mitigation but also adhere to the key design principles as set out in avoiding impacts upon key receptors.
- 6.1.4 The Onshore EIA Report will outline a summary of the considerations for site selection and alternatives considered by TWP for the Onshore Infrastructure and an indication of the main reasons for the chosen option.
- 6.1.5 Fundamentally, the Proposed Development is defined by seeking to connect the fixed location of the Generation Assets with a fixed and defined onshore GCP within the Fetteresso Forest area, as previously set out in Figure 1.3, with the Landfall site and Cable Corridor routing being considered in terms of environmental, community and consenting considerations.
- 6.1.6 The exercise to date has included a feasibility study and environmental appraisal of a number of potential GCPs, landfall locations and prospective cable routes and areas of search. These in turn have been informed by the HNDFUE undertaken by National Grid ESO. The HNDFUE builds on the Pathway to HND delivered in July 2022. The HNDFUE will provide National Grid ESO's network design recommendations for offshore wind projects

that were not fully considered in July 2022. To date, this has indicated that the Project is to connect into a substation in the vicinity of Hurlie Substation, within Fetteresso Forest to the west of Stonehaven.

- 6.1.7 For the Landfall, Cable Corridor routing and Substation aspects of the site selection, multiple options have been considered in order to define the current Scoping Boundary. Further refinement taking account environmental assessment, engineering and land engagement will be utilised in order to define these aspects for inclusion in the Onshore EIA Report and PPP planning application in due course. This exercise has been conducted using physical site visits as well as desk based, Geographic Information System analysis which utilises agreed parameters for individual components and constraints. This includes substation footprints and maximum cliff heights or slopes for potential landfall locations, as otherwise defined by the project or in accordance with industry standard requirements as appropriate.
- 6.1.8 The study requirements were to:
- identify consentable landfall locations;
 - identify suitable substation sites to route transmission cables to and from;
 - provide cable route corridors from landfalls to GCPs by considering environmental and technical constraints;
 - provide an initial assessment of onshore environmental cable routing from landfall to onshore GCPs;
 - undertake walkover surveys, identifying and documenting environmental constraints identified; and
 - adhere to the established HND appraisal methodologies where possible because of the need for study outputs to inform inputs to Transmission Owners and National Grid ESO for the HNDFUE.
- 6.1.9 Options for Landfall points, the Cable Corridor and the Substation were considered in line with the criterion set out, analysed and then input into a scoring matrix considering environmental, community and consenting factors. This will be further detailed and defined in the Onshore EIA Report.
- 6.1.10 As set out above, the site selection exercise has continued to progress and evolve, as demonstrated by the constraints shading set out on Figure 1.3. This provides an insight into the ongoing work and site selection refinement which is continually progressing and will be described in more detail in the Onshore EIA Report.

6.2 Substation and Cable Corridor

- 6.2.1 Following the indicative assumption of the GCP in the vicinity of Hurlie at Fetteresso Forest, work has commenced to select an appropriate site within the substation search area. The criteria of the Substation included a maximum operational spatial extent of 400 m x 600 m, access considerations as well as amenity, landscape and visual, ecology, cultural heritage and ground conditions. The substation also to be within 2 km of

the National Transmission Operator (SSEN) Hurlie Substation point of connection. Work continues on this selection exercise and will be fully defined through the Onshore EIA Report and planning processes. As noted in paragraph 1.1.10 a suitable site has been identified and is being discussed with Forestry Land Scotland and SSEN given the location within Fetteresso forest as shown on Figure 1.3.

- 6.2.2 Further to the above, work has commenced to select a Cable Corridor, considering environmental and technical constraints, refer to Figure 1.3 highlighted constraints identified to date. A combination of desk-based analysis of constraints data as well as on-site considerations is being used to better define potential route options, which will be defined through further technical assessment and analysis in advance of the Onshore EIA Report and planning stages. Site surveys undertaken as part of the EIA process will also feed data into the design process.

6.3 Landfall

- 6.3.1 Through a wider exercise which also included the routing of the Offshore Export Cables and marine constraints, prospective landfall sites have been reviewed along the eastern Aberdeenshire coast. This was informed by Geographic Information System analysis, site visits, taking into account ground suitability, access for TJBs and environmental constraints. Analysis initially focussed on a range of potential landfalls in order to cover a number of GCP possibilities ranging from north Aberdeenshire (Peterhead area) to the south (Fetteresso Forest, Fiddes or further south at Tealing). Landfall options also included locations at Newburgh, St Fergus and Cruden Bay.
- 6.3.2 SSEN originally identified a GCP connection point at Fiddes. However, owing to ongoing site selection processes, SSEN has now identified the Hurlie Substation site, within the Fetteresso Forest. The selection of Landfall at Benholm, was identified during the TWP Fiddes substation exercise and was confirmed as being most suitable.
- 6.3.3 Consideration of landfall options and nearshore cable routing has been undertaken in parallel in order to provide a holistic analysis of options, that are robust and in line with Schedule 4 of the EIA Regulations in relation to the consideration and assessment of alternatives. There remain precise location options in the vicinity of Benholm for the Landfall, but all are generally centred within this area to the south of Gourdon.
- 6.3.4 Ultimately the Benholm Landfall area was identified as the preferred Landfall search area option owing to the proposed GCP. Benholm remained the more preferred Landfall option despite the GCP moving from Fiddes to Hurlie. This is a result of the limited constraints from an onshore and nearshore perspective at Benholm. In addition, the absence of any specific environmental designations to be navigated. Similarly, there were comparably less constraints in terms of third party infrastructure, archaeology and terrain factors which would need to be addressed through the other potential options.

- 6.3.5 The work to date has assisted in defining the current Landfall search area at Benholm to the south of Gourdon. Further selection and analysis will be undertaken and inform the EIA and planning stages.

7 Land Use, Agriculture and Public Access

7.1 Introduction

- 7.1.1 This section of the Onshore Scoping Report identifies the land use, agriculture and public access receptors of relevance to the Proposed Development and considers potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.
- 7.1.2 This section sets out the approach to the assessment of impacts on these topics, including Land Capability for Agriculture (LCfA) and potential prime agricultural land, together with agricultural soils and agricultural land holdings, including crofts and forestry enterprises. In addition, the potential impacts on public access including Public Rights of Way (PRoW) and other recreational resources, including shorelines and other areas of open space being used for recreation are considered. The assessment of peat resources is addressed in Section 12: Geology and Ground Conditions, and the assessment of recreation in terms of social and economic benefit is discussed in Section 17: Socio-Economics, Tourism and Recreation.

7.2 Planning Policy and Legislation

- 7.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The legislation of particular relevance to the assessment of land use, agriculture and public access includes the Land Reform (Scotland) Act 2003 – ‘right to roam’. The relevant policy is set out below.
- 7.2.2 Scotland’s NPF4 has been adopted to provide national planning policy and strategy as part of the development plan NPF4 contains strategic policies to ‘*promote sustainable and liveable places*’.
- 7.2.3 Alongside NPF4, the ALDP (Aberdeenshire Council, 2023) is of relevance to the Proposed Development. The ALDP aims to:
- Create an area with a high quality of life and distinctive places and where new developments are designed as effectively as possible to improve this;
 - Create an area where natural and cultural heritage are protected and enhanced. It is stated that ‘*Aberdeenshire provides important assets for the City Region and Scotland as a whole. Our policies insist that all development must give an appropriate level of protection to internationally, nationally and locally designated sites of built heritage, archaeological and environmental importance. They must also use any opportunities to improve the natural and built environment as a whole*’.
 - Specifically in relation to protecting Resources (Section 12), policy outlines that there will be a presumption against developments that have a negative effect on important environmental resources associated

with air quality, the water environment, important mineral deposits, prime agricultural land, peat and other carbon rich soils, open space, and important trees and woodland. In all cases development which impacts on any of these features will only be permitted when public economic or social benefits clearly outweigh any negative effects on the protected resource, and there are no reasonable alternative sites.

- Prime Agricultural Land is defined as classes 1, 2 and 3.1 of the Soil Survey for Scotland, Land Capability for Agriculture series. Land falling within this classification should not be developed unless it is essential, allocated in the Local Development Plan or an independent assessment of the site confirms a lesser quality of land. For clarity, time-limited proposals for renewable energy generation or mineral extraction may be acceptable on prime agricultural land providing the site will be restored and returned to its original status. In addition, small-scale development proposals that are directly linked to a rural business may be permissible where they are located on prime agricultural land.

7.3 Study Area

7.3.1 The Land Use, Agriculture and Public Access Study Area encompasses all land within the Scoping Boundary.

7.3.2 All PRoW within the Scoping Boundary and linked routes that may be affected as a result of the Proposed Development are also considered. In addition, where known, farm holdings that may be affected by the Proposed Development are also included in the Land Use, Agriculture and Public Access Study Area.

7.3.3 The Land Use, Agriculture and Public Access Study Area, will be reviewed and modified, if necessary, in response to refinements that may be made to the design of the Proposed Development and/or additional environmental and/or design constraints identified during the EIA process.

7.4 Data Sources

7.4.1 The baseline data that will be used to inform the land use, agriculture and public access assessment will be gathered from sources identified in Table 7.1.

Table 7.1: Land Use, Agriculture and Public Access Data sources

Data Source	Dataset Relevance
British Geological Survey (BGS) Geoindex British Geological Survey (2019)	Geological setting to agricultural land
Soil Map of Scotland Partial Cover (Scotland Soil Maps, 2022)	Agricultural soil types affected by the Proposed Development
Land Capability for Agriculture Partial Cover (Scotland Soil Maps, 2016)	Land Capability of land affected by the Proposed Development

Data Source	Dataset Relevance
Aberdeenshire Council PRoW mapping (Aberdeenshire Council, 2024)	Core paths affected by the Proposed Development
The Crofting Register (Crofting Register, 2024)	Locations of crofts potentially affected by the Proposed Development
Scottish Government Agricultural Statistics	Agricultural land use context
Aerial Photography - Google Earth Pro	Agricultural and forestry land use within the Proposed Development
Ordnance Survey mapping 1:25,000	Location of agricultural and recreational assets
Mearns Forest Management Plan	Ongoing management of forest.

7.5 Baseline Environment

- 7.5.1 The majority of the land within the Land Use, Agriculture and Public Access Study Area comprises agricultural land, used mainly for arable purposes, except in the northernmost area which is forested (Fetteresso Forest). There are no registered crofts (small areas of land traditionally situated in the Highlands and Islands where normally the tenant of the croft pays rent to a landlord) within the Land Use, Agriculture and Public Access Study Area.
- 7.5.2 The soils within the Land Use, Agriculture and Public Access Study Area as shown on Figure 7.1 are primarily a collection of soils (mainly mineral podzols, brown soils and mineral gleys) developed in the mapped glacial till and glacial deposits superficial geology except in areas identified to comprise peat, alluvium and raised marine deposits.
- 7.5.3 The Land Capability for Agriculture (Figure 7.2) shows the Land Use, Agriculture and Public Access Study Area to comprise a mix of higher quality prime agricultural land (Class 3.1) with lower quality non-prime agricultural land (Class 3.2), with some Class 4.1 and 5.1 (also lower quality non-prime agricultural land) in northernmost areas.
- 7.5.4 There is no definitive map of rights of way in Aberdeenshire, but a limited number of core paths are identified, mainly in the southernmost area adjacent to the coast with some immediately north of Drumlithie.
- 7.5.5 The national cycle route also runs along the coastal area and will be taken into account. Those receptors within the Land Use, Agriculture and Public Access Study Area are shown on Figure 7.3.
- 7.5.6 There is an outdoor activity centre (Sup2summit) located on the coast within the Land Use, Agriculture and Public Access Study Area.
- 7.5.7 Fetteresso Forest, present in the northernmost area where the Substation is to be located, is a predominantly commercial coniferous woodland (5,810.45 ha in size), which according to The Woodland Trust is popular with

walkers, mountain bikers and horse riders. Deer, foxes and birds of prey can be spotted and visitors are definitely encouraged here. Current management of the forest will be considered during preparation of an appropriate forest management plan for the Proposed Development.

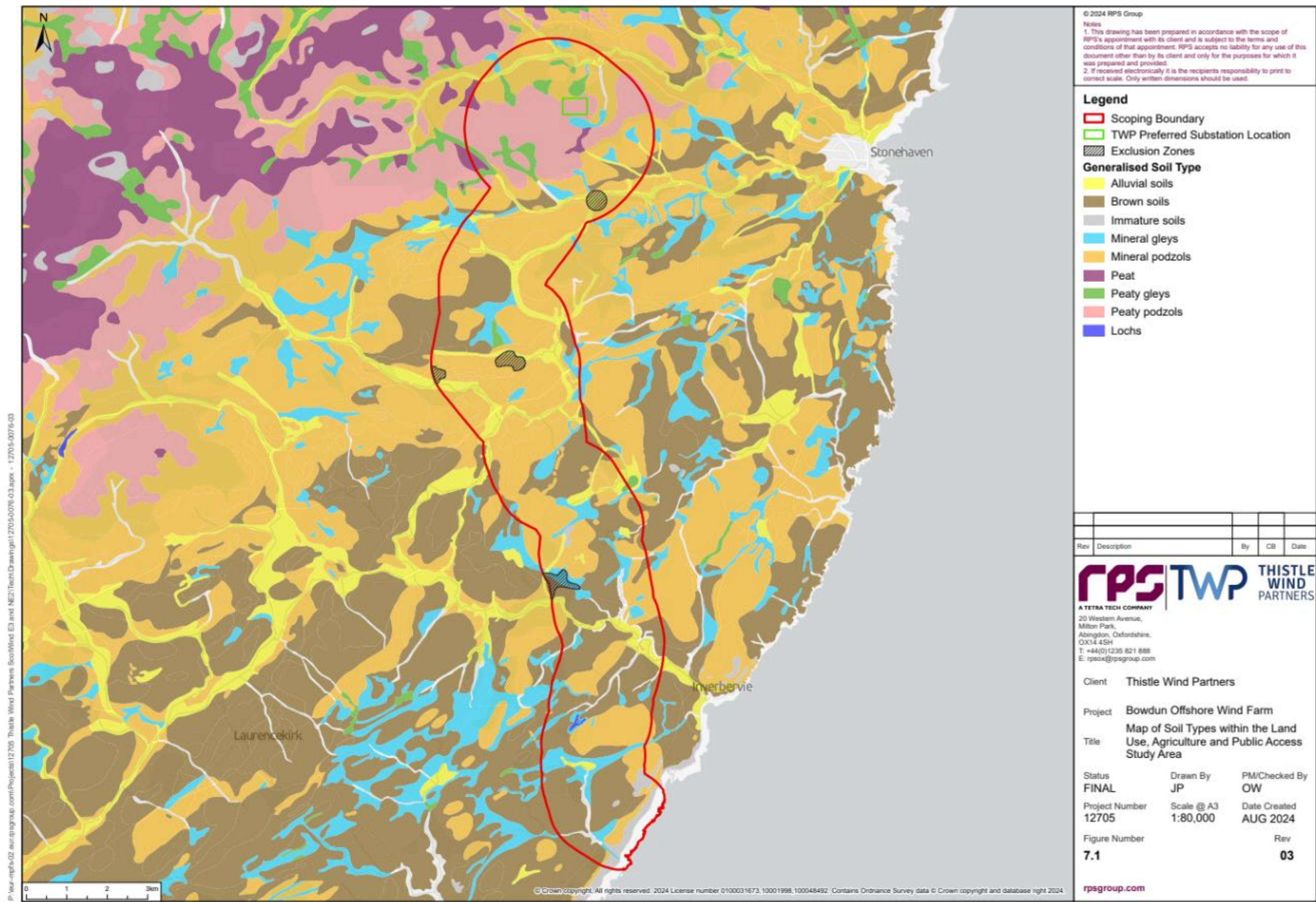


Figure 7.1: Map of Soil Types within the Land Use, Agriculture and Public Access Study Area

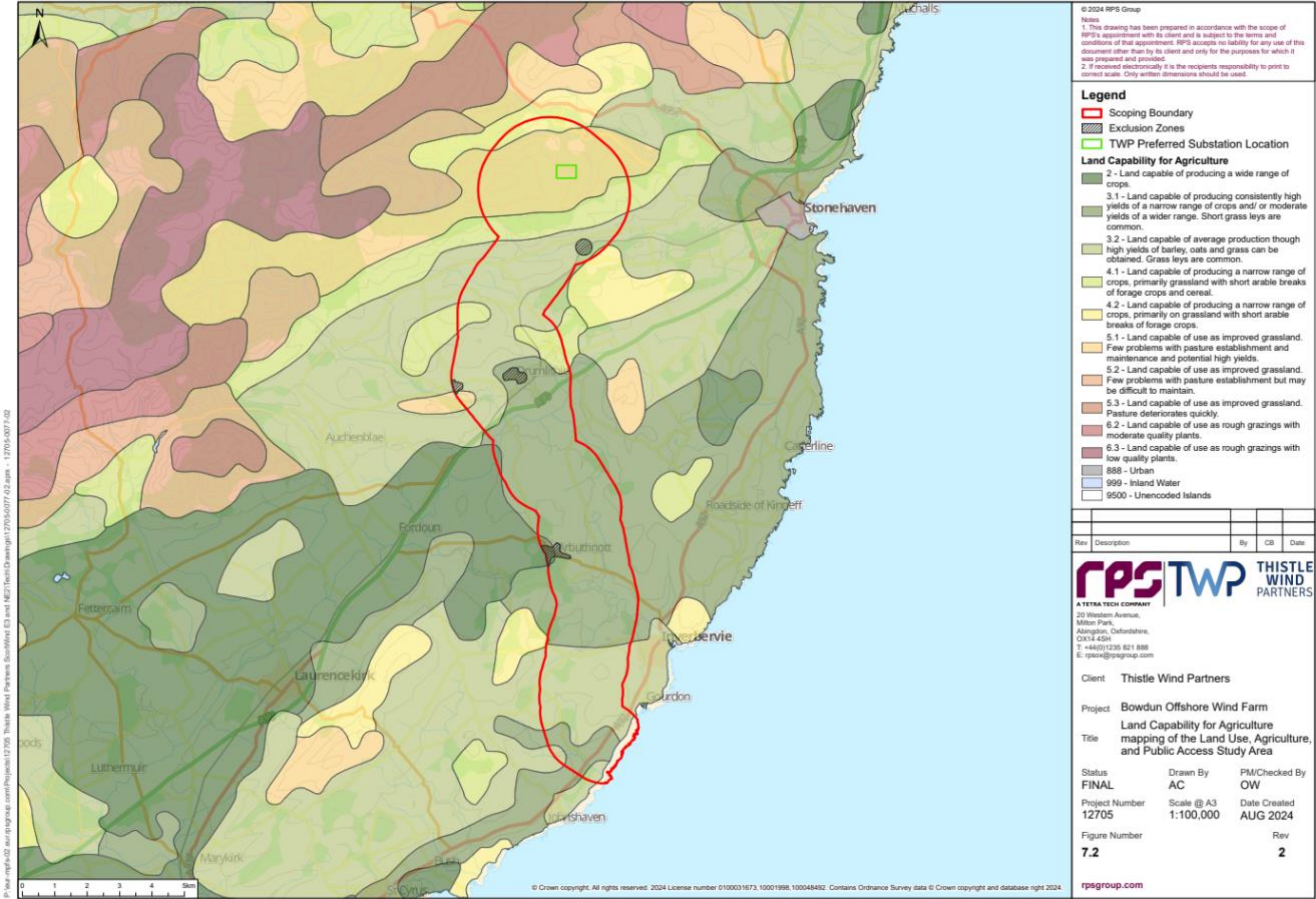


Figure 7.2: Land Capability for Agriculture within the Land Use, Agriculture and Public Access Study Area

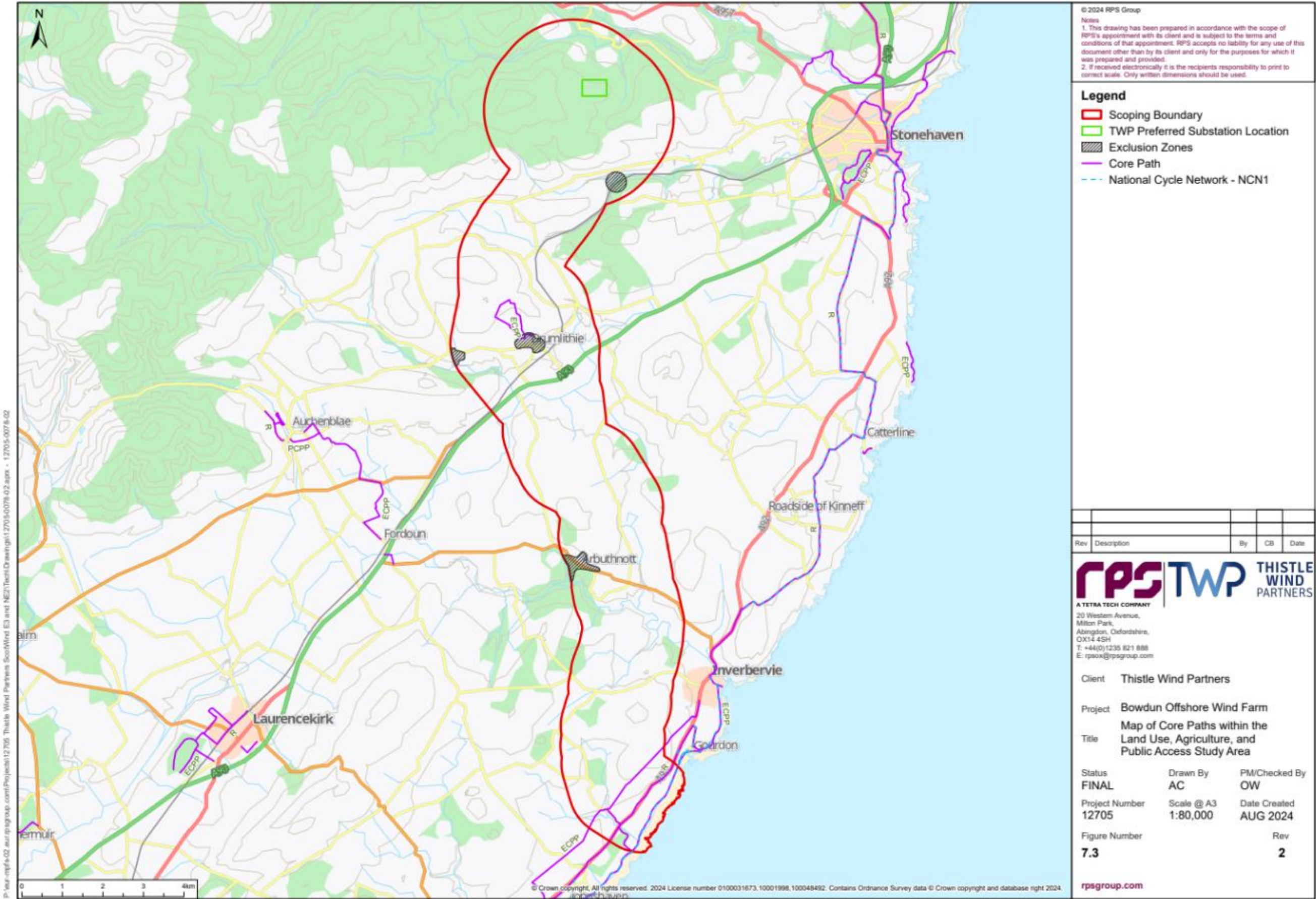


Figure 7.3: Map of Core Paths within the Land Use, Agriculture and Public Access Study Area

Future Baseline Conditions

- 7.5.8 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic. In particular consideration of the Forestry Design Plan and discussions with Forestry Land Scotland will inform the assessment.

7.6 Embedded Mitigation

- 7.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 7.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 7.6.3 The development will seek to avoid key land uses including common land, known recreational resources and any land used for defence purposes or land allocated for residential development within the Local Development Plan (ALDP, 2023) (Paragraph 3.4.3).
- 7.6.4 The following embedded mitigation are relevant to land use, agriculture and public access. This is in addition to the overarching Design Principles as outlined in Section 3.4.
- If prime agricultural land can't be avoided, a Soil Management Plan (SMP) will be required.
 - The land affected by construction in the Cable Corridor will be restored to its existing use and condition, or better, as far as practicable.
 - The CEMP, CTMP, Dust Management Plan (DMP), Surface Water Drainage Plan, SWMP and Forest Management Plan (FMP) will all contain measures that will avoid or mitigate potential impacts on land use, agriculture and public access.
 - The CTMP will seek to maintain continuous access as far as possible on highways and private access routes (including agricultural accesses). Any temporary closure and/or diversions of highways, public footpaths or private accesses during the construction or decommissioning will be agreed in consultation with the local authority and/or landowners, together with the appropriate traffic management measures.
 - Where appropriate, soil management measures will be included in a CEMP that will reduce, as far as possible, impacts on soil resources during construction and decommissioning. Measures relating to the management of peat resources are addressed in Section 12: Geology and Ground Conditions.
 - Where appropriate, measures for the management of core paths and other public access routes during construction will be included in a CEMP that will reduce, as far as possible, impacts on the public access network during construction.

- 7.6.5 Where the Offshore Export Cable would be brought onshore at the Landfall, construction vehicles will require access to the shoreline. The core path which runs adjacent to the coast might be temporarily affected. Traffic management measures would be put in place in the CEMP and CTMP to maintain access along the path at this location but there may be limited periods when this is not possible e.g., when cable ducts and/or cables are actually being installed. Any proposed closures or diversions will be agreed in consultation with Aberdeenshire Council. Should any significant periods of closure be required, a diversion route will be provided.

7.7 Potential Proposed Development Impacts

- 7.7.1 A range of potential impacts on land use, agriculture and public access receptors have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 7.7.2 The impacts that have been scoped into the assessment are outlined in Table 7.2 together with a description of any additional data collection (e.g. site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 7.7.3 Potential impacts scoped out of the assessment are presented in Table 7.3, with justification.

Table 7.2: Potential impacts proposed to be Scoped In – Land Use, Agriculture and Public Access

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Agricultural land and soils (excluding peat)	✓	x	✓	Loss of agricultural land (much of which is prime) and soils during the construction and decommissioning phases of the Proposed Development.	Desk top appraisal, together with potential site survey data available from Geology and Ground conditions study (Section 12, Geology and Ground Conditions).	Assessment of potential loss and disturbance to agricultural land and soils during construction and decommissioning. Identification of soil handling and restoration requirements for relevant soil types.
Agricultural land holdings	✓	✓	✓	Potential for loss and severance of land as a result of the Proposed Development.	Farm holding information.	Identification of potential effects on individual farm holdings and the wider framework of holdings and agricultural productivity within the Land use, Agriculture and Public Access Study Area.
Public access: Public rights of way and access routes	✓	x	x	Potential for disruption to core paths and public access routes as a result of the Proposed Development.	Desk top sources.	Assessment of potential physical effects on public access networks including core paths during construction.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Public access: Recreational resources	✓	x	x	Potential for disruption to recreational assets including the coast, areas of open space, community land and other recreational assets including the commercial Fetteresso Forest.	Desk top sources.	Assessment of potential physical effects on public access to the relevant resources during construction.
Commercial Forestry	✓	✓	✓	Potential disruption to forestry operations through land take and potential impact upon planting/felling cycles.	Desk top sources. Liaison with Forestry operators.	Management and impacts on the forest will be considered during the preparation of an appropriate Forest Management Plan for the Proposed Development.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D))

Table 7.3: Potential impacts proposed to be Scoped Out – Land Use, Agriculture and Public Access

Potential Impact	Justification
Impacts on soil resources during operation	The impacts on soils would occur during periods when site works are being undertaken. No works would be undertaken during the operational period. If required emergency remediation (e.g., cable failure) would be addressed in accordance with a soil management plan avoiding significant impacts.
Public access: Impacts on PRoW and public access routes during operation and decommissioning	Disruption to these assets would be during the main period of construction of the Proposed Development. Although there would be some works associated with the decommissioning period, these would not be expected to be disruptive to these assets as it is assumed the cables would be left in situ. Therefore, it is proposed to scope out effects on these resources during operation and decommissioning.
Public access: Impacts on recreational resources during operation and decommissioning	Disruption to these assets would be during the main period of construction of the Proposed Development. Although there would be some works associated with the decommissioning period, these would not be expected as extensive or disruptive to these assets as it assumed that the cables would be left in situ.

7.8 Proposed Assessment Methodology

- 7.8.1 A desk based study will be undertaken to identify the baseline location and characteristics of land use, agriculture and public access receptors within the Land Use, Agriculture and Public Access Study Area. This will be informed further by:
- data collected for the assessment of Geology and Ground Conditions of this Onshore Scoping Report in relation to peat resources (Section 12: Geology and Ground Conditions);
 - land holding data and information collated by the land agents to TWP on the nature of holdings affected by the Proposed Development;
 - consultation with relevant stakeholders including SEPA and Aberdeenshire Council; and
 - review of appropriate Forest Management Plans for the area.
- 7.8.2 The methodology for the assessment will consider the magnitude of impact and sensitivity of the receptors to assess the significance of effects. The assessment will be based on the methodology used in the Design Manual for Roads and Bridges (DMRB) LA 109 Geology and Soils; and LA 112 Population and Human Health. This guidance although aimed at transportation projects is also relevant and applicable to linear projects

seeking to assess the impacts on the quality of agricultural land according to the Land Capability for Agriculture system in Scotland and in relation to effects on public access and recreational assets.

7.9 Potential Inter-Relationships

7.9.1 The assessment of potential inter-relationships will be informed by relevant conclusions from other topics within the Onshore EIA Report. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There are potential inter-relationships with other topics, for example:

- Section 10: Landscape and Visual Impact Assessment:
 - Impacts on PRoW during the construction and operational phases of the Proposed Development in regard to impacts on views from such networks.
- Section 15: Traffic and Transport:
 - Public access to recreational resources may be disrupted by additional vehicle movements on the road network during construction of the Proposed Development.
- Section 17: Socio-economics, Tourism and Recreation, and Section 10: Landscape and Visual Impact Assessment:
 - There may be a reduction in the appeal, enjoyment and accessing of recreational areas as a result of the Proposed Development which relates to public access and any disruption or deviation of such.

7.10 Potential Cumulative Effects

7.10.1 There is the potential for cumulative effects on the land use, agriculture and public access receptors which may arise from the construction, operation and maintenance, and decommissioning of the Proposed Development together with other developments.

7.10.2 Detailed consideration will be given to the relevant developments along with publicly available information on construction times and periods. In addition, the development locations, locations of construction works and existing mitigation measures for land use assets.

7.10.3 The proposed approach to the assessment of cumulative effects is set out in Section 4.5.

7.11 Summary of Proposed Scope

7.11.1 A desktop study identifying the nature of land use, agriculture and public access receptors will be undertaken. The collection of baseline data for the assessment will be supported by data from the geology and ground conditions topic data collection in relation to peat. As well as data from the

land agent provided to TWP in relation to land holdings and information provided by relevant stakeholders on public access routes.

- 7.11.2 The assessment of likely significant effects will be undertaken in accordance with the methodology and guidance outlined in Section 7.8.
- 7.11.3 The Proposed Development will include embedded mitigation measures which will include necessary soil management measures to address, as far as practicable, impacts on soil resources during construction and decommissioning. The embedded mitigation measures will also include the required management measures to maintain public access routes during the construction period.
- 7.11.4 The scoping exercise has concluded that because of potential effects on agricultural land, farm holdings and soils during construction and decommissioning and the effects on public access receptors during construction that the assessment of these should be scoped into the Onshore EIA Report.

8 Biodiversity and Terrestrial Ecology

8.1 Introduction

- 8.1.1 This section of the Onshore Scoping Report identifies the biodiversity and terrestrial ecology receptors of relevance to the Proposed Development and considers potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.
- 8.1.2 Owing to the distinct characteristics of ornithology compared to ecology within the onshore context, both are addressed separately in this report. The scope of the assessment for terrestrial ornithology is set out in Section 9: Terrestrial Ornithology.
- 8.1.3 As is outlined within Section 3.4, there will be an approach across the entirety of the Proposed Development to enhance biodiversity as a result of the proposals. This approach, as directed through Policy 3 of NPF4, will seek biodiversity enhancement and will form a key principle of the proposed design, through conservation, restoration and enhancement. Works will be undertaken so that the environment is left in a demonstrably better state than prior to the commencement of the Proposed Development.

8.2 Planning Policy and Legislation

- 8.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of biodiversity and terrestrial ecology is set out below.
- Protection of Badgers Act 1992 (as amended);
 - Wildlife and Natural Environment (Scotland) Act 2011 (WANE);
 - Electricity Act 1989;
 - Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) ('Habitats Directive');
 - The Conservation (Natural Habitats &c) Regulations 1994 (as amended) ('The Habitats Regulations');
 - The Wildlife and Countryside Act 1981 (as amended);
 - The Nature Conservation (Scotland) Act 2004 (as amended);
 - The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2012;
 - The Conservation of Habitats and Species (Amendment) Regulations 2017, relating to reserved matters in Scotland;
 - Environmental Impact Assessment Directive 2014/52/EU;
 - The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017;
 - Planning Advice Note 60: Planning for Natural Heritage;

- Planning Advice Note 1/2013-Environmental Impact Assessment, Revision 1.0;
- ALDP 2023;
- NPF4; and
- Scottish Biodiversity Strategy.

8.3 Study Area

8.3.1 The assessment of Biodiversity and Terrestrial Ecology will follow relevant species-specific survey guidance from NatureScot (set out in Table 8.1). It will include searches up to 250 m either side of the Planning Application Boundary (depending on species). An assessment of the suitability of habitats to support each of the above species will be completed together with habitat suitability assessment for reptiles, amphibians, and bats.

Table 8.1: Approach to ecological studies

Species	Approach
Badger	Searches shall be carried out across suitable habitat within a minimum of up to 100m of the Development in accordance with: • NatureScot Standing advice for planning consultations – Badgers (2024)
Otter	Searches shall be carried out across suitable habitat within a minimum of up to 200m of the Development in accordance with: NatureScot Standing advice for planning consultations – Otter (2024)
Pine Marten	Searches shall be carried out across suitable habitat within a minimum of up to 250m of the Development in accordance with: NatureScot Standing advice for planning consultations – Pine Marten (2024)
Wildcat	Searches shall be carried out across suitable habitat within a minimum of up to 50m of the Development in accordance with: NatureScot Standing advice for planning consultations – Red squirrel (2024)
Water vole	Searches shall be carried out across suitable habitat within a minimum of up to 200m of the Development in accordance with: NatureScot Standing advice for planning consultations – wildcats (2024)
Fish Habitat Assessment and Freshwater Pearl Mussel (FWPM) Habitat Survey	It is currently anticipated that all watercourse crossings would be via trenchless means e.g. HDD with appropriate stand-off distances from the watercourse. Given in water works are not required Fish Habitat and FWPM surveys are not proposed at this stage. Should the design evolve to require in water works then the EIA would cover waterbodies that flow into and out of the development Scoping Boundary and ultimately the Planning Application Boundary as appropriate (including all access routes within this area), assigning a geographic value to each

Species	Approach
	watercourse/receptor and providing information on the suitability or not of these receptors in relation to support populations of fish and FWPM. The habitat survey would aim to establish impacts upon aquatic habitats and then to assist in shaping the design of the proposed development and relevant mitigation. Of particular relevance would be connections into specific waterbodies, such as the Bervie Water.
UK Hab Survey	A UK Habitat Classification (UKHab) survey will be done within the cable corridor to comprehensively classify habitats. It will be done instead of the traditional Phase 1 habitat survey, as it provides for more detailed classification of habitats in the UK. The UK Habitat Classification is used to categorise habitats and record their condition and distinctiveness against set criteria, making it directly transferable for use within DEFRA's Biodiversity Net Gain (BNG) metric. UKHab results will also be used to determine the potential presence of Ground Water Dependent Ecosystems, and the needs for follow up surveys or assessments to ensure compliance with SEPA Guidance Note 31 Version 3 (2017). Although the survey can be undertaken at any time of year, the optimum period is between April –October, therefore, the UKHab Survey will be undertaken within the Survey Area between August and September 2024.
Intertidal Benthic Habitats	The intertidal benthic habitats in this area will be characterised by walkover surveys in the littoral zone from MHWS to approximately MLWS. The methodology used will sample vertical transects of the entire zone at 200 m intervals and will have regard to the following guidance: • The Handbook for Marine Intertidal Phase 1 Biotope Mapping Survey (Wyn <i>et al.</i>, 2006); • The Procedural Guidance No 3-1 in situ Biotope Recording (Wyn and Brazier, 2001); • The Joint Nature Conservation Committee (JNCC) Marine Monitoring Handbook (Davies <i>et al.</i>, 2001); and • Marine Nature Conservation Review: Rationale and methods. Coasts and seas of the United Kingdom (Hiscock, 1996). The transects will sample the shoreline between MHWS and as close to MLWS as possible, covering the strandline, upper shore, mid shore, and lower shore zones. The survey will be conducted at low tide to maximise access to the lower shore. Where possible, four quadrats per shore area will be sampled and photographed to support the assessment of effects and a visual walkover will be recorded along each transect (where the terrain allows) and quadrats will be used to provide quantitative assessment of algal coverage and epifaunal assemblages. In

Species	Approach
	sedimentary areas, dig-overs will be conducted, and the contents sieved to assess any epifaunal assemblages within the sand.

Designated sites

- 8.3.2 Figure 8.1 shows designated sites in relation to the Scoping Boundary. There are no designated sites within the Scoping Boundary. The EIA will consider all statutory sites designated under international conventions or European legislation, including of particular relevance to terrestrial ecology SACs and Ramsar sites, within a 10 km radius of the Planning Application Boundary. Sites of Special Scientific Interest (SSSIs) will be identified within 5 km of the Planning Application Boundary. Areas of Ancient Woodland within the Planning Application Boundary will be identified also.
- 8.3.3 Within the Scoping Boundary there is a Local Nature Conservation Site (LNCS) as outlined in the ALDP at Arbuthnott (see Figure 8.1). The Arbuthnott LNCS lies along the Bervie Water and supports valuable semi-natural woodland and riparian habitats. A good diversity of woodland and wetland plants are present with locally important species such as blue waterspeedwell. Potential impacts will be assessed as it falls within 50 m of the Scoping Boundary. However, it sits within the constraints area, as shown in Figure 1.3 and will therefore be considered where relevant.

8.4 Data Sources

- 8.4.1 A detailed desk-based data-gathering exercise shall be undertaken to obtain existing information relating to relevant ecological features, including statutory and non-statutory biodiversity sites, habitats and species of principal importance, legally protected and controlled species and other conservation notable species.
- 8.4.2 Baseline data on the nature conservation interest of the site and its surroundings (up to 2 km from the Planning Application Boundary) will be sought from a range of sources including (but not limited to):
- NatureScot - records of protected and sensitive species, including designated features of relevant statutory sites.
 - North East Scotland Biological Records Centre - records of habitats and species that are of note.
 - JNCC website;
 - Multi Agency Geographic Information for the Countryside (MAGIC) website;
 - National Biodiversity Network (NBN) Gateway; and
 - Relevant Geographic Information System databases (for Scottish Wildlife Trust (SWT) Reserves and woodland recorded on the Ancient Woodland Inventory (AWI)), the local District Salmon Fisheries Board, Scottish Squirrel Survey website and local natural history groups.

- 8.4.3 Relevant information will include designated nature conservation sites. Statutory designated sites include nationally designated SSSIs. Non-statutory designated sites include Sites of Importance for Nature Conservation (SINCs), Local Wildlife Sites, Scottish Wildlife Trust (SWT) Reserves, SWT Wildlife Sites and woodland listed on the AWI), protected species records and habitats/species listed on the Scottish Biodiversity List (SBL).
- 8.4.4 The Biodiversity and Terrestrial Ecology assessment will also consider ecological features outside the identified 2 km search area, where there is potential ecological connectivity.

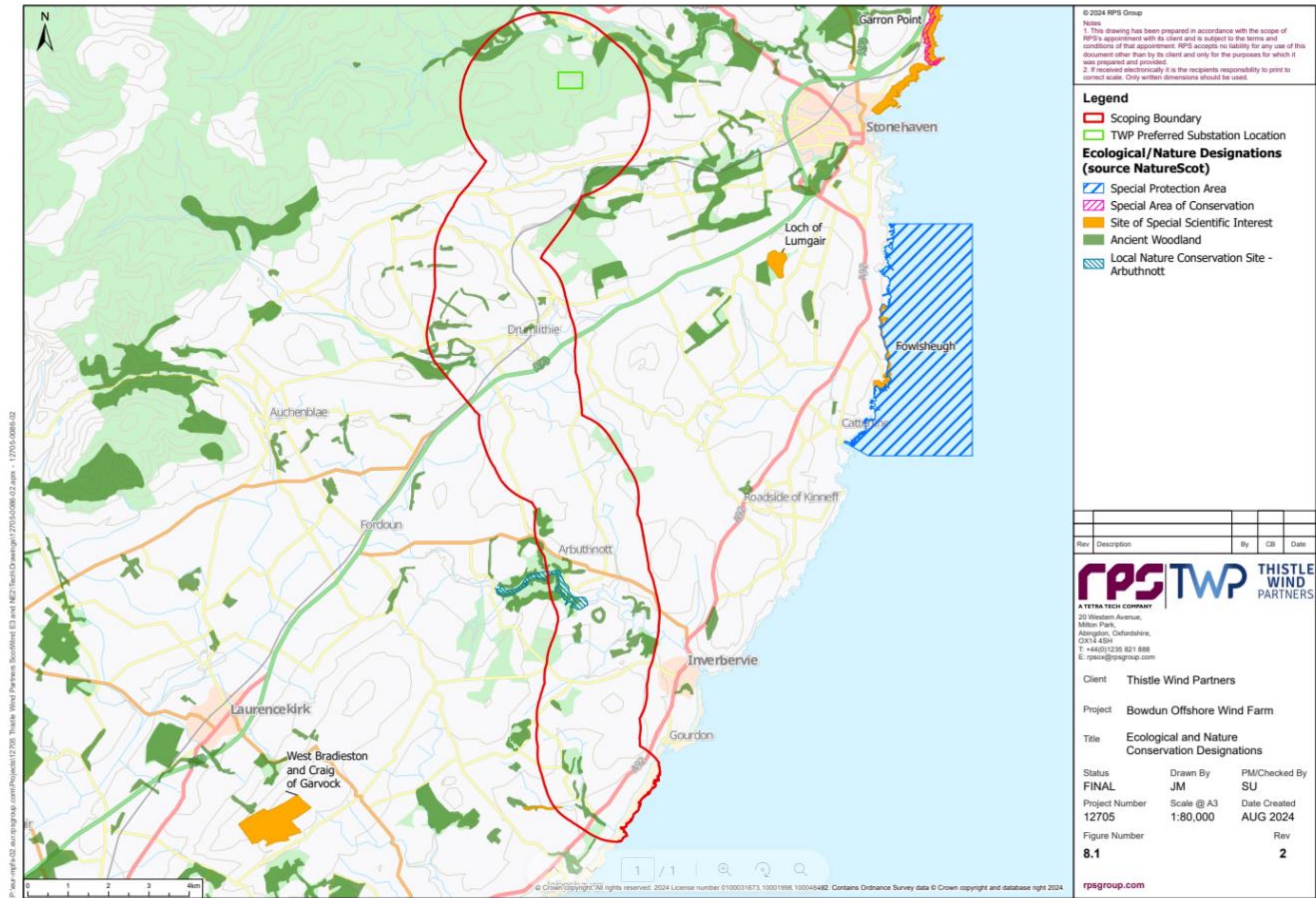


Figure 8.1: Ecological and Nature Conservation Designations

8.5 Baseline Environment

- 8.5.1 The Onshore EIA Report will set out the baseline based on the review of desktop data sources and survey work, focussing on the key designations and receptors.
- 8.5.2 There are no designated sites within the Scoping Boundary however, there is a LNCS at Arbuthnott. Paragraph 8.3.3 details this LNCS and as it sits within the constraints area, as shown in Figure 1.3 it will be considered where relevant.
- 8.5.3 Based on habitat presence and protected species records, appropriate survey will work be undertaken to better inform potential impacts and relevant mitigation steps. It is anticipated that the environment, while largely agricultural in nature, will provide suitable habitat for the species covered above.
- 8.5.4 The intertidal area in the Landfall zone is largely composed of a rock platform with loose rock/boulders.
- 8.5.5 In addition, the following species of interest, listed on the Scottish Biodiversity List or elsewhere, have been recorded in the North East Scotland Biological Records Centre within the Scoping Boundary. The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. These records have informed the methodology. The relevance of these records to the Proposed Development will be evaluated further in the desk study when the Planning Application Boundary is defined.

Table 8.2: Species of Interest

Phylum	Species	Name	Status
Insect - Moth	<i>Hemaris tityus</i>	Narrow-bordered bee hawk moth	Scottish_Biodiversity_List
Insect - Moth	<i>Acronicta rumicis</i>	Knot grass	Scottish_Biodiversity_List
Insect - Moth	<i>Hydraecia micacea</i>	Rosy rustic	Scottish_Biodiversity_List
Insect - Moth	<i>Agrochola litura</i>	Brown-spot pinion	Scottish_Biodiversity_List
Insect - Butterfly	<i>Coenonympha Pamphilus</i>	Small Heath	WaCA 1981, Scottish_Biodiversity_List
Terrestrial Mammal	<i>Sciurus vulgaris</i>	Eurasian red squirrel	WaCA-Schedule 5, - Schedule 6, Scottish_Biodiversity_List

Phylum	Species	Name	Status
Terrestrial Mammal	<i>Meles Meles</i>	Eurasian Badger	Bern Convention Appendix 3, Pbact 1992 Badger Act 1992, WANE Act 2011
Terrestrial Mammal	<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	Habitats Directive, Appendix; Waca-Schedule 5, Scottish_Biodiversity_List
Terrestrial Mammal	<i>Lepus Europaeus</i>	Brown Hare	Scottish_Biodiversity_List
Terrestrial Mammal	<i>Erinaceus Europaeus</i>	West European Hedgehog	Scottish_Biodiversity_List
Terrestrial Mammal	<i>Martes martes</i>	Pine Marten	WaCA 1981 Scottish_Biodiversity_List
Terrestrial Mammal	<i>Felis Silvestris</i>	Wildcat	Habitats Directive Schedule 2 Scottish_Biodiversity_List
Terrestrial Mammal	<i>Lutra lutra</i>	Eurasian Otter	Habitats Directive Schedule 2 Scottish_Biodiversity_List

Future Baseline Conditions

- 8.5.6 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic.

8.6 Embedded Mitigation

- 8.6.1 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 8.6.2 The requirement for and feasibility of mitigation measures will be consulted upon with statutory consultees throughout the EIA process. This is expected to include the use of a CEMP and associated fencing plan which should enable steps to be taken to minimise interactions between protected species and active construction sites. Furthermore, awareness will be had of any ecological impacts resulting from the removal of forestry and indeed with regard to replanting. It is noted that biodiversity enhancement and compensatory planting are separate entities and this will be taken account of in any future designs and proposals.
- 8.6.3
- 8.6.4 The following embedded mitigation is relevant to Biodiversity and Terrestrial Ecology. This is in addition to the overarching Design Principles as outlined in Section 3.4.

- Site design to minimise loss and damage to important sheltering, breeding and/or foraging sites used by protected species.
- Site design to minimise modification, loss and damage to GWDTEs and priority habitats.
- Good practice measures during construction, and compliance with relevant legislation protecting all protected species and sensitive habitats as well as measures to avoid pollution.
- Additional steps including awareness of species pathways across or through sites, mammal ledges along watercourses, delineation of waterbodies, covering steep sides excavations at night/non work periods, capping of pipes and methods to reduce noise and vibration during construction.

8.7 Potential Proposed Development Impacts

- 8.7.1 A range of potential impacts on biodiversity and terrestrial ecology receptors have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 8.7.2 The impacts that have been scoped into the assessment are outlined in Table 8.3 together with a description of any additional data collection (e.g., site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 8.7.3 Potential impacts scoped out of the assessment are presented in Table 8.4, with justification.

Table 8.3: Potential impacts proposed to be Scoped In – Biodiversity and Terrestrial Ecology

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Temporary disturbance or permanent modification/loss to GWDTEs and other priority habitats	✓	x	✓	GWDTE habitats may be present along the proposed route. There is potential for such habitats to be modified or lost due to construction.	Desktop study and site-specific surveys. Habitats of particular value and sensitivity will be identified by their inclusion on Annex I of the EU Habitats Directive (European Union, 2022), their status as potential GWDTEs according to SEPA (2017), their status as ancient woodland (NatureScot, 2022) or their inclusion on the SBL (NatureScot, 2020) together with an overall assessment of their replaceability and sensitivity based on professional judgement.	Identify GWDTEs and other priority habitats. Where likely significant adverse effects are identified, appropriate mitigation will be outlined, through design as outlined in Paragraph 8.6.1, to avoid and/or minimise the effects.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Temporary or permanent disturbance/displacement, permanent modification/loss to foraging, sheltering and breeding sites for protected species	✓	x	✓	Protected species are likely to be present along the proposed route, these include: • badger; • otter; • pine marten; • red squirrel; • reptiles and amphibians; • bat species; • water vole; • Scottish Wildcat and; • fish.	Desktop study and protected species surveys using appropriate survey guidance and buffers.	Identify protected species foraging, sheltering and breeding sites. Where likely significant adverse effects are identified, appropriate mitigation will be outlined to avoid and/or minimise the effects.
Indirect impacts due to accidental pollution and/or contamination of habitats as well as habitats used by onshore ecological receptors	✓	x	✓	Sensitive GWDTEs/priority habitats and protected species and their foraging, resting/breeding habitats, may potentially be affected by accidental contamination or pollution during construction and decommissioning.	N/A	Implement embedded mitigation measures, ensure compliance with relevant legislation and avoid potential contamination or pollution incidents, and minimise potential effects on habitats and protected species.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

Table 8.4: Potential impacts proposed to be Scoped Out – Biodiversity and Terrestrial Ecology

Potential Impact	Justification
Operational impacts from the Onshore Export Cable on population-level effect for terrestrial protected species	As the Onshore Export Cables would be underground, operational maintenance is expected to be of limited scale (both spatially and temporally), there is not considered to be any potential for population-level effects on any terrestrial protected species.
Operational impacts on habitats of low ecological value	All habitats which are of low ecological value e.g., amenity grassland/arable are not considered to be significantly affected by the Proposed Development and therefore are scoped out of further assessment.
Operational impacts on statutory designated sites >10 km	Assessment of statutory designated sites (which have a qualifying ecological feature) that are located outwith 10 km of the Proposed Development are scoped out, due to lack of connectivity between the designated site and the Proposed Development.

8.8 Proposed Assessment Methodology

- 8.8.1 Data obtained through the onshore ecological desktop study and site-specific surveys will be used to inform the EIA, the methodology of these are Table 8.3. This will consider the likely significant direct, indirect and cumulative effects that the construction, operation and decommissioning of the Proposed Development could have on identified important ecological receptors scoped into the assessment.
- 8.8.2 The methods and results will be detailed within the Biodiversity, Terrestrial Ecology and Onshore Ornithology chapter of the Onshore EIA Report. The chapter will be supported by technical appendices that will include details of the desktop study and site-specific survey methods and results.
- 8.8.3 Effects on ecological receptors will be assessed in relation to the species' reference population, conservation status, range and distribution. The assessment of potential effects will follow guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) and NatureScot (2018b). The assessment will assume that all embedded mitigation measures will be fully implemented.

8.9 Potential Inter-Relationships

- 8.9.1 The assessment of potential inter-relationships will be considered within the Biodiversity and Terrestrial Ecology Onshore EIA Report Chapter. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There are potential inter-relationships with other topics, for example:
- Section 10: Landscape and Visual Impact Assessment:

- Areas of native planting used to integrate the Proposed Development into its setting would give greater variety and provide increased biodiversity and habitat. All existing hedgerows, woodland and individual trees are to be retained where possible and shall be protected during the construction phase in accordance with BS:5837 2012 'Trees in relation to design, demolition and construction – Recommendations'. The assessment on ecological receptors will be led by the ecologists.
- Section 13: Air Quality:
 - Dust deposition during construction and decommissioning of the Proposed Development may have an impact on biodiversity and terrestrial ecology due to the presence of an LNCS within the Air Quality Study Area. The risk of dust impacts on ecological receptors will be assessed.
- Section 14: Noise and Vibration:
 - Noise and vibration emissions generated during construction and of the Proposed Development may impact sites designated for nature conservation and protected habitats and species within the Noise and Vibration Study Area.

8.9.2 There is the potential for dust and air emissions, or pollution to watercourses to have impacts upon ecological receptors, however it is anticipated that these can be addressed via the successful implementation of embedded mitigation measures.

8.10 Potential Cumulative Effects

- 8.10.1 Where there is potential for effects on ecological receptors resulting from the Proposed Development to make a material contribution to cumulative effects from other surrounding developments, a quantitative desktop assessment will be completed in line with NatureScot (2018a) guidance to assess potential effects on relevant receptors. At this stage, it is not possible to identify potential cumulative impacts with complete certainty, but it is considered likely that they would include potential modification, and/or disturbance/displacement of relevant important ecological receptors. Of key relevance are the projects to build a new Transmission substation at Hurlie in Fetteresso Forest (SSEN, 2024a) as well as additional projects that require connection into the grid at this point. Consideration may also be necessary for impacts arising from construction activities relating to onshore wind farms in the vicinity.
- 8.10.2 The proposed approach to the assessment of cumulative effects is set out in Section 4.5 where the range of likely cumulative developments is considered.

8.11 Summary of Proposed Scope

- 8.11.1 The scoping exercise has concluded that because of potential ecological effects arising from the Proposed Development during the construction, operational and decommissioning phases that a Biodiversity and Terrestrial Ecology Chapter should be scoped into the Onshore EIA Report.
- 8.11.2 However, operational impacts will not occur as a result of the buried cable, as such operational impacts on habitats of low-ecological impacts and operational impacts on statutory designated sites (which have a qualifying ecological feature) that are located out with 10 km will be scoped out of the Onshore EIA Report. As the EIA progresses, decommissioning impacts will be assessed and therefore, cannot be scoped out of the Onshore EIA Report at this stage owing to the relative uncertainty with regard to potential impacts at this future stage.

9 Terrestrial Ornithology

9.1 Introduction

- 9.1.1 This section of the Onshore Scoping Report describes the approach for identifying ornithological receptors of relevance to the Proposed Development and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed scope and methodology for the assessment.
- 9.1.2 In this section, it should be noted that the Scoping Boundary (Figure 1.3) encompasses the area landward of MLWS. Therefore, the terrestrial ornithology assessment includes the intertidal area, above MLWS, at the Landfall.
- 9.1.3 Owing to the distinct characteristics of ornithology compared to ecology within the onshore context, both are addressed separately in this report. The scope of the assessment for Biodiversity and Terrestrial Ecology is set out in Section 8: Biodiversity and Terrestrial Ecology.

9.2 Planning Policy and Legislation

- 9.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of terrestrial ornithology is set out below.
- Planning Advice Note 60: Planning for Natural Heritage (Scottish Government, 2020);
 - Planning Advice Note 1/2013-Environmental Impact Assessment, Revision 1.0 (Scottish Government, 2013);
 - Directive 2009/147/EC on the Conservation of Wild Birds ('Birds Directive');
 - The Wildlife and Countryside Act 1981 (as amended) ; and
 - The Nature Conservation (Scotland) Act 2004 (as amended).

9.3 Pre-Application Advice

- 9.3.1 The pre-application response from Aberdeenshire Council noted the work already done to date and referred to the extant NatureScot advice and feedback on the ornithology survey campaign for the development so far, confirming an agreement with the scope of surveys.

Consultation with NatureScot regarding Onshore Ornithology Survey Methods

- 9.3.2 In addition to seeking pre-application advice from Aberdeenshire Council, NatureScot were consulted in February 2024 regarding the proposed survey methods for the Terrestrial Ornithology surveys.

- 9.3.3 In their response (via email in March 2024), NatureScot commented that the scope and methodology for the surveys is generally acceptable. However, they highlighted that their usual recommendation is that two years of surveys are completed for this type of project, unless it can be demonstrated that a shorter period is sufficient. They further commented that they would be happy to look at the results of the year one data, once this is available, to confirm whether a second year is necessary. Additionally, NatureScot recommended that goose foraging surveys should be continued for the remainder of the spring 2024 season. Surveys commenced in September 2023 and continued until mid-May 2024.

9.4 Study Area

Terrestrial Ornithology Survey Areas

- 9.4.1 Within the Scoping Boundary, the proposed Terrestrial Ornithology survey areas and bird surveys will be defined as follows:
- The foraging goose survey area was based on the Substation search area (Figure 1.3) and the Cable Corridor, which will be decided as the EIA progresses, plus a 500 m buffer (i.e., a 1 km cable route survey corridor width).
 - The intertidal/nearshore survey was based on the Landfall area and a surrounding 250 m buffer.
- 9.4.2 The above boundaries and corridors were presented to and agreed with NatureScot as referenced in Section 9.3 above.

Terrestrial Ornithology Desktop Study Search Area

- 9.4.3 The Terrestrial Ornithology desktop study search areas are based on the onshore infrastructure and the following buffer areas;
- 20 km for statutory sites designated for wintering geese;
 - 10 km for statutory sites designated for other ornithological features;
 - 2 km for records of breeding/roosting target bird species from relevant organisations listed in Section 9.5; and
 - 2 km for non-statutory sites of ornithological importance.
- 9.4.4 These search areas are based on standard survey areas in NatureScot (2017) guidance and core foraging ranges of SPA species (NatureScot 2016), thus facilitating a robust assessment of sensitive species within potential disturbance buffers and statutory sites with potential connectivity to the Proposed Development.

9.5 Data Sources

Terrestrial Ornithology Desktop Study

- 9.5.1 A search has been completed for statutory sites of ornithological importance within the desktop study search areas specified in Section 9.4. Relevant existing datasets within these search areas will be identified as

part of a detailed Terrestrial Ornithology desktop study. Potential sources of desktop study data are listed in Table 9.1.

Table 9.1: Terrestrial Ornithology data sources

Data Source	Dataset
NatureScot	Information on statutory sites of ornithological importance.
	Records of protected and sensitive species, including designated features of relevant statutory sites.
North East Scotland Raptor Study Group	Records of breeding and roosting raptor species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and/or the Birds Directive.
RSPB	Records of protected and sensitive bird species.
BTO	Records of protected and sensitive species, including designated features of relevant statutory sites.
Aberdeenshire Council and Energy Consents Unit planning portals	Relevant onshore ornithology reports and EIA sections for operational, consented and proposed developments in the surrounding area, where available.
Forestry and Land Scotland (FLS)	Relevant information on ancient woodland sites.
SSEN	Relevant information on Hurlie substation.

Site-specific Terrestrial Ornithology Surveys

- 9.5.2 In addition, site-specific Terrestrial Ornithology surveys were completed during the 2023/24 non-breeding season. Survey methods are detailed below, and survey areas are described in Section 9.4.
- 9.5.3 Note that breeding bird surveys are not currently proposed. Records of breeding species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and Annex I of the Birds Directive will be requested from relevant sources (listed in Table 9.2) as part of the desktop study. Additionally, to ensure compliance with legislation, pre-construction surveys and nest checks will be completed where any works are proposed during the breeding season.

Foraging Goose/Whooper Swan Surveys (September 2023 to mid-May 2024)

- 9.5.4 Based on NatureScot guidance ‘Assessing Connectivity with Special Protection Areas (SPAs)’ (2016), the Proposed Development lies within the core foraging range for greylag and pink footed goose populations associated with the Montrose Basin SPA and Ramsar site, which lies 14.7km from the Proposed Development. In accordance with NatureScot (2017) guidelines, surveys for foraging only need to be undertaken when the survey

area lies within known goose feeding areas (see Mitchell, 2012). As the study by Mitchell et al (2012) showed that some of the feeding areas of foraging pink-footed geese from the Montrose Basin SPA were close to the Proposed Development, foraging goose surveys were completed between September 2023 and mid-May 2024. In relation to greylag geese, the Mitchell study states that the SPA no longer supported internationally important numbers of this species. Accordingly the focus of the surveys was pink-footed geese, although, observations of any greylag geese were also recorded.

- 9.5.5 The methods were based on NatureScot (2017) guidance, with driven transects completed twice per month to map and count flocks of SPA species present within the survey area. Although the surveys focused on recording SPA species, foraging wader flocks or other notable species (such as large gull flocks or Schedule 1/Annex 1 raptor species) were recorded during the surveys.

Intertidal/Nearshore Surveys (September 2023 to March 2024)

- 9.5.6 Surveys for intertidal/nearshore birds have been undertaken throughout the non-breeding season, from September 2023 to March 2024. The surveys are based on a modified version of the non-estuarine coastal waterfowl survey methods (described in Gilbert *et al.*, 1998), with twice-monthly diurnal surveys completed between September and March (inclusive), one centred on high tide and another on low tide, to count and map waders and other waterbirds present within the survey area. The surveys involved walking through the survey area, counting birds on the littoral zone and nearshore area from suitable VP locations, before walking back through the survey area and counting birds on the landward section. The surveys focus on recording waders and aggregations of other species, such as wildfowl and gulls. As the survey area is relatively small in length it was not proposed to divide it into sections.

9.6 Baseline Environment

- 9.6.1 This section sets out a high-level overview of the baseline Terrestrial Ornithology based on an initial review of desktop data sources.

Designated Sites

- 9.6.2 Two European sites of ornithological importance (one of which, Montrose Basin, is also designated as a Ramsar site) have been identified within the Terrestrial Ornithology desktop study search areas (defined in Section 9.4). These are summarised in Table 9.2 and shown in Figure 9.1. These sites are also designated as SSSIs.

Table 9.2: Summary of designated sites of ornithological importance within the Terrestrial Ornithology desktop search areas

Site Name	Designation	Distance from Study Area	Qualifying ornithological features
Fowlsheugh	SPA	6.6 km	SPA breeding populations of: Fulmar (<i>Fulmarus glacialis</i>) Guillemot (<i>Uria aalga</i>), Herring gull (<i>Larus argentatus</i>), Kittiwake (<i>Rissa tridactyla</i>), Razorbill (<i>Alca torda</i>) and Seabird assemblage.
Fowlsheugh*	SSSI	6.6 km	Designated for the same features as the SPA, and also breeding Puffin (<i>Fratercula arctica</i>) and breeding Seabird colony.
Montrose Basin	SPA	14.7 km	SPA non-breeding populations of: Dunlin (<i>Calidris alpina alpina</i>), Eider (<i>Somateria mollissima</i>), Greylag goose (<i>Anser anser</i>), Knot (<i>Calidris canutus</i>) and Oystercatcher (<i>Haematopus ostralegus</i>), Pink-footed goose (<i>Anser brachyrhynchus</i>), Redshank (<i>Tringa tetanus</i>), Shelduck (<i>Tadorna tadorna</i>), Waterfowl assemblage and Wigeon (<i>Anas penelope</i>).
Montrose Basin	Ramsar site	14.7 km	Designated for the same features as the SPA, and additional non-avian ecological features.
Montrose Basin**	SSSI	14.7 km	Breeding population of Eider, non-breeding population of Mute swan (<i>Cygnus olor</i>) and non-avian ecological features.

* A component of Fowlsheugh SPA

** A component of Montrose Basin SPA

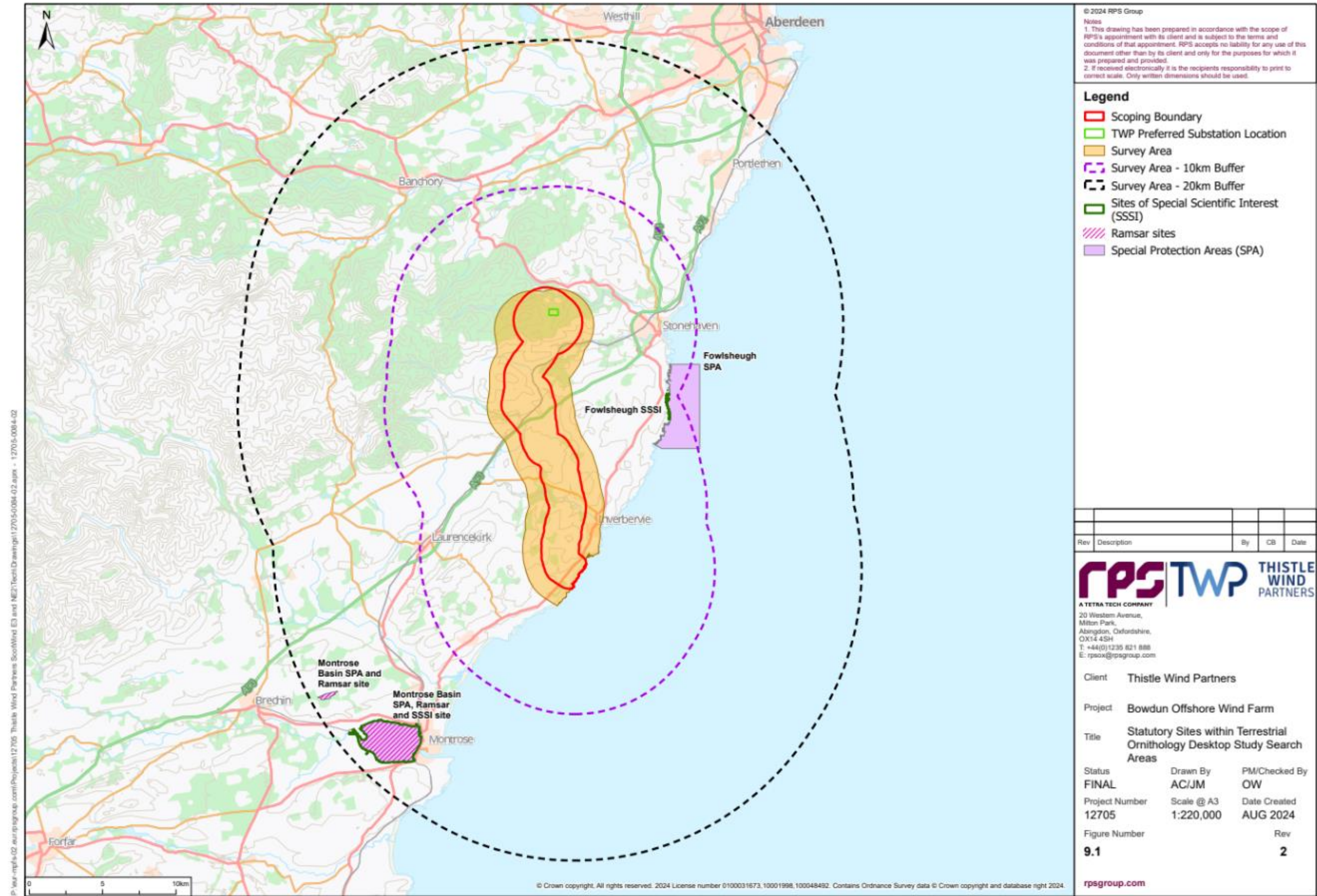


Figure 9.1: Statutory Sites within Terrestrial Ornithology desktop study search area

Bird Species

- 9.6.3 Based on the location of the Proposed Development and habitats present, it is anticipated that qualifying interests of the Montrose Basin SPA, in particular goose species, will forage within the Terrestrial Ornithology Study Area during the non-breeding season.
- 9.6.4 Review of Mitchell (2012) found that feeding sites for SPA geese are largely found south of the Proposed Development, between Laurencekirk and the Lunan Water, with only a very small number of outlying areas located in proximity to the Proposed Development.
- 9.6.5 Although large flocks of foraging pink-footed goose have been regularly recorded during the surveys from October 2023 until March 2024, the majority of these recordings have been outside of the Scoping Boundary in certain fields surrounding the area and/or beyond the 20 km buffer of the Montrose Basin SPA. Peak counts were up to 2,000 birds. March recordings showed lower numbers as geese would have been dispersing to their summer breeding grounds. These recordings were outside of the Scoping Boundary in neighbouring agricultural fields.
- 9.6.6 The extent of intertidal habitat present within the intertidal/nearshore survey area is limited and is not anticipated to support notable numbers of non-breeding waders or other waterfowl. However, numerous groups of birds have been recorded during the intertidal surveys between September 2023 and March 2024 throughout the survey area scattered in the north, south and middle of the site and the relevant 250 m buffer area. Numerous species of waders, (e.g.; oystercatcher, curlew (*Numenius arquata*), redshank and purple sandpiper (*Calidris maritima*) were noted throughout the survey period. Observations generally comprised small numbers of birds but occasional large flocks (>100 birds) of some species such as lapwing and gull were recorded.
- 9.6.7 All qualifying interest species of the Montrose Basin SPA are non-breeding birds. Eider are the only qualifying interest species of the relevant designated sites, i.e. Montrose Basin SSSI that may occur during the breeding season. However, given that the Terrestrial Ornithology study area and Proposed Development is located inland, and the majority of habitat is agricultural land, it is unlikely to be suitable for breeding Eider which forage on water. Therefore, it is considered unlikely that qualifying features of the Montrose Basin SPA and SSSI will make regular use of the Scoping Boundary for foraging.
- 9.6.8 Fowlsheugh SPA is located 6.6km east of the Proposed Development, however as this is designated for seabird species only, and the Proposed Development is inland, no LSEs are predicted.
- 9.6.9 In light of the above, it is anticipated that Likely Significant Effects (LSE) can be ruled out for all SPA species, with the exception of Montrose Basin SPA goose species. Whilst LSEs cannot be entirely ruled out at this stage,

Adverse Effects (AEs) on the SPA goose population will be avoided through site design and if required mitigation.

- 9.6.10 In order to ensure compliance with the Habitat Regulations, HRA Screening exercise will be undertaken. HRA is the process by which competent authorities consider whether a plan or project could affect a European site; this is required under The Conservation (Natural Habitats, &c.) Regulations 1994 ('Habitats Regulations').

Future Baseline Conditions

- 9.6.11 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic.

9.7 Embedded Mitigation

- 9.7.1 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- The following embedded mitigation is relevant to terrestrial ornithology. This is in addition to the overarching Design Principles as outlined in Section 3.4. Site design to minimise loss and damage to important breeding and/or foraging sites used by receptors identified as Important Ornithological Features (IOFs); and
 - Good practice measures during construction to ensure compliance with relevant legislation protecting breeding birds (including those not identified as IOFs), as well as measures to avoid pollution. These measures will be detailed within a Breeding Bird Protection Plan, which will be a supporting document to the CEMP.
- 9.7.2 If the Ornithological Impact Assessment (OIA) identifies potential impacts from the Proposed Development that are likely to have a significant adverse effect on IOFs, mitigation measures will be refined where appropriate to address these.
- 9.7.3 If following design finalisation HRA screening cannot scope out LSEs, mitigation measures will be proposed and detailed with a Shadow Appropriate Assessment, as necessary, to avoid adverse effects, for example, sympathetic construction timing to avoid disturbance to feeding geese.

9.8 Potential Proposed Development Impacts

- 9.8.1 A range of potential impacts on terrestrial ornithological receptors, including the intertidal area at the Landfall, have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 9.8.2 The impacts that have been scoped into the assessment are outlined in Table 9.3 (below) together with a description of any additional data

collection (e.g. site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.

- 9.8.3 Potential impacts scoped out of the assessment are presented in Table 9.4 with justification.

Table 9.3: Potential impacts proposed to be Scoped In – Terrestrial Ornithology

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Temporary or permanent loss of or modification to habitats used by onshore ornithological receptors (including the Landfall)	✓	x	✓	Habitats used by roosting, foraging and/or breeding birds may be lost or modified due to construction and/or decommissioning of the Proposed Development.	Desktop study and site-specific surveys.	Identify areas used by important populations of roosting, foraging and/or breeding birds and assess likely significant effects during each phase of the Proposed Development in relation to the species' reference population, conservation status, range and distribution. Where likely significant adverse effects are identified, appropriate mitigation will be outlined to avoid and/or reduce the effects.

Onshore Scoping Report, Bowdun Offshore Wind Farm

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Accidental disturbance of nesting birds and/or damage or destruction of nests and/or eggs	✓	x	✓	All breeding birds and their nests/eggs are afforded protection and may be accidentally disturbed, damaged or destroyed during construction and/or decommissioning of the Proposed Development.	Desktop study and pre-construction.	Identify breeding territories of species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and, where works are to be carried out during the breeding season, identify whether any other breeding species are present. Implement embedded mitigation measures to ensure compliance with relevant legislation and avoid disturbance to breeding Schedule 1 - listed species.
Temporary or permanent disturbance/displacement of onshore ornithological receptors (including the Landfall)	✓	x	✓	Roosting, foraging and/or breeding birds may be disturbed and potentially displaced due to noise and/or visual disturbance during construction and decommissioning.	Desktop study and site-specific surveys.	As above.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Indirect impacts due to accidental pollution and/or contamination of habitats used by onshore ornithological receptors	✓	x	✓	Habitats used by roosting, foraging and/or breeding birds may be affected by accidental contamination or pollution during construction and/or decommissioning of the Proposed Development.	N/A	Implement embedded mitigation, ensure compliance with relevant legislation and avoid potential contamination or pollution incidents and reduce any likely significant effects on habitats.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

Table 9.4: Potential impacts proposed to be Scoped Out – Terrestrial Ornithology

Potential Impact	Justification
Operational impacts	As the Onshore Export Cables would be underground and any operational maintenance is expected to be of limited scale (both spatially and temporally) there is not considered to be any potential for population-level effects on any terrestrial bird species.
Collision risk	As the Onshore Export Cables would be underground with no overhead lines proposed, there is no risk of collision to birds.
Potential impacts affecting the Fowlsheugh SPA	It is proposed that potential impacts affecting the Fowlsheugh SPA are scoped out of the onshore assessment based on the qualifying interest species, as all are breeding seabird species and are not expected to make regular use of the Scoping Boundary for foraging. As such, there is not considered to be any pathway for effects between the Proposed Development site and the SPA. Potential impacts on the Fowlsheugh SPA from the offshore elements of the Project will be assessed in the Offshore EIA Report that will subsequently accompany the Offshore Section 36 and Marine Licence application(s) for the Project.
Potential impacts affecting passerines (except breeding passerines listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)) and species of low conservation concern (i.e., Green-listed species that are not included on Schedule 1 of the Wildlife and Countryside Act or Annex I of the Birds Directive)	With the exception of accidental nest destruction and killing or injury of breeding birds' eggs or young, which would be managed through application of embedded mitigation (Section 9.7), these species are typically considered to be at low risk from effects associated with impacts from the Proposed Development. Consequently, it is proposed that they are scoped out of the impact assessment.

9.9 Proposed Assessment Methodology

- 9.9.1 Data obtained through the terrestrial ornithology desktop study and site-specific surveys will be used to inform an OIA. This will consider the likely significant direct, indirect and cumulative effects that the construction and decommissioning of the Proposed Development could have on any identified IOFs scoped into the assessment.
- 9.9.2 The CIEEM (2018) guidance states that the importance of an ecological feature should be considered within a defined geographical context. It is therefore proposed that each ornithological feature will be assigned to one of the following categories of importance:

- International;
- National;
- Regional;
- Local; and
- Less than local.

- 9.9.3 Statutory sites and species evaluated as being of Regional or higher importance will be identified as IOFs, while those of Local or lower importance will not be identified as IOFs and will be scoped out of the OIA.
- 9.9.4 The methods and results will be detailed within the Terrestrial Ornithology Onshore EIA Report Chapter, which will be supported by a technical appendix that will include details of the desktop study and site-specific survey methods and results.
- 9.9.5 Effects on IOFs will be assessed in relation to the species' reference population, conservation status, range and distribution. The assessment of potential effects will follow guidelines published by CIEEM (2018) and NatureScot (2018b). The assessment will assume that all embedded mitigation measures outlined in Section 9.7 will be fully implemented. If the OIA identifies any potential impacts from the Proposed Development that are predicted to have a significant adverse effect on IOFs, mitigation measures will be detailed within the ornithology section to address these.
- 9.9.6 CIEEM (2018) guidance avoids and discourages use of the matrix approach to determine significance and describes only two categories: "significant" or "not significant". In line with this guidance, it is proposed that use of matrices in the OIA will be avoided and any effect that could threaten the integrity of a statutory site designated for ornithological features or the favourable conservation status of a bird population, will be defined as significant. Where this is not the case, effects will be defined as not significant.

9.10 Potential Inter-Relationships

- 9.10.1 The assessment of potential inter-relationships will be considered within the Terrestrial Ornithology Onshore EIA Report Chapter. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There are potential inter-relationships with other topics, for example:
- Section 7: Land Use, Agriculture and Public Access:
 - Effects on land use, including agriculture and commercial forestry, due to construction of the Proposed Development could affect the extents and/or quality of habitats used by IOFs. Any effects on public access and land management could also affect IOFs due to changes in levels of anthropogenic disturbance.
 - Section 8: Biodiversity and Terrestrial Ecology:

- Loss or damage of habitats during construction of the Proposed Development may impact IOFs due to loss of nesting, roosting and foraging sites.
- Section 10: Landscape and Visual Impact Assessment:
 - Areas of native planting used to integrate the Proposed Development into its setting would provide increase diversity of habitats for some breeding, foraging and roosting bird species such as passerines. All existing hedgerows, woodland and individual trees are to be retained where possible.
- Section 14: Noise and Vibration:
 - Noise and vibration emissions generated during construction (including construction traffic on local highway networks) and operation and maintenance of the Proposed Development may impact IOFs.
- Section 15: Traffic and Transport:
 - Disturbance generated due to additional vehicle movements on the road network during construction of the Proposed Development may impact IOFs.
- Section 19: Water Quality and Flood Risk:
 - The contamination of surface water receptors within the Terrestrial Ornithology Study Area for the Proposed Development during the construction of the Proposed Development may impact water dependent sites designated for conservation, which could support protected or notable species.

9.11 Potential Cumulative Effects

- 9.11.1 Where there is potential for effects on ornithological receptors resulting from the Proposed Development to make a material contribution to cumulative effects from surrounding developments, a quantitative desktop assessment will be completed in line with NatureScot (2018a) guidance to assess potential effects on relevant receptors. At this stage, it is not possible to identify potential cumulative effects with any certainty, but it is considered likely that they would be limited to potential disturbance/displacement of relevant IOFs.
- 9.11.2 The proposed approach to the assessment of cumulative effects is set out in Section 4.5.

9.12 Summary of Proposed Scope

- 9.12.1 A terrestrial ornithology desktop study and site-specific surveys (Section 9.5) will be completed to identify the ornithological baseline, which will be used to identify IOFs and inform an assessment of potential effects on those IOFs resulting from each phase of the Proposed Development. The assessment will follow industry-standard guidelines for Ecological Impact

Assessment (EcIA). Without mitigation, potential impacts from the Proposed Development could include disturbance of breeding and foraging birds and the accidental destruction of nests and eggs, and the killing and injury of young birds during the construction works. Appropriate mitigation measures to avoid or reduce any adverse effects to an acceptable level will be outlined.

- 9.12.2 Therefore, the scoping exercise has concluded that because of potential ornithological effects arising from the Proposed Development during the construction, operational and decommissioning phases should be scoped into the Onshore EIA Report.

10 Landscape and Visual Impact Assessment

10.1 Introduction

- 10.1.1 This section of the Onshore Scoping Report identifies the landscape character and visual amenity of relevance to the Proposed Development and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.
- 10.1.2 The purpose of a Landscape and Visual Impact Assessment (LVIA) is to determine, in a transparent way, the likely significant environmental effects on landscape character or visual receptors.

10.2 Planning Policy and Legislation

- 10.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of LVIA is set out below.
- The European Landscape Convention 2006;
 - The Environment Strategy for Scotland (2020);
 - NPF4;
 - Policy 1 (Tackling the climate and nature crises)
 - Policy 4 (Natural Places)
 - Policy 6 (Forestry, Woodland and trees)
 - Policy 29 (Rural Development)
 - Scottish Government, Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989;
 - ALDP (2023);
 - Policy R1 (Special Rural Areas)
 - Policy R2 (Development Proposals Elsewhere in the Countryside)
 - Policy E1 (Natural Heritage)
 - Policy E2 (Landscape)
 - Policy E3 (Forestry and Woodland)
 - Policy HE2 (Protecting Historic, Cultural and Conservation Areas)
 - Policy PR1 (Protecting Important Resources)
 - Policy C2 (Renewable Energy)
 - Guidelines for Landscape and Visual Impact Assessment: Third Addition (GLVIA3) (Landscape Institute and Institute of Environment Management & Assessment) (2013);
 - Landscape Character Assessment guidance for England and Scotland (Carys Swanwick Department of Landscape University of Sheffield and Land Use Consultants for the Countryside Agency and NatureScot) (2002);

- Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot) (2021); and
- Visual Representation of Development Proposals, Landscape Institute Technical Guidance Note 06/19 (Landscape Institute) (2019).

10.3 Study Area

10.3.1 The LVIA Study Area has been considered in relation to the location and the landscape setting of each element of the Proposed Development and is fully contained within the wider Onshore Scoping Boundary illustrated on Figure 10.1. The LVIA Study Area is proposed as follows:

- 3 km radius from the centre of the selected Landfall site;
- 1 km either side of the centre of the proposed cable route; and
- For the Substation a 5 km radius from the selected substation location.

10.4 Data Sources

10.4.1 A detailed Landscape and Visual desktop study will be completed to identify sites of landscape and visual importance within each of the LVIA Study Areas identified in Section 10.3 above.

10.4.2 Potential sources of desktop data are listed in Table 10.1.

Table 10.1: Landscape and Visual data sources

Data Source	Dataset
NatureScot	Information on Landscape Character Areas
NatureScot	Information on Landscape Designations (National Parks, World Heritage Sites, Gardens & Designed Landscapes, Special Landscape Areas and Wild Lands)
Aberdeenshire Council	Information on Special Landscape Areas
Aberdeenshire Council	Information on Core Path Networks

10.5 Baseline Environment

10.5.1 The existing baseline landscape and visual conditions associated with the Proposed Development will be established. This will be done by providing an overview of the landscape character and visual context within which the Proposed Development sits, or which lies immediately adjacent to the Proposed Development.

10.5.2 At this stage, the Proposed Development description is indicative and a PDE approach is outlined (refer to Section 3: Project Description) to allow sufficient flexibility to accommodate future project refinement. The LVIA Study Area covers a broad swathe of land on the coast between Gourdon to the north and Johnshaven to the south and lands inland to the west and southwest of Stonehaven.

10.5.3 It is noted that the LVIA Study Area associated with the Landfall site and the Cable Corridor associated with the Proposed Development include lands associated with the following designations:

- Landfall site;
 - Special Landscape Area – Southeast Aberdeenshire Coast.
- Cable Corridor and Substation;
 - Special Landscape Area – Southeast Aberdeenshire Coast;
 - Historic Garden & Designed Landscape – Arbuthnott House (GDL 00016); and
 - Historic Garden & Designed Landscape – Glenbervie House (GDL 00194).

10.5.4 The Landfall search area is located within Landscape Character Type (LCT) 13 (Raised Beach Coast - Aberdeenshire) (Figure 10.1) between Gourdon and Johnshaven, which is described within the NatureScot National Landscape Character Assessment as being *‘farmland rises gradually from the coast to form a gently sloping apron of land that extends into the more pronounced landform of the Coastal Farmed Ridges and Hills - Aberdeenshire. The distinctive cliffs and rocky edge of the coastline to the north is absent here and the raised beach widens to create a more gentle unison between land and sea’*.

10.5.5 The Cable Corridor is predominantly located within LCT 24 (Coastal Farmed Ridges and Hills - Aberdeenshire), though does cross LCT 22 (Broad Valley Lowlands - Aberdeenshire) and LCT 29 (Summits and Plateaux - Aberdeenshire) (see Figure 10.1). LCT 24 is described as having, *‘an extensive area of broadly rolling farmland and the long, rounded Hill of Garvock as well as the farmland around Glenbervie which lies at the edge of the Highland Boundary Fault.’*

10.5.6 While this LCT is mainly defined by a large scale and open landscape of smoothly rolling ridges and shallow valleys, large fields of arable land and pasture are present. Field patterns within this LCT are influenced by crop patterns rather than field boundaries which are poorly defined. Woodland is sparse, but where trees are present, they add structure to the landscape. LCT 22 comprises the, *‘area known as the “Howe of Mearns”. It forms an extremely broad and gently undulating strath and is an extension of Strathmore in Angus which is classified as the Broad Valley Lowlands - Tayside Landscape Character Type’*.

10.5.7 The site for the Substation is located within LCT 29 (Figure 10.1), on land associated with Fetteresso Forest, to the west of Stonehaven. LCT 29 is described as having a, *‘distinct southern edge which marks the line of the Highland Boundary Fault, a location where the dramatic change from lowland landscape to mountains is most visible, is, however, composed of quartz-mica-schist with intrusions of slate giving rise to steeper slopes. This upland landscape provides a dramatic backdrop and contrast to the expansive low-lying Howe of the Mearns to the south-east. The north-*

eastern foothills, which tumble down to the coast, are less dramatic and form a more gradual transition with surrounding farmland’.

- 10.5.8 It is noted that the lower slopes, within which the Substation is to be located, are extensively forested with coniferous plantation which will restrict the Zones of Theoretical Visibility (ZTV) extent. The PDE associated with the Substation site does not include lands identified as Landscape Designations (National Parks, World Heritage Sites, Gardens & Designed Landscapes, Special Landscape Areas or Wild lands).

Future Baseline Conditions

- 10.5.9 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic.

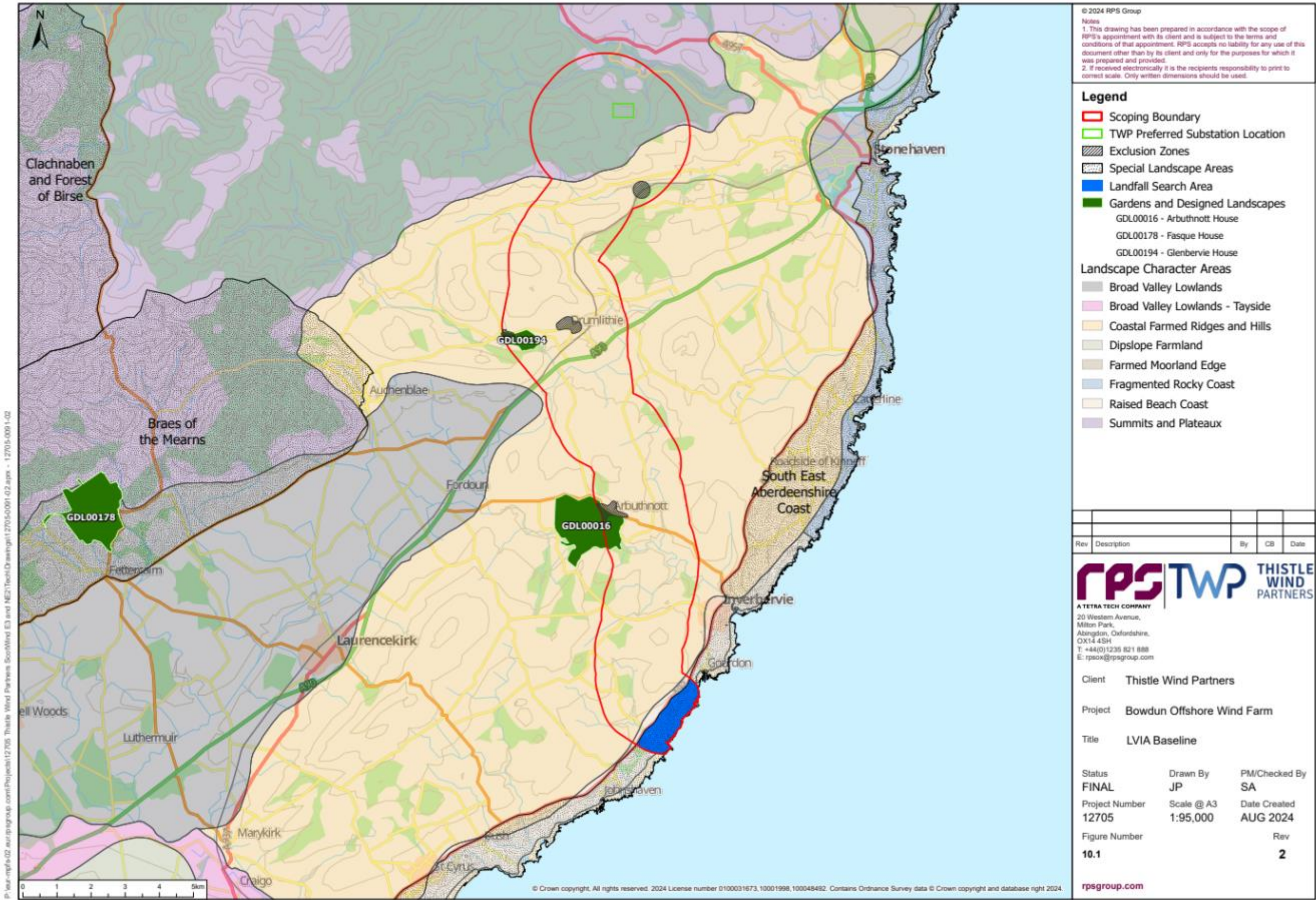


Figure 10.1: LVIA Baseline

10.6 Embedded Mitigation

- 10.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 10.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 10.6.3 The following embedded mitigation is relevant to the LVIA. This is in addition to the overarching Design Principles as outlined in Section 3.4.
- Site design and layout of infrastructure associated with the Landfall site to minimise impact on important features of the landscape character e.g. avoidance of above ground infrastructure.
 - Location of construction compounds associated with Proposed Development elements (Landfall, Cable Corridor and Substation) to be located away from sensitive receptors to minimise visual impact.
 - Site design, layout and screen planting/landscape earthworks (mitigation) associated with the Substation site to minimise and/or reduce the impact on landscape character and visual receptors.
 - Cable Corridor to be routed to avoid/minimise impacts on physical elements of the landscape such as hedgerows and woodland areas, or important habitats.
 - Onshore Export Cable, between Landfall site and onshore substation, to be underground.

10.7 Potential Proposed Development Impacts

- 10.7.1 A range of potential impacts on landscape character and visual resources have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development. For the purposes of this Onshore Scoping Report, those arising because of the decommissioning of the Proposed Development have been considered to be equivalent to or of a lesser impact than the construction phase.
- 10.7.2 For potential visual impacts arising because of the Proposed Development, a range of publicly accessible viewpoints will be used to illustrate; existing (baseline) views, proposed views of the Proposed Development pre mitigation, and proposed views of the Proposed Development post mitigation. A maximum of seven viewpoints are considered appropriate for assessment purposes (Figure 10.2).

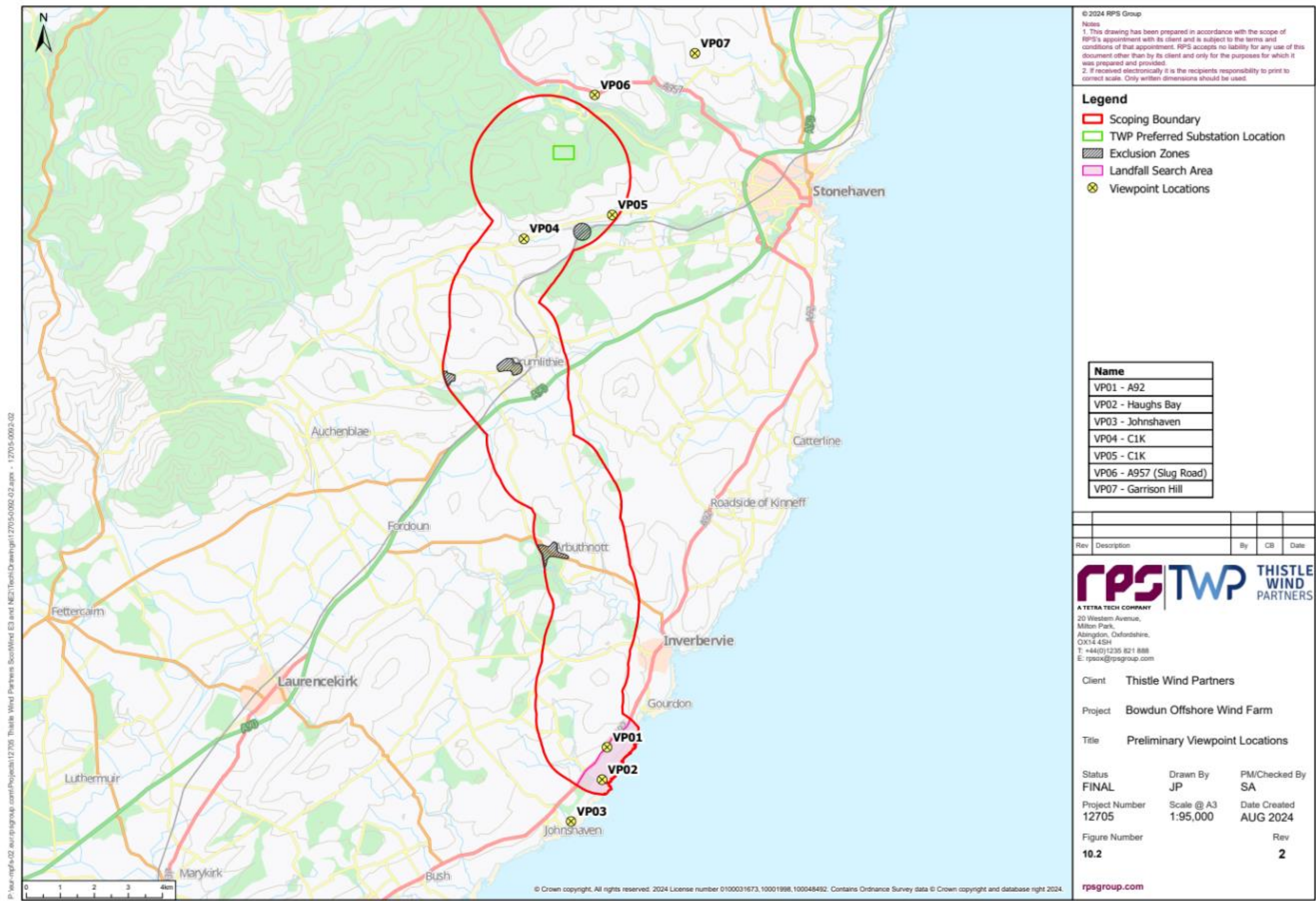


Figure 10.2: Preliminary viewpoint locations

- 10.7.3 As the design for features and elements of the Proposed Development is not finalised, the following suggested viewpoints are provided for discussion purposes and will be refined following production of ZTV mapping for Proposed Development elements;
- Viewpoints illustrating potential visual impacts associated with Landfall site;
 - views north-east/south-west from the A92 (VP01);
 - views from receptors at Haughs Bay (VP02); and
 - north-east views from receptors at Johnshaven (VP03).
 - Viewpoints illustrating potential visual impacts associated with Substation site;
 - views north-east from receptors on local road to south of the substation site (VP04);
 - views north-west from receptors on local road to south of the substation site (VP05);
 - views south from A957 (Slug Road); (VP06) and
 - views south-west from Hill of Garrison (VP07).
- 10.7.4 The impacts that have been scoped into the assessment are outlined in Table 10.2 together with a description of any additional data collection (e.g. site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 10.7.5 Potential impacts scoped out of the assessment are presented in Table 10.3, with justification.

Table 10.2: Potential impacts proposed to be Scoped In – LVIA

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Landfall – Landscape Character Impacts	✓	x	✓	Physical impacts on constituent parts of the landscape character area. Construction and decommissioning operations may result in temporary loss or change to localised area of landscape character.	Desktop study and site-specific surveys.	Landscape character assessment to be undertaken in accordance with current guidance (GLVIA 3). Assessments to be based on final Landfall site location and consider location of temporary construction compound(s).
Cable Corridor – Landscape Character Impacts	✓	x	✓	Physical impacts on constituent parts of landscape character area(s) through which the cable route traverses. Construction and decommissioning operations may result in loss or partial change to localised area of landscape character.	Desktop study and site-specific surveys.	Landscape character assessment to be undertaken in accordance with current guidance (GLVIA 3). Assessment to be based on final onshore cable corridor route and location of temporary construction compound(s).

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Substation – Landscape Character Impacts	✓	✓	✓	Physical impacts on constituent parts of the landscape character area within which this element is located. Landscape impacts arising because of new built form within the landscape during the operational phase. Construction and decommissioning operations may result in loss or change to localised landscape character area.	Desktop study and site-specific surveys.	Landscape character assessment to be undertaken in accordance with current guidance (GLVIA 3). Assessment to be based on final substation design layout and associated embedded mitigation measures.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Landfall – Visual Impacts	✓	x	✓	Physical impacts on constituent parts of the landscape/coastal character within which this element is located. Construction and decommissioning operations may result in loss or change to localised portions. Of the seascape character area.	Desktop study and site-specific surveys.	Visual impact assessment to be undertaken in accordance with current guidance (GLVIA 3). Visual impact to include baseline imagery from selected viewpoints, , with assessment based on the construction stage.
Cable Corridor – Visual Impacts	✓	x	✓	Visual impacts arising as a result of machinery present within the landscape during construction and decommissioning phases. Operational phase impacts scoped out as cables would be underground and no significant visual effects likely.	Desktop study and site-specific surveys.	Visual impact assessment to be undertaken in accordance with current guidance (GLVIA 3) Visual impact to include baseline imagery from selected viewpoints.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Substation – Visual Impacts	✓	✓	✓	Visual impacts arising as a consequence of machinery and earthworks modification during construction and decommissioning phases. Visual impacts arising as a consequence of new built form within the landscape.	Desktop study and site-specific surveys.	Visual impact assessment to be undertaken in accordance with current guidance (GLVIA 3) Visual impact to include baseline imagery from selected viewpoints, with montages produced for operational stage (including embedded mitigation).

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

Table 10.3: Potential impacts proposed to be Scoped Out – LVIA

Potential Impact	Justification
Operational Landscape Impacts – Cable Corridor	As the Onshore Export Cables would be underground and any operational maintenance is expected to be of limited scale, and all removed vegetation fully restored, there is not considered to be any potential for landscape impacts during the operational phase.
Operational Visual Impacts – Cable Corridor	As the Onshore Export Cables would be underground and any operational maintenance is expected to be of limited scale, and all removed vegetation fully restored, there is not considered to be any potential for visual impacts during the operational phase.
Operational Landscape Impacts – Landfall	As the Landfall elements will be underground and any operational maintenance is expected to be of limited scale, and all removed vegetation fully restored, there is not considered to be any potential for landscape impacts during the operational phase.
Operational Visual Impacts – Landfall	As the Landfall elements will be underground and any operational maintenance is expected to be of limited scale, and all removed vegetation fully restored, there is not considered to be any potential for visual impacts during the operational phase.

10.8 Proposed Assessment Methodology

10.8.1 The methodology and approach to the LVIA will be carried out in accordance with best practice guidance described in the following documents;

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (The Landscape Institute and Institute of Environmental Management & Assessment, 2013) (GLVIA3);
- Technical Guidance Note 06/19 Visual Representation of Development Proposals (The Landscape Institute, 2019).

10.8.2 GLVIA3 recommends that an LVIA ‘*concentrates on principles and process*’ and ‘*does not provide a detailed or formulaic ‘recipe’*’ to assess effects, it being the ‘*responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand*’ (preface to the third edition) (The Landscape Institute and Institute of Environmental Management & Assessment, 2013).

10.8.3 The effects on the landscape resources and visual receptors (people) will be assessed by considering the proposed change in the baseline conditions (the impact of the development) against the type of landscape resource or visual receptor (including the importance and sensitivity of that resource or receptor). These factors are determined through a combination of

quantitative (objective) and qualitative (subjective) assessment using professional judgement. The assessment methodology is summarised in Figure 10.3.

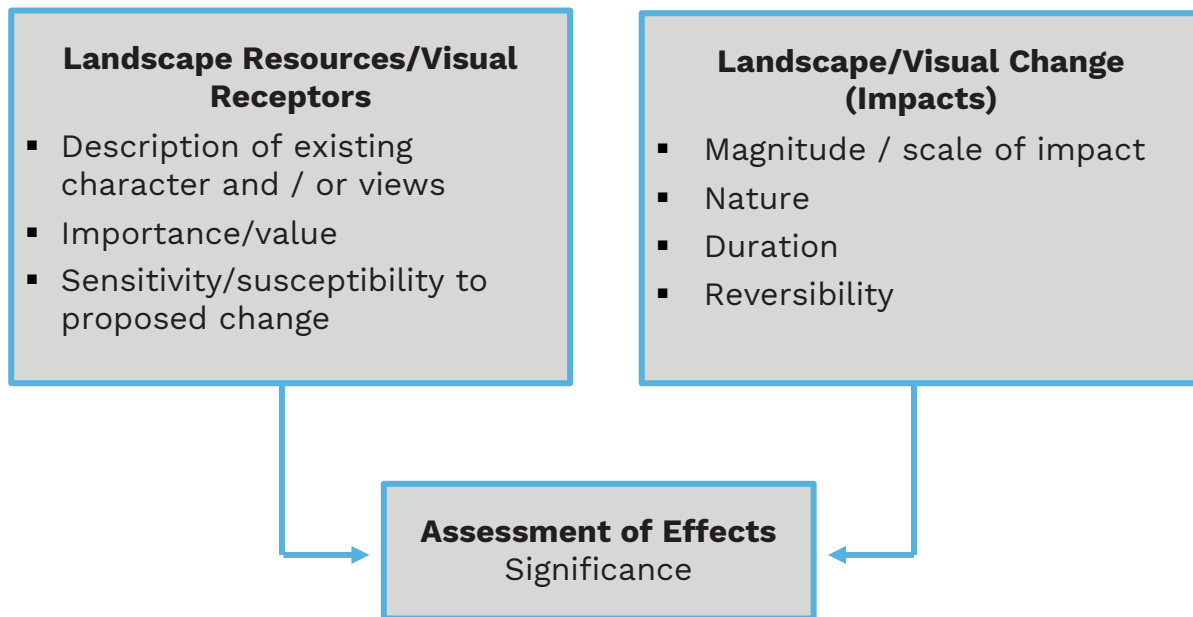


Figure 10.3: Assessment methodology summary

10.8.4 The LVIA will consider the likely significant effects of the Proposed Development upon:

- individual landscape features and elements;
- landscape character; and
- visual amenity and the people who view the landscape.

10.8.5 The capacity of the landscape to accept change of the type proposed by the Proposed Development will be assessed by reviewing the sensitivity of each landscape character area identified from the Scottish Landscape Character Types Map and accompanying information, produced by NatureScot. Overall key landscape components are normally landform, vegetation, historical and built form components. Landform relates to topography, drainage characteristics and geology. Historical and cultural components include historic landscapes, listed buildings, conservation areas and historic designed landscapes. Vegetation plays an important role in how the landscape and visual resources of an area are viewed and is an integral component of landscape character.

10.9 Potential Inter-Relationships

10.9.1 The assessment of potential inter-relationships will be considered within the LVIA Onshore EIA Report Chapter. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There are potential inter-relationships with other topics, for example:

- Section 7: Land Use, Agriculture and Public Access:

- Impacts on PRoW during the construction and operational phases of the Proposed Development in regards to impacts on views from such networks.
- Impacts on areas of existing commercial forestry during the construction phase of the Proposed Development.
- Section 8: Biodiversity and Terrestrial Ecology:
 - Areas of native planting used to integrate the Proposed Development into its setting would give greater variety and provide increased biodiversity and habitat. All existing hedgerows, woodland and individual trees are to be retained where possible and shall be protected during the construction phase in accordance with BS:5837 2012 'Trees in relation to design, demolition and construction – Recommendations'. The assessment of ecological receptors will be led by the ecologists.
- Section 11: Cultural Heritage:
 - Developments can sometimes infringe upon the amenity use and visual setting of a heritage feature and as a result lead to unacceptable impacts. The assessment of heritage receptors will be led by the heritage consultants.
- Section 12: Geology and Ground Conditions:
 - Cut and fill material may be used to create landscaping bunds. The quality of the cut material will dictate if it can be reused on site as part of the mitigation measures. There is also potential for improving the quality of material to reduce the volume of unsuitable structural cut material. Material of lower quality that cannot be adopted into the Proposed Development and utilised on site as landscape fill material will need to be reused or disposed off-site. There are a number of viable options that will be considered, all with the aim of ensuring no significant impact on the receiving environment.
- Section 14: Noise and Vibration:
 - The creation of any noise attenuation measures such as acoustic barriers or bunds has the potential to impact on landscape and visual receptors.
- Section 15: Traffic and Transport:
 - New areas of woodland screen planting would offset and filter views towards the Proposed Development from the surrounding road networks. Additional vehicle movements generated during both the construction and operational phases of the Proposed Development may give rise to visual impacts. The assessment on traffic and transport receptors will be led by the traffic and transport consultants.

- Section 17: Socio-Economics, Tourism and Recreation:
 - There may be a reduction in the appeal, enjoyment and accessing of recreational areas as a result of the Proposed Development which relates to landscape and visual impact.

10.10 Potential Cumulative Effects

- 10.10.1 There is the potential for cumulative landscape and visual effects to occur when the Proposed Development is considered in combination with other developments falling within the LVIA Study Area. The likely significant cumulative effects between the Proposed Development and other identified projects will be considered within the Onshore EIA Report.
- 10.10.2 Other developments, such as project substations, transmission substations, battery storage facilities and cable connections similar to the Proposed Development, will be identified in the cumulative LVIA and will be assessed against the baseline scenario to determine their cumulative effect and the cumulative assessment will also include an assessment of the offshore components in combination with the Proposed Development. The cumulative assessment will identify whether cumulative LVIA mitigation measures are required.
- 10.10.3 Potential cumulative landscape and visual impacts arising as a consequence of the Proposed Development and offshore elements of Project has been considered as part of the Offshore Scoping Report, however it is considered that there are unlikely to be significant cumulative landscape and visual effects due to separation distances, intervening vegetation cover and localised topographical changes and therefore these are proposed to be scoped out of the LVIA Assessment.
- 10.10.4 The proposed approach to the assessment of cumulative effects is set out in Section 4.5.

10.11 Summary of Proposed Scope

- 10.11.1 A desktop study identifying the landscape character within which the Proposed Development is located will be undertaken. Site-specific surveys will be undertaken to assess and inform potential visual receptors, which will be complemented by site photography from agreed viewpoints. The LVIA will follow guidelines outlined in GLVIA 3 with photomontages being produced from selected locations as an aid to the visual assessment and to accurately represent the Proposed Development at various stages of development. Potential impacts arising from the Proposed Development are expected to include:
- landscape impacts arising as a consequence of Landfall (construction and decommissioning);
 - landscape character impacts arising as a consequence of the Cable Corridor (construction and decommissioning);

- landscape character impacts arising as a consequence of the Substation (all phases);
- visual impacts arising as a consequence of the landfall site (construction and decommissioning);
- Visual impacts arising as a consequence of the onshore cable corridor (construction and decommissioning); and
- visual impacts arising as a consequence of the Substation (all phases).

10.11.2 Whilst embedded mitigation measures will be part of the Proposed Development for assessment, where necessary mitigation measures will be proposed to avoid or minimise significant adverse effects to an acceptable level.

10.11.3 The scoping exercise has concluded that because of potential landscape and visual effects arising from the Proposed Development during the construction, operational and decommissioning phases that a Landscape and Visual Impact Assessment Chapter should be scoped into the Onshore EIA Report.

11 Cultural Heritage

11.1 Introduction

- 11.1.1 This section of the Onshore Scoping Report identifies the cultural heritage assets of relevance to the Proposed Development and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment. In line with NPF4, heritage asset is defined here as *‘a physical element of the historic environment – a building, monument, site, place, area or landscape identified as having cultural significance.’*
- 11.1.2 The proposed scope has been informed by an initial desk-based study drawing upon data provided by Historic Environment Scotland (HES), Aberdeenshire Historic Environment Record (HER) and a walkover survey of the intertidal area. Further baseline research will be undertaken as the EIA progresses.

11.2 Planning Policy and Legislation

- 11.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of cultural heritage is set out below.
- Ancient Monuments and Archaeological Areas Act 1979 (as amended by the Historic Environment (Amendment) (Scotland) Act, 2011);
 - Protection of Military Remains Act 1986;
 - Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 (as amended by the Historic Environment (Amendment) (Scotland) Act, 2011);
 - Electricity Act 1989, Schedule 9 – Preservation of amenity and fisheries: Scotland;
 - Historic Environment Act (Scotland) 2014;
 - NPF4 – Policy 7 (Historic assets and places);
 - Historic Environment Policy for Scotland and
 - ALDP 2023
 - Policy HE1 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites (including other historic buildings).
 - Policy HE2 Protecting Historic, Cultural and Conservation Areas.

11.3 Study Area

- 11.3.1 The Cultural Heritage Study Area will extend 250 m from the Planning Application Boundary, once determined, and 3 km from the Substation, once determined (Figure 1.3). The former is sufficient to gather enough background data to identify assets that may be physically affected by the Proposed Development, without gathering large amounts of extraneous information, whilst the latter has been applied to allow the identification

of designated heritage assets the setting of which may be affected by the operation phase of the Proposed Development. The distance is considered to be appropriate given the scale of the Substation and the character of the surrounding landscape. It is proposed to scope out construction and decommissioning impacts relating to setting (see Table 11.4).

11.4 Data Sources

- 11.4.1 The baseline data that will be used to inform the cultural heritage assessment will be gathered from sources identified in Table 11.1.

Table 11.1: Cultural heritage data sources

Data Source	Dataset
HES Historic Environment Data Portal	Designated Heritage Assets (World Heritage Sites, Scheduled Monuments, Listed Buildings, Inventory Battlefields, Inventory Gardens and Designed Landscapes and Conservation Areas), Canmore and Historic Land use Assessment Map.
Aberdeenshire HER	Non-designated heritage assets and previous archaeological fieldwork and finds.
National Library of Scotland	Historic Mapping
Scottish Government LiDAR data	Where available
British Geological Survey	Bedrock and superficial geology
Site investigation	The results of any site investigation work undertaken for the Proposed Development will be considered to identify areas of potential paleoenvironmental interest.
Satellite imagery	Google Earth
Readily available published sources	Relevant grey literature, journals and publications.
Targeted site visits and walkover survey	Selected designated assets will be visited to gather baseline setting data and targeted walkover survey will be undertaken to verify and augment the results of the desk-based research. An intertidal walkover survey of the Scoping Boundary was undertaken in September 2023.

11.5 Baseline Environment

- 11.5.1 As the Cable Corridor and Substation location have yet to be fixed, the Cultural Heritage Study Area is similarly yet to be fixed. The following section is based on consideration of available data for the Scoping Boundary, which comprises the Cable Corridor and Substation search areas. This will be updated as work progresses.

Designated Heritage Assets

- 11.5.2 There are six Scheduled Monuments within the Scoping Boundary (Figure 11.1), which are listed in Table 11.2. They are primarily Prehistoric in date, comprising cairns and settlement remains, but also include World War 2 defences. They survive as upstanding features. The exceptions are the prehistoric remains at Clochanshiels (SM4857) and the World War 2 defences of the Cowie Line (SM6575).

Table 11.2: Scheduled Monuments within the Scoping Boundary

Reference	Name
SM4509	Blackhill Wood, long cairn and cairn E of
SM4754	Montgoldrum, cairns & hut circle 400 m E of
SM4857	Clochanshiels, cairns, houses and field systems 500m ESE of
SM547	Gourdon Hill, long cairn
SM6575	Cowie Line, pillboxes & anti-tank blocks NE of Whitehill
SM4534	Hillhead, long cairn 320 m SW of Upper Craighill

- 11.5.3 There are 44 Listed Buildings within the Scoping Boundary (shown on Figure 11.1). Of these, 13 are Category A, 13 Category B and 18 Category C. They comprise a diverse range of buildings including castles, churches and other church buildings, mills, bridges and houses. Most of these are distinct clusters in the settlements of Benholm and Drumlithie and the policies of Arbuthnott House, Glenbervie House and Benholm Castle. All but two of the Listed Buildings lie out with the Substation search area. The exceptions are Mergie Farmhouse (LB9312) and its associated garden house (LB9313). These are respectively Category B and C-listed.
- 11.5.4 There are two Inventory Gardens and Designed Landscapes within the Scoping Boundary: Glenbervie House (GDL00194) and Arbuthnott House (GDL00016). These lie out with the Substation search area.
- 11.5.5 There is one Conservation Area within the Scoping Boundary: Benholm. This lies near the southern end of the Scoping Boundary several kilometres from the Substation search area.
- 11.5.6 There are no Inventory Battlefields within the Scoping Boundary.

Non-Designated Heritage Assets

- 11.5.7 Aberdeenshire HER holds records for a wide range of sites within the Scoping Boundary, spanning all periods. These include Prehistoric burial cairns and other ritual sites, and settlements, industrial and agricultural sites and fortifications of all periods. Together these demonstrate a long history of settlement and related activity.
- 11.5.8 Relatively little intrusive archaeological work has been undertaken within the Scoping Boundary. This introduces a degree of bias into the available data, more substantial and later sites will tend to be over-represented. However, aerial reconnaissance has identified several probable prehistoric settlements as cropmarks, which partially addresses this bias. Given the

recorded archaeological sites and the scattering of chance finds of Prehistoric artefacts, it is clear that there is potential for hitherto unrecorded archaeology to be present.

- 11.5.9 In addition to the conventional sites and monuments recorded in the HER, there are areas of peat within the Scoping Boundary that may be of paleoenvironmental interest, having the potential to inform understanding of the past environment and the human impact upon it.



Figure 11.1: Designated heritage assets within the Scoping Boundary

11.6 Embedded Mitigation

- 11.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 11.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 11.6.3 The following embedded mitigation is relevant to cultural heritage. This is in addition to the overarching Design Principles as outlined in Section 3.4.
- The Proposed Development will avoid physical impacts (both direct and indirect) upon designated heritage assets.
 - Substation selection will take into account the setting of designated heritage assets.
 - As a minimum, field boundaries, ground cover and topography on the Cable Corridor will be reinstated to pre-construction conditions thereby preventing impacts relating to setting from this element of the Proposed Development.
 - The Proposed Development will avoid, as far as reasonably practicable, physical impacts upon non-designated heritage assets.
 - Where appropriate, measures will be included in a CEMP that will prevent accidental damage to heritage assets. For example, heritage assets at risk of being accidentally damaged by plant movement will be fenced off.
- 11.6.4 The embedded mitigation measures will evolve over the development process as the EIA progresses. For example, measures such as landscaping, which can include earthworks and planting, may be required to mitigate operation phase impacts relating to setting.
- 11.6.5 It is considered that at minimum, a post-consent programme of targeted archaeological works will be necessary to identify hitherto unrecorded archaeological assets that may be affected by the Proposed Development followed by recording, excavation, analysis and publication as appropriate to offset the physical loss of historic assets where these cannot be avoided.

11.7 Potential Proposed Development Impacts

- 11.7.1 A range of potential impacts on cultural heritage have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 11.7.2 The impacts that have been scoped into the assessment are outlined in Table 11.3 together with a description of any additional data collection (e.g. site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.

- 11.7.3 Potential impacts scoped out of the assessment are presented in Table 11.4, with justification.

Table 11.3: Potential impacts proposed to be Scoped In – Cultural Heritage

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Construction impacts upon the physical fabric of heritage assets, both known and unknown	✓	x	x	Physical impacts upon designated heritage assets will be avoided by design. Construction may result in the loss or partial loss of non-designated heritage assets leading to loss of cultural significance.	Desk-based research and targeted walkover survey.	Assessment to be undertaken in line with approach outlined in the EIA Handbook (NatureScot & HES, 2018) based on the maximum design parameters of the Proposed Development.
Construction and operation impacts upon deposits of paleoenvironmental interest	✓	✓	x	Construction of the Proposed Development may result in direct impacts upon deposits of potential paleoenvironmental interest, as a result of removal of such deposits. Operation of the Proposed Development may result in indirect impacts as a result of changes in hydrology leading to the degradation of waterlogged deposits.	Desk-based research and targeted walkover survey.	Assessment to be undertaken in line with approach outlined in the EIA Handbook (NatureScot & HES, 2018) based on the maximum design parameters of the Proposed Development. The assessment will be informed by the results of the assessment for Geology and Ground Conditions (see Section 12: Geology and Ground Conditions).

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Operational impacts upon designated heritage assets as a result of change in their setting	x	✓	x	The appearance of the Substation in views from or of designated heritage assets may result in loss of cultural significance or adversely affect the appreciation and experience of the asset.	Desk-based research and site visits informed by a ZTV.	Assessment to be undertaken in line with approach outlined in the EIA Handbook (NatureScot & HES, 2018) based on the maximum design parameters of the Proposed Development. Where appropriate, this will be supported by visualisations. Viewpoints will be agreed with consultees.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

Table 11.4: Potential impacts proposed to be Scoped Out – Cultural Heritage

Potential Impact	Justification
Construction phase impacts relating to setting	Construction phase impacts relating specifically to setting will be short or medium term and potentially transient or intermittent. Given this, such impacts are considered unlikely to be significant.
Accidental construction phase impacts	Such impacts may occur as a result of uncontrolled plant movement or excavation. They will be prevented through measures specified in the CEMP, such as fencing off assets considered to be at risk of accidental damage.
Operational impacts upon designated heritage assets outside the study area.	Given the nature of the Proposed Development and the existing landscape, whilst there is potential that the Substation will be visible from assets beyond the study area, there is negligible potential for this to result in significant effects. This is because as at such distances in excess of 3 km the Substation will constitute a small visual change in their setting that has no potential to substantively affect their cultural significance.
Operational impacts relating to the setting of non-designated assets of less than national importance	Operational effects in respect of these assets are unlikely to be significant. Regional to local importance assets are assessed to have medium to low sensitivity. As operational impacts only relate to the setting of non-designated assets it is unlikely to result in an impact of sufficient magnitude to yield a significant effect given the embedded mitigation.
Decommissioning phase impacts	It is assumed that decommissioning will disturb only ground that has been disturbed during the construction phase and hence has no potential to affect archaeological assets. Decommissioning phase impacts relating specifically to setting will be short or medium term and potentially transient or intermittent. Given this, such impacts are considered unlikely to be significant

11.8 Proposed Assessment Methodology

- 11.8.1 After confirmation of the Cable Corridor, Substation site, and Landfall site an Historic Environment Desk-Based Assessment (HEDBA) will be produced to inform the cultural heritage impact assessment. It will be prepared with reference to the Standard Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists, 2020) and will form a technical appendix to the Onshore EIA Report chapter.
- 11.8.2 The HEDBA will draw upon the sources identified in Table 11.1 verified and augmented by site visits and a targeted walkover survey. It will:
- Identify and summarise relevant policy, legislation and guidance.
 - Identify designated and non-designated heritage assets in the Cultural Heritage Study Area.

- Describe the cultural significance of those assets that may be affected by the Proposed Development and, where relevant, the contribution of setting to that significance.
- Assess the potential for hitherto unrecorded archaeological assets to be present.

11.8.3 Detailed recording of heritage assets will not be undertaken at this stage, such work will be undertaken, where necessary, following consent and ahead of or during the construction phase.

11.8.4 The impact assessment will be undertaken with reference to the EIA Handbook (NatureScot & HES, 2018) and Managing Change in the Historic Environment: Setting (HES, 2020). The magnitude of impact will be determined with reference to change in the receptor's cultural significance and sensitivity will be determined with reference to level of designation (where relevant) and importance. Effect significance will reflect these factors. Assessment of impacts relating to setting will, where necessary, be supported by appropriate visualisations.

11.9 Potential Inter-Relationships

11.9.1 Any potential inter-relationships with other topics will be set out in the Onshore EIA Report. There are most likely to be inter-relationships with Landscape and Visual and, potentially, Geology and Ground Conditions. In the current context, it is unlikely that there will be any inter-relationships with noise and vibration as noise and vibration will primarily relate to the construction phase and hence will be relatively short-lived and transitory, whilst operational phase noise from the onshore substation is unlikely to be adversely affect the setting of heritage assets.

- Section 10: Landscape and Visual Impact Assessment:
 - Developments can sometimes infringe upon the amenity use and visual setting of a heritage feature and as a result lead to unacceptable impacts.
- Section 12: Geology and Ground Conditions
 - There are pockets of peat within the Scoping Boundary. Disturbance of these or changes in hydrology may affect deposits of paleoenvironmental interest. The cultural heritage assessment will be informed by the Geology and Ground Conditions chapter.

11.10 Potential Cumulative Effects

11.10.1 Cumulative effects may occur during the construction phase if the physical fabric of a heritage asset is affected by both the Proposed Development and other projects. The assessment will consider the potential for such impacts to occur and identify where there is potential for a significant effect.

11.10.2 Cumulative impacts may occur during the operational phase if the Substation and other projects affect the setting of a designated heritage

asset. The assessment will consider the potential for such impacts to occur and identify where there is potential for a significant effect.

- 11.10.3 The proposed approach to the assessment of cumulative effects is set out in Section 4.5.

11.11 Summary of Proposed Scope

- 11.11.1 The Cultural Heritage chapter of the Onshore EIA Report will consider the likely significant effects of the Proposed Development upon heritage assets. These may occur as a result of physical loss during the construction phase and change in setting during the operation phase. Baseline studies comprising desk-based assessment and site visits, will be undertaken to identify potential receptors and thereby inform the development of appropriate mitigation measures and the impact assessment. The assessment will be undertaken in accordance with relevant guidance.

The scoping exercise has concluded that because of potential effects on cultural heritage arising from the Proposed Development during the construction, operation and maintenance and decommissioning phases that a Cultural Heritage Chapter and assessment should be scoped into the Onshore EIA Report.

12 Geology and Ground Conditions

12.1 Introduction

- 12.1.1 This section of the Onshore Scoping Report identifies the geology and ground conditions of relevance to the Proposed Development and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.
- 12.1.2 The Geology and Ground Conditions EIA Report Chapter will assess the potential impacts of the Proposed Development on geological and hydrogeological resources. This includes detailed consideration of potential impacts on the local geology and hydrogeology in and around the Proposed Development. Potential impacts on peat deposits, and potential risks associated with peat slide, will be assessed as required. The impacts of any potentially contaminated land will also be assessed as required.
- 12.1.3 Hydrology will be assessed separately (Section 19: Water Quality and Flood Risk).

12.2 Planning Policy and Legislation

- 12.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of geology and ground conditions is set out below.
- NPF4 (2023);
 - ALDP (2023), specifically polices:
 - PR1.9 (Minerals);
 - PR1.10 (Peat and carbon rich soils); and
 - C3 (Carbon sinks and stores). Scottish Government, Scottish Natural Heritage (SNH) (Now NatureScot), SEPA (2017). Guidance on Developments on Peatland;
 - Energy Consents Unit Scottish Government (2017). Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments. Second Edition;
 - Scottish Renewables, SEPA (2014). Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste;
 - SEPA (2010). SEPA Regulatory Position Statement - Developments on Peat;
 - SEPA (2017). SEPA Regulatory Position Statement - Developments on Peat and Off-site Uses of Waste Peat. WST-G-052. Version 1;
 - Scottish Renewables, SNH, SEPA, Forestry Commission Scotland, HES, Marine Scotland Science, AECOW (2019). Good Practice During Wind Farm Construction. 4th Edition;
 - SNH, Forestry Commission Scotland (2010). Floating Roads on Peat: A report into Good Practice in Design, Construction and Use of Floating

Roads on Peat with Particular Reference to Wind Farm Developments in Scotland;

- Scottish Executive (2005). Scottish Roads Network Landslides Study Summary Report;
- Forestry Commission (2006). Guidelines for Risk Management of Peat Slips on the Construction of Low Volume/Low Cost Roads on Peat;
- SNH (2015). Constructed Tracks in the Scottish Uplands;
- SEPA, EnviroCentre (2011): Restoration Techniques Using Peat Spoil from Construction Works; A summary of the policy legislation and guidance which will inform the Assessment;
- CIRIA (1997). Ground Engineering Spoil: Good Management Practice. CIRIA report 179;
- NetRegs. Guidance for Pollution Prevention (GPP) GPPS relevant to the construction, operation and maintenance, and decommissioning of the Proposed Development;
- CIRIA (2015). Environmental Good Practice on site. CIRIA C741;
- Institution of Civil Engineers (2001). Managing Geotechnical Risk: Improving Productivity in UK Building and Construction;
- Contaminated Land (Scotland) Regulations 2005 (as amended);
- UK Department for Environment, Food and Rural Affairs (Defra) Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance (2012); and
- Land Contamination Risk Management (LCRM), Environment Agency, 2020.

12.3 Study Area

- 12.3.1 The Scoping Boundary (Figure 1.3) (and therefore the Geology and Ground Conditions Study Area – the Study Area) is 6,202.43 (ha) and covers a broad area of land stretching from the coastal area to the south of Gourdon, passing through the wider Arbuthnott and Drumlithie areas before reaching the proposed GCP in the vicinity of the proposed SSEN transmission infrastructure within Fetteresso Forest (Hurlie Substation). It is entirely contained in the Kincardine and Mearns area within the local authority area of the Aberdeenshire Council.

12.4 Data Sources

- 12.4.1 The baseline data that will be used to inform the geology and ground conditions assessment will be gathered from sources identified in Table 12.1. As outlined in Section 12.8 desk and field studies as well as targeted survey work will also be undertaken.

Table 12.1: Geology and ground conditions data sources

Data Source	Dataset
British Geological Survey (BGS) Geoindex British Geological Survey (2023)	Mapping for geology, hydrogeology, boreholes and mine & quarries
Scottish Soils mapping (Scotland's Soils - soil maps, 2022).	Mapping for soils (including peat)
Nature Scot SiteLink (NatureScot, n.d.)	Mapping for geological conservation review sites
Aberdeenshire Council Local Development Plan 2023 - Appendix 14 Areas safeguarded or identified as areas of search for mineral development (Appendix 14, n.d)	Mapping for mineral safeguarded sites
National Library of Scotland Series maps 1795-1961 (maps.nls.uk., n.d)	Historical Ordnance Survey mapping
Geology and ground conditions desk study inclusive of purchase of a 3rd party environmental report and consultations. This will also include a review of any intrusive ground information made available	To be undertaken to inform EIA assessment and will confirm the high-level baseline geology and ground conditions provided herein

Desk Study

- 12.4.2 A desk study (including consultation) will be undertaken following scoping and as cable corridor routes are developed to confirm the baseline Geology and Ground Conditions by reviewing available information relating to geology and ground conditions to initially characterise the following:
- the depth and distribution of peat;
 - the nature of the underlying geology;
 - the presence of any Public and Private Water Supplies (PPWS's) including a buffer;
 - the presence of any Groundwater Dependant Terrestrial Ecosystems (to be provided by way of separate Ecology survey); and
 - potentially contaminative current or historic land uses.
- 12.4.3 The baseline assessment will include review of published geological and soil maps, purchased historical OS maps, aerial photographs digital terrain models (slope plans), geological literature, information provided in consultations with the Council and SEPA and any ground investigation reports made available.
- 12.4.4 The baseline assessment will include a review of the development proposals and reports from other technical studies being undertaken for the application, particularly hydrology and ecology.
- 12.4.5 The desk study will be used to develop a conceptual site model which would then be used to identify sensitive features or receptors which may

potentially be affected by the proposed development, and which might warrant further investigation as part of the proposed field surveys.

Field Survey

12.4.6 A programme of site visits and surveys will be undertaken to:

- verify the information collected during the desk study; and
- peat probing surveys may be required if the design cannot avoid areas of mapped peat. If required, peat surveys will be undertaken in accordance with current best practice.

12.4.7 The desk study and possible peat surveys will be used to identify potential development opportunities and constraints and will be used to inform the site design.

12.4.8 Once the desk study and any initial field surveys are completed and sensitive geological and soil features have been identified, the impact assessment will be undertaken.

Peat Management Plan

12.4.9 Should the design be unable to completely avoid areas of peat, an outline Peat Management Plan (PMP) may be required to assess the potential volumes of peat excavation required and identify opportunities for re-use.

Peat Landslide Hazard and Risk Assessment

12.4.10 If significant peat depths are proven an outline Peat Landslide Hazard and Risk Assessment (PLHRA) may be required using the site survey data and slope analysis (using DTM data), highlighting areas that may be impacted by a peat slide so that appropriate mitigation measures can be identified and included in the site design.

12.5 Baseline Environment

12.5.1 This section sets out a high-level overview of the baseline geology and ground conditions based on an initial review of those desktop data sources listed in Table 12.1 that are publicly available (as well as a web based geographic information system incorporating these data).

Superficial Geology

12.5.2 Till (Mill of Forest comprising sandy diamicton) predominates across the Geology and Ground Conditions Study Area with areas of Alluvium (clay, silt, sand and gravel) present adjacent to surface water courses, Drumlithie Formation (sand and gravel), Glacial Deposits (diamicton, sand and gravel) and occasional small pockets of peat. Large areas are unmapped and may represent shallow bedrock. Raised Marine Deposits (sand, silt and clay) are present close to the coast in the vicinity of the Landfall while the Substation vicinity is generally unmapped.

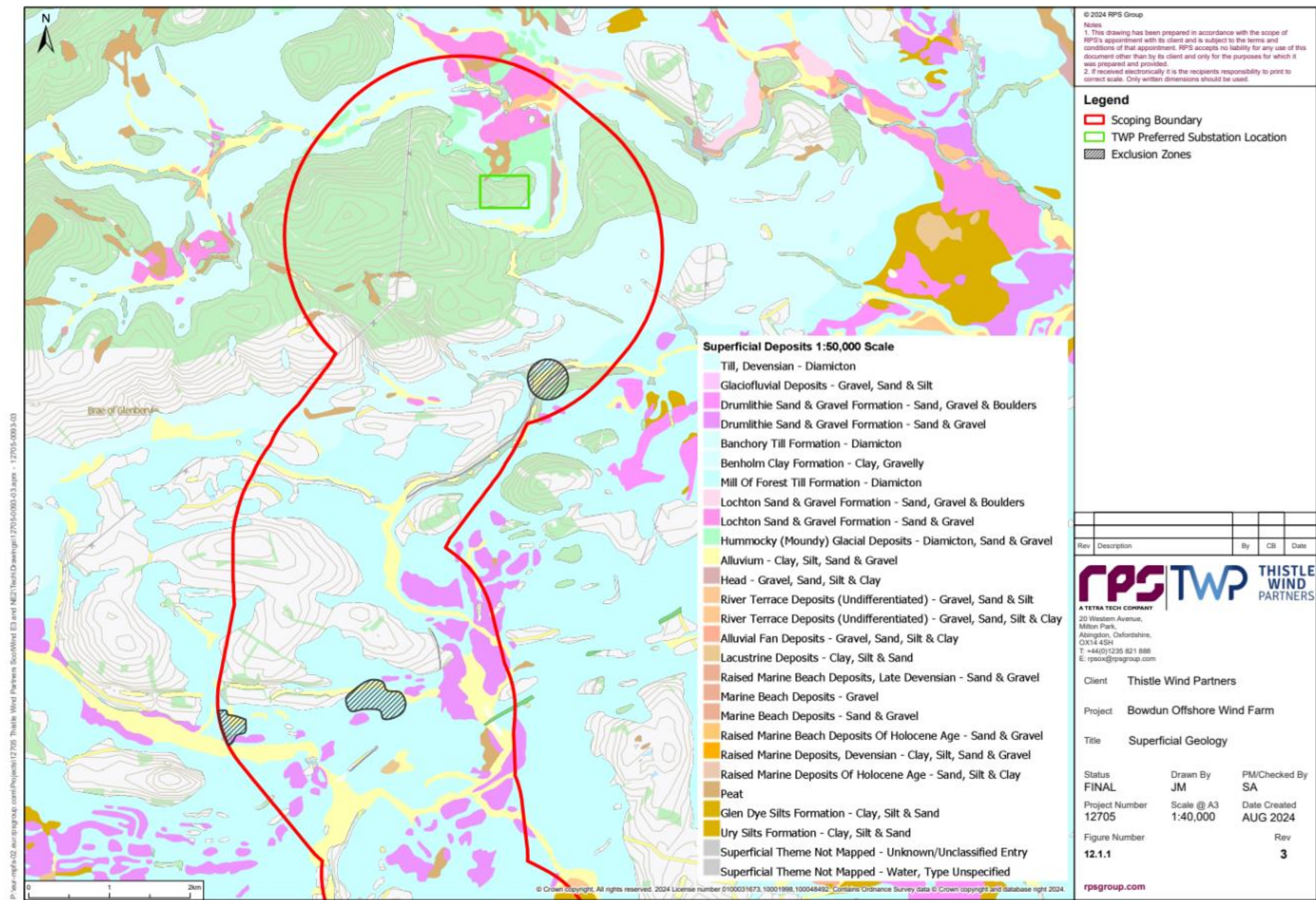
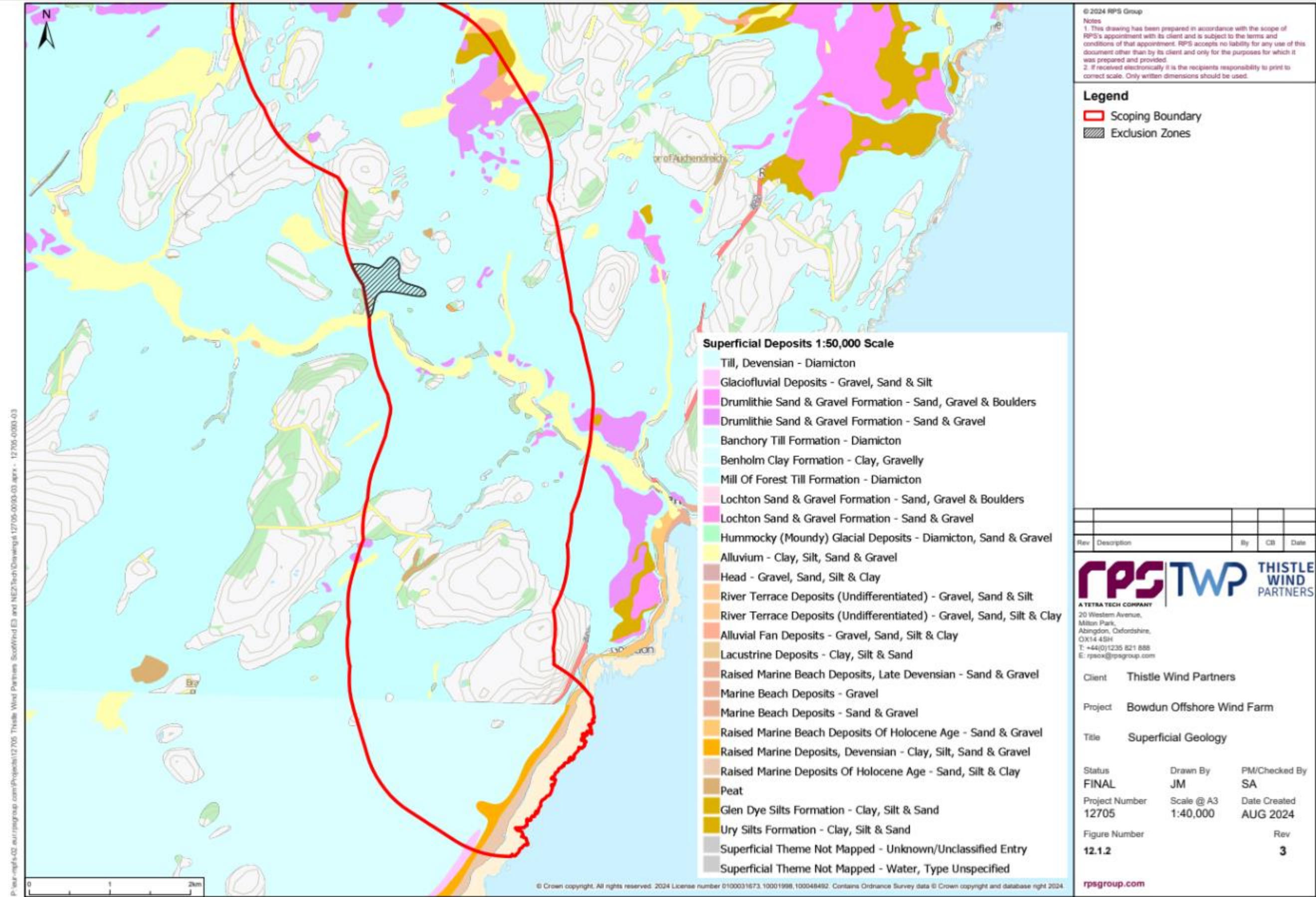


Figure 12.1: Superficial Geology



Carbon and Peatland

- 12.5.3 The majority of the Geology and Ground Conditions Study Area is noted to be free of peat deposits although Class 4 peat is mapped across the northerly extent of the Study Area (in the vicinity of the substation) along with pockets of Class 3 and 5 peat. A pocket of Class 4 peat is also mapped just north of Drumlithie.

Bedrock Geology

- 12.5.4 The bedrock geology is highly variable across the Geology and Ground Conditions Study Area, which will be listed in the desk study supporting the EIA assessment. Of note the area in the vicinity of the Landfall is mapped as the Crawton Volcanic Formation while the substation area is mapped as the Glen Lethnot Grit Formation.

Historical Boreholes

- 12.5.5 There are a number of borehole records available for the Geology and Ground Conditions Study Area, particularly across central areas, however, there do not appear to be any records available in the vicinity of the Landfall or Substation. Borehole records will be reviewed as part of the desk study which will support the assessment in the Onshore EIA Report.

Geologically Designated Sites

- 12.5.6 The Burn of Benholm SSSI/Geological Conservation Review Site encroaches into the area of constraint in the south western area of the Geology and Ground Conditions Study Area. There are no others within the Geology and Ground Conditions Study Area.

Mineral Resources

- 12.5.7 There are no mineral search areas or mineral safeguarded sites within, or in close proximity to, the Geology and Ground Conditions Study Area.

Hydrogeology

- 12.5.8 The bedrock geology is highly variable across the Geology and Ground Conditions Study Area and comprises generally low to moderately productive aquifers. Of note the area in the vicinity of the Landfall is mapped as a moderate productivity aquifer while the substation area is mapped as a low productivity aquifer.

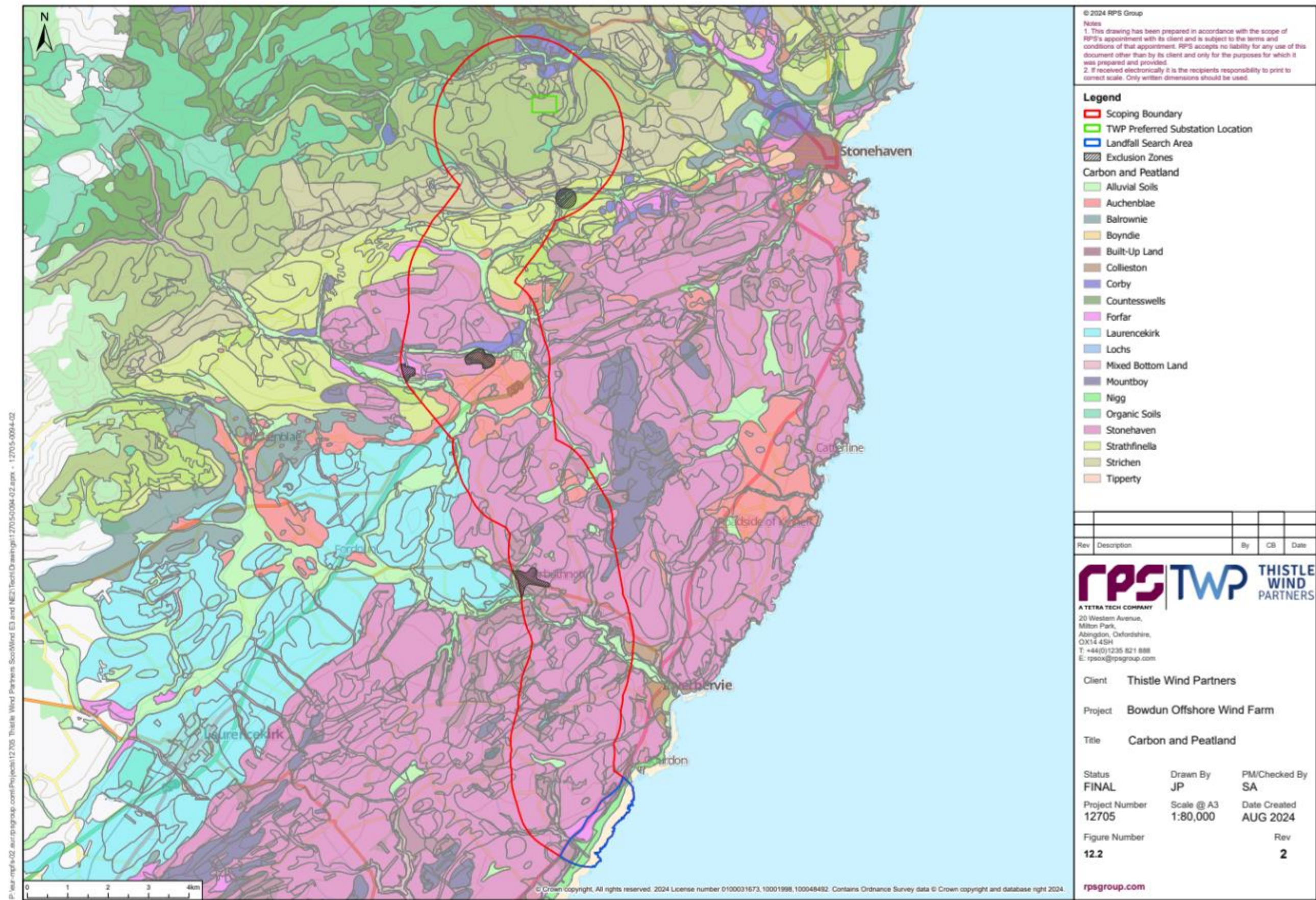


Figure 12.2: Carbon and Peatland

Contaminated Land

- 12.5.9 No artificial ground is mapped within the Geology and Ground Conditions Study Area, with the exception of areas located alongside sections of the A90 and the east coast rail line in the centre of the Geology and Ground Conditions Study Area.
- 12.5.10 The Geology and Ground Conditions Study Area is considered too large to review publicly available historical OS mapping to inform high-level potential areas of contaminated land however historical mapping (centred on the Geology and Ground Conditions Study Area) will be purchased as part of the desk study which will support the assessment in the Onshore EIA Report. Aberdeenshire Council have provided an overview of potentially contaminated land via their pre-application responses and via desk study consultation. The potential for contaminated land across the Geology and Ground Conditions Study Area is considered low given its relatively undeveloped nature.
- 12.5.11 There are known features such as an old railway line between Montrose and Inverbervie running near to the A92 trunk road as well as potential landfill sites adjacent to the A90, all of which have been initially flagged by Aberdeenshire Council during pre-application discussions. We will have cognisance of these as the assessment progresses.

Future Baseline Conditions

- 12.5.12 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic.

12.6 Embedded Mitigation

- 12.6.1 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible. This will include Geology and Ground Conditions constraints which include the potential presence of peat.
- 12.6.2 The following embedded mitigation is relevant to Geology and Ground Conditions. This is in addition to the overarching Design Principles as outlined in Section 3.4. :
- site specific and phased peat probing may be required if the layout cannot avoid areas of mapped peat;
 - if required, a Peat Management Plan will be prepared to show how the integrity of peat will be safeguarded;
 - a site specific Peat Landslide Hazard and Risk Assessment (PLHRA) may be required if the layout cannot avoid areas of peat. Areas of potential increased peat slide risk will be avoided or mitigated through engineering controls.
- 12.6.3 Most or all potentially significant effects are anticipated to be mitigable through standard designed in mitigation measures including suitable site

design (taking the findings of the above studies and surveys into account) and appropriate construction methods to be set out in the CEMP. Where additional site-specific mitigation is required, this will be clearly set out in the Onshore EIA Report and will be the subject of ongoing consultation with relevant regulators and stakeholders.

12.7 Potential Proposed Development Impacts

- 12.7.1 A range of potential impacts on geology and ground conditions have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 12.7.2 The impacts that have been scoped into the assessment are outlined in Table 12.2 together with a description of any additional data collection (e.g., site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 12.7.3 Potential impacts scoped out of the assessment are presented in Table 12.3, with justification.

Table 12.2: Potential impacts proposed to be Scoped In – Geology and Ground Conditions

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Disturbance of peat	✓	x	x	Mapped within Geology and Ground Conditions Study Area.	Desk study to confirm baseline conditions/inform EIA assessment will confirm need for peat survey(s). Proposed infrastructure should ideally avoid areas of deep peat (>1.0m)	If peat areas are unavoidable then peat survey(s) would be undertaken in general accordance with the Scottish Government, SNH, SEPA (2017). Guidance on Developments on Peatland.
Disturbance of GWDTEs	✓	x	x	Potentially associated with mapped peat areas.	Ecology survey will identify the potential presence of GWDTE's.	If GWDTEs are considered to be potentially impacted, they will be assessed accordingly.
Interruption of Public and Private Water Supplies (PPWSs)	✓	✓	✓	Potentially present within Geology and Ground Conditions Study Area.	Desk study to confirm baseline conditions/inform EIA assessment, and particularly Aberdeenshire Council consultations, will confirm the potential presence of PPWSs.	If PPWSs are considered to be potentially impacted, they will be assessed by way of PWS assessment.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Disturbance of contaminated soils and groundwater	✓	x	x	Potentially present within Geology and Ground Conditions Study Area.	Desk study to confirm baseline conditions/inform EIA assessment will confirm the presence of potential contaminated land.	If potential contaminated land is considered to be potentially impacted, it will be assessed accordingly.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

Table 12.3: Potential impacts proposed to be Scoped Out – Geology and Ground Conditions

Potential Impact	Justification
Geologically designated sites	The Burn of Benholm SSSI encroaches the Scoping Boundary. However, as it sits within the constraint area (see Figure 1.3) it is not expected there will be any potential impacts. Therefore, geologically designated sites have been scoped out.
Mineral resources (including safeguarded sites)	None within, or in close proximity to, the Geology and Ground Conditions Study Area.

12.8 Proposed Assessment Methodology

- 12.8.1 All impacts will be assessed by determining impact magnitude and receptor sensitivity, to establish the likely significance of effect in line with the methodology set out in Section 4: EIA Methodology.
- 12.8.2 Baseline Geology and Ground Conditions will be identified by completing a desk study (including consultation), which will be commenced post scoping, the process of which is summarised in Section 12.11.

12.9 Potential Inter-Relationships

- 12.9.1 The assessment of inter-relationships will be considered within the Onshore EIA Report. It will include consideration of Proposed Development lifetime effects and receptor-led effects, in line with the approach outlined in Section 4: EIA Methodology. There are potential inter-relationships with other topics, for example:
- Section 10: Landscape and Visual Impact Assessment:
 - Cut and fill material may be used to create landscaping bunds. The quality of the cut material will dictate if it can be reused on site as part of the mitigation measures. There is also potential for improving the quality of material to reduce the volume of unsuitable structural cut material. Material of lower quality that cannot be adopted into the Proposed Development and utilised on site as landscape fill material will need to be reused or disposed off-site. There are a number of viable options that will be considered, all with the aim of ensuring no impact on the receiving environment.
- 12.9.2 There is the potential for pollution to watercourses to have impacts upon ecological receptors, however it is anticipated that these can be addressed via the successful implementation of embedded mitigation measures.

12.10 Potential Cumulative Effects

- 12.10.1 The potential cumulative impacts on geology and ground conditions which may arise from the construction, operation and maintenance and decommissioning of the assets alongside the activities of other projects will be assessed. This is likely to include SSEN's new Hurlie Substation, also located in Fetteresso Forest.
- 12.10.2 The proposed approach to the assessment of cumulative effects is set out in Section 4.5, where the range of likely cumulative developments is considered in detail.

12.11 Summary of Proposed Scope

- 12.11.1 The Geology and Ground Conditions section of the Onshore EIA Report will consider the likely significant effects of the Proposed Development given the geology and ground conditions receptors. Baseline studies comprising desk study and field surveys will be undertaken to identify potential receptors and thereby inform the development of appropriate mitigation measures and the impact assessment.
- 12.11.2 In addition, consultation with the relevant stakeholders will assist. As part of the consultation phase of the Proposed Development, environmental data and views on the Proposed Development are anticipated to be sought from:
- SEPA;
 - NatureScot;
 - Aberdeenshire Council; and
 - Ironside Farrar (advisors to the Scottish Government with regard to peat slide risk).
- 12.11.3 The assessment will be undertaken in accordance with relevant guidance.
- 12.11.4 The scoping exercise has concluded that because of potential effects on Geology and Ground Conditions arising from the Proposed Development during the construction, operational and maintenance phases that a Geology and Ground Conditions assessment should be scoped into the Onshore EIA Report.

13 Air Quality

13.1 Introduction

- 13.1.1 This section of the Onshore Scoping Report identifies the air quality receptors and potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.

13.2 Planning Policy and Legislation

- 13.2.1 The policy and legislation relevant to the assessment of Air Quality is listed below and should be considered in addition to Section 2: Policy and Legislation. The NPF4 (2023) and ALDP (2023) provide detail under the Air Quality (Scotland) Regulations 2000 (as amended) and to Air Quality Standards (Scotland) Regulations 2010 (which include the Limit Values, Target Values, Objectives, Critical Levels and Exposure Reduction Targets). The levels in these Regulations are those adopted in Scotland for the purpose of Local Air Quality Management (LAQM) (as set out in the 2000 Regs)).

- NPF4 (2023):
 - Policy 23 Health and Safety - This policy is particularly relevant to air quality, stating that proposals with adverse impacts upon air quality will not be supported and that efforts must be made to improve air quality through development.
- ALDP:
 - Policy P4 Hazardous and Potentially Polluting Developments and Contaminated Land; and
 - Policy PR1 Protecting Important Resources of the Aberdeenshire Local Development Plan (2023)
 - These policies are relevant to air quality stating that proposals with adverse impacts upon air quality will not be supported unless satisfactory steps to mitigate are taken.

13.3 Study Area

- 13.3.1 The Air Quality Study Area for the assessment of air quality impacts will be based on the relevant Environmental Protection UK (EPUK), Institute of Air Quality Management (IAQM) and Highway England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland's DMRB guidance (Section 13.3.6).
- 13.3.2 Although principally developed for the assessment of highway projects, the Highways England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland's DMRB (which as above is applicable across the UK) also provides guidance applicable to the assessment of other linear schemes, including the Proposed Development (e.g. Onshore

Export Cables). In this case, the assessment of vehicle emissions at ecological sites will be undertaken in accordance with the DMRB guidance.

13.3.3 The air quality assessment will consider the potential impacts of the Proposed Development on the following sensitive receptors (landward of MLWS):

- Dust:
 - People and property located within 250 m of the construction work area for the Proposed Development.
 - Ecological receptors sensitive to dust located within 50 m of the construction work area for the Proposed Development.
 - Ecological receptors, people and property sensitive to dust located within 50 m of roads used by construction vehicles, up to a distance of 250 m of the entrance to the construction work areas for the Proposed Development.
- Vehicle Emissions:
 - Human and ecological receptors sensitive to vehicle emissions within 200 m of the road network to be used by construction vehicles where either of the following IAQM indicative criteria are satisfied:
 - A change in Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA), or more than 500 AADT elsewhere.
 - A change in Heavy Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere.

13.3.4 Human receptors to be considered in the air quality assessment include residential and commercial properties (e.g. places of work), educational facilities (e.g. nurseries, schools, colleges), medical facilities (e.g. hospitals, care homes, GP surgeries) and recreational facilities (e.g. golf clubs, parks, PRow).

13.3.5 Ecological receptors to be considered in the air quality assessment include statutory and non-statutory sites designated for nature conservation and protected habitats and species of ecological importance, where these are sensitive to air pollution. In this instance there is a LNCS as outlined in the ALDP at Arbuthnott, and this has the potential to fall within 50m of the Scoping Boundary. However, it sits within the constraints area, as shown in Figure 1.3 and will therefore be considered where relevant.

13.3.6 With regard to vehicle emissions, consistent with Highways England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland's DMRB guidance and IAQM guidance, sensitive receptors located within 200 m of the affected road network will be considered in the air quality assessment. IAQM guidance states that concentrations of air

emissions originating from vehicles decrease with distance and beyond 200 m the road source contribution is not typically discernible from fluctuations in the background.

- 13.3.7 The Air Quality Study Area will be reviewed and modified in response to refined Planning Application Boundary and additional environmental and/or design constraints identified during the EIA process.
- 13.3.8 The size of the Air Quality Study Area is anticipated to be substantially reduced once the precise location of Landfall and Onshore Infrastructure has been refined for the application.

13.4 Data Sources

- 13.4.1 The data sources used to inform the baseline assessment will primarily comprise published material which is publicly available online. An initial desk-based review has identified several data sources which provide baseline data coverage of the Scoping Boundary. These data sources are summarised below:

- Defra Interactive AQMA Boundaries Map based on information reported by local authorities for 2024;
- Defra 2018-based background mapping data for NO₂, PM₁₀ and PM_{2.5};
- Air Quality Progress Reports and Annual Status Reports produced by the relevant local planning authorities; and
- Air Pollution Information System for Site Relevant Critical Loads and background pollutant concentrations and deposition rates at ecological sites.

- 13.4.2 The baseline data sources identified in this Onshore Scoping Report will remain under review and may be updated in response to feedback from relevant statutory and non-statutory consultees during the EIA process, or in response to new sources of information becoming available.

13.5 Baseline Environment

Air Quality Management Areas

- 13.5.1 There are no AQMAs located within the Air Quality Study Area.
- 13.5.2 Aberdeenshire Council have not designated any AQMAs.

Ecological Receptors

- 13.5.3 The Burn of Benholm SSSI may fall within the Air Quality Study Area. It has been designated for its geological features so it is not sensitive to air quality impacts and therefore is proposed to be scoped out of further assessment. The Arbuthnott LNCS may fall within the study area also, this site lies along the Bervie Water and supports valuable seminatural woodland and riparian habitats. A good diversity of woodland and wetland plants are present with locally important species such as blue waterspeedwell. Potential impacts will be assessed.

Human Receptors

- 13.5.4 Human receptors located within the Air Quality Study Area include the occupiers of residential properties associated with towns or villages, including Drumlithie, Arbuthnott and Benholm. The occupiers of rural properties situated outside of existing settlements, but within the Air Quality Study Area, will also be considered in the air quality assessment.
- 13.5.5 Other human receptors located within the Air Quality Study Area include commercial properties, education facilities, medical facilities and recreational facilities.

Future Baseline Conditions

- 13.5.6 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic.

13.6 Embedded Mitigation

- 13.6.1 As part of the design process for the Proposed Development, embedded mitigation measures are proposed to avoid or reduce the potential air quality impacts on sensitive receptors. The following embedded mitigation is relevant to Air Quality and will supplement those measures outlined in Section 3.4.
- CTMP – The movement of construction vehicles entering or exiting construction sites and utilising the local highway network would be controlled as to avoid or reduce potential impacts of air emissions on sensitive receptors (see Section 15: Traffic and Transport)
 - CEMP – Construction of the Proposed Development would be undertaken in accordance with the relevant best practice measures as recommended in the IAQM Guidance on the assessment of dust from demolition and construction (2024). This would include the development a DMP.
 - Decommissioning Plan – This would set out how dust emissions would be controlled during decommissioning of the Proposed Development as to avoid or reduce potential impacts on sensitive receptors.
- 13.6.2 The embedded mitigation measures will evolve as the EIA progresses. The requirement and feasibility of mitigation measures will be consulted upon with statutory consultees throughout the EIA process.
- 13.6.3 Requirements for embedded or additional mitigation measures for air quality and/or dust will be determined through discussions with the Environmental Health Officers (EHOs) from Aberdeenshire Council likely to be affected as part of the air quality assessment.

13.7 Potential Proposed Development Impacts

- 13.7.1 A range of potential impacts on air quality have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

- 13.7.2 The impacts that have been scoped into the assessment are outlined in Table 13.1 together with a description of any additional data collection (e.g., site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 13.7.3 Potential impacts scoped out of the assessment are presented in Table 13.2, with justification.

Table 13.1: Potential impacts proposed to be Scoped In – Air Quality

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
The impact of dust soiling (nuisance) on property arising from dust emissions generated by onsite construction and decommissioning activities	✓	x	✓	Activities required for the construction and decommissioning of the Proposed Development (e.g. earthworks, vehicle track-out) would generate dust emissions which could result in dust soiling effects on human receptors, including people and property.	Property sensitive to dust located within the Air Quality Study Area will be identified using desk-based analysis.	The impact of deposited dust on property will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust from demolition and construction (2024).
The impact of increases in suspended particulate matter on human receptors arising from dust emissions	✓	x	✓	Activities required for the construction and decommissioning of the Proposed Development (e.g. earthworks, vehicle track-out) would generate dust emissions which	Human receptors located within the Air Quality Study Area will be identified using desk-based analysis.	The impact of suspended particulate matter on property will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
generated by onsite construction and decommissioning activities				could result in adverse effects on the health of human receptors.		by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust from demolition and construction (2024).
The impact on human receptors arising from air emissions generated by vehicles during the construction and decommissioning phase	✓	x	✓	Additional vehicle movements required to facilitate construction and decommissioning of the Proposed Development would generate air emissions (i.e. NO ₂ , PM ₁₀ and PM _{2.5}) which could result in adverse effects on the health of human receptors.	Human receptors located within the Air Quality Study Area will be identified using desk-based analysis.	An initial screening assessment will be undertaken to identify areas which may require more detailed assessment of road traffic emissions. The screening assessment will utilise screening criteria set out in the EPUK & IAQM Land-use planning and development control: Planning for air quality (2017) document. The approach to the detailed assessment of

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						road traffic emissions will be consistent with Defra's Local Air Quality Management Technical Guidance: LAQM.TG22 (2022) and the EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document.
The impact of increases in suspended particulate matter on ecological receptors arising from dust emissions generated by onsite construction and decommissioning activities	✓	x	✓	Activities required for the construction and decommissioning of the Proposed Development (e.g. earthworks, vehicle track-out) would generate dust emissions which could result in adverse effects on the health of human receptors.	Ecological receptors located within the Air Quality Study Area will be identified using desk-based analysis.	The impact of suspended particulate matter on ecological receptors will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						from demolition and construction (2024).

* (project phase refers to construction (C), operation and maintenance(O) and decommissioning (D))

Table 13.2: Potential impacts proposed to be Scoped Out – Air Quality

Potential Impact	Justification
The impact on human and ecological receptors (dust soiling and human health) arising from fugitive dust emissions generated during operation and maintenance of the Proposed Development.	Activities associated with the operation and maintenance of the Proposed Development are unlikely to generate large quantities of dust. Therefore, the potential impact on human or ecological receptors arising from fugitive dust emissions generated during operation and maintenance of the Proposed Development is unlikely to be significant and is proposed to be scoped out for air quality.
The impact on human and ecological receptors arising from air emissions generated by vehicle traffic during operation and maintenance of the Proposed Development.	Operation of the Proposed Development will generate a small number of additional two-way vehicle movements as result of staff trips and occasional maintenance activities. However, the additional two-way vehicle movements associated with operation and maintenance of the Proposed Development are unlikely to exceed the EPUK & IAQM indicative criteria for an air quality assessment, irrespective of whether the Air Quality Study Area was located within or adjacent to an AQMA. Therefore, the potential impact on human or ecological receptors arising from air emissions generated by vehicle traffic during operation and maintenance of the Proposed Development is unlikely to be significant and an air quality assessment is proposed to be scoped out.
The impact on human and ecological receptors arising from air emissions generated by plants or stacks during operation and maintenance of the Proposed Development.	The Proposed Development does not include proposals for the construction of plants or stacks which could give rise to air emissions during operation of the Proposed Development. Therefore, the potential impact on human or ecological receptors arising from plant or stack emissions is unlikely to be significant and is proposed to be scoped out of the assessment for air quality.

13.8 Proposed Assessment Methodology

13.8.1 The air quality assessment for the Proposed Development will be undertaken in accordance with the methodology set out in Section 4: EIA Methodology, in addition to the following established guidance:

- Defra's Local Air Quality Management Technical Guidance: LAQM.TG22 (2022);
- EPUK & IAQM – Land-Use Planning & Development Control: Planning for Air Quality (2017);
- IAQM – Guidance on the assessment of dust from demolition and construction (2024); and
- Highways England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland's – DMRB LA 105 (applies to all of the UK) – Air Quality (2019).

13.9 Potential Inter-Relationships

13.9.1 The potential inter-relationships of the Proposed Development with respect to Air Quality will be considered in the Onshore EIA Report. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. For example, there are potential inter-relationships with:

- Section 8: Biodiversity and Terrestrial Ecology
 - Dust deposition during construction and decommissioning of the Proposed Development may have an impact on biodiversity and terrestrial ecology due to the presence of an LNCS within the Air Quality Study Area. The risk of dust impacts on ecological receptors will be assessed where required.
- Section 15: Traffic and Transport:
 - Additional vehicle movements generated during construction and decommissioning of the Proposed Development would be used to identify areas within the Air Quality Study Area which required further detailed air quality assessments.
- Section 17: Socio-Economics, Tourism and Recreation:
 - There may be a reduction in the appeal, enjoyment and accessing of recreational areas as a result of the Proposed Development which relates to air quality impacts.

13.9.2 It is not considered that operation and maintenance of the Proposed Development will result in significant inter-related impacts with respect to air quality. Therefore, it is proposed that the potential inter-related impacts arising from operation of the Proposed Development are scoped out of the assessment for air quality. Similarly, there is the potential for dust and air emissions to have impacts upon ecological receptors, however as per Table

13.2, these can be scoped out via the successful implementation of embedded mitigation measures.

13.10 Potential Cumulative Effects

- 13.10.1 It is considered that most of the potential impacts as a result of construction and decommissioning of the Proposed Development are likely to be limited to within the Air Quality Study Area.
- 13.10.2 However, there is potential for cumulative impacts to occur on sensitive receptors between the Proposed Development and other developments within the Aberdeenshire region. The potential cumulative effects of the Proposed Development together with other developments with respect to air quality will be considered within the Onshore EIA Report.
- 13.10.3 The proposed approach to the assessment of cumulative effects is set out in Section 4.5, where the range of likely cumulative developments is considered in detail.
- 13.10.4 It is not considered that operation and maintenance of the Proposed Development will result in significant impacts on air quality either alone or cumulatively with other developments. Therefore, it is proposed that the potential impacts arising from operation of the Proposed Development are scoped out of the cumulative effects assessment for air quality.

13.11 Summary of Proposed Scope

The impact of deposited dust on property, human health and ecological receptors will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust from demolition and construction (2024) and mitigation measures proportionate to the risk will be recommended to ensure the air quality effects are not significant.

14 Noise and Vibration

14.1 Introduction

- 14.1.1 This section of the Onshore Scoping Report identifies the noise and vibration receptors of relevance to the Proposed Development and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.

14.2 Planning Policy and Legislation

- 14.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of noise and vibration is set out below.

- Control of Pollution Act 1974 (CoPA);
- Environmental Protection Act 1990 (EPA);
- NPF4;
 - Policy 11 highlights the need for renewable energy projects to address impacts on communities and individual dwellings due to noise.
 - Policy 23 states that a noise impact assessment is required to predict and minimise noise impacts from new development proposals.
- Planning Advice Note 1/2011: Planning and Noise (PAN1);
- Technical Advice Note: Assessment of Noise (TAN); and
- ALDP 2023.
 - Policy P4 of the ALDP states that a noise impact assessment should be undertaken and, where significant detrimental impacts are identified, mitigation measures must be provided.

- 14.2.2 The following standards and guidance have also been taken into account:

- BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound ((British Standards Institution (BSI), 2019);
- BS 5228:2009+A1:2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise and Part 2: Vibration (BSI, 2014);
- BS 7445-1:2003 – Description and measurement of environmental noise. Guides to quantities and procedures (BSI, 2003);
- BS 7445-2:1993 – Description and measurement of environmental noise. Guide to the acquisition of data pertinent to land use (BSI, 1993);
- BS 7445-3:1991 – Description and measurement of environmental noise. Guide to application to noise limits (BSI, 1991);
- Calculation of Road Traffic Noise (CRTN) (Department for Transport, 1988);

- DMRB LA 111 Rev 2 – Noise and Vibration (DMRB LA111) (Highways England *et al.*, 2020); and
- World Health Organisation (WHO) Guidelines for Community Noise (WHO, 1999).

14.3 Study Area

14.3.1 The study area for the assessment of noise and vibration impacts (Noise and Vibration Study Area) will consider the potential impacts on noise sensitive receptors arising from the construction, operations and maintenance, and decommissioning of the Proposed Development.

14.3.2 The Noise and Vibration Study Area has been defined in line with best practice guidance and considers the regions in which potential impacts are most likely to occur at receptors sensitive to noise and vibration.

14.3.3 The construction and decommissioning Noise and Vibration Study Area has been defined with reference to the guidance in the Design Manual for Roads and Bridges LA111 – Noise and Vibration (DMRB LA111 (2020)). Note 1 of paragraph 3.5 of DMRB LA111 (2020) states the following regarding noise sensitive receptors:

‘A study area of 300 m from the closest construction activity is normally sufficient to encompass noise sensitive receptors.’

14.3.4 Similarly, Note 1 of paragraph 3.29 of DMRB LA111 (2020) states the following regarding vibration sensitive receptors:

‘A study area of 100 m from the closest construction activity with the potential to generate vibration is normally sufficient to encompass vibration sensitive receptors.’

14.3.5 The assessment of operation and maintenance noise impacts will be undertaken at the nearest noise-sensitive receptors most likely to be affected by noise during the operation phase of the Proposed Development. These have been identified as being situated within a study area of 500 m from the location of the operational noise sources associated with the Proposed Development sited within the Substation compound.

14.3.6 In summary, the Noise and Vibration Study Areas to be used in the assessment will be defined as:

- The area of land temporarily or permanently occupied during the construction, operation and maintenance, and decommissioning of the Proposed Development;
- Noise sensitive receptors located within 300 m of construction activities;
- Vibration sensitive receptors located within 100 m of construction activities with the potential to generate vibration; and
- Noise sensitive receptors located within 500 m of the operational noise sources.

14.4 Data Sources

Desk-Based Data Sources

- 14.4.1 The baseline data that will be used to inform the noise and vibration assessment will be gathered from sources identified in Table 14.1.

Table 14.1: Noise and vibration baseline data sources

Data Source	Evidence
Ordnance Survey (OS)	OS raster data has been used to obtain a regional view of the area surrounding the Proposed Development. Additionally, OS AddressBase Plus data has been obtained to identify the locations of the noise and vibration sensitive receptors within the Noise and Vibration Study Area.
Google Earth Imagery	Satellite imagery has supplemented the OS raster data as part of the review of the area surrounding the Proposed Development.

Site-Specific Survey Data

- 14.4.2 Baseline sound surveys will be undertaken to characterise and quantify the existing acoustic environment at the nearest noise-sensitive receptors to the Proposed Development. The location of the baseline sound survey positions will be determined through a desk-based review of OS mapping data and satellite imagery to identify sensitive receptors within the Noise and Vibration Study Areas which are most likely to be impacted by noise generated during construction, operation and maintenance and decommissioning of the Proposed Development.
- 14.4.3 The location of baseline sound surveys will be suitably representative and agreed with the relevant EHOs from Aberdeenshire Council.
- 14.4.4 In addition, a weather station will be deployed at a minimum of two locations to record site-specific meteorological conditions whilst baseline sound surveys are being undertaken. The meteorological information collected during the baseline surveys will be reviewed and, if appropriate, data will be removed from the dataset to ensure that representative ambient and background noise levels can be derived.
- 14.4.5 The baseline sound surveys will be undertaken in accordance with British Standard (BS) 4142:2014 Methods for rating and assessing industrial and commercial sound and BS 7445:1991 Description and measurement of environmental noise Part 2: Guide to the acquisition of data pertinent to land use.

14.5 Baseline Environment

- 14.5.1 A large proportion of the area within the Noise and Vibration Study Area is located within a rural and agricultural setting, which may be indicative of low ambient sound levels. However, ambient sound levels within the Noise and Vibration Study Area are likely to be higher in areas located in proximity

to urban areas, including the nearby settlements of Gourdon and Drumlithie.

- 14.5.2 In addition, higher ambient sound levels are likely to be experienced by sensitive receptors located in proximity to the local highway network, such as the A90 or A92, or other forms of transport infrastructure (e.g., railways) present within the Noise and Vibration Study Area.

Future Baseline Conditions

- 14.5.3 The Noise and Vibration Study Area comprises a mixture of fields and farmland with residential settlement areas and open roads. It is therefore considered that any increase in the overall baseline noise levels will result from increased traffic flows. As such, it is not anticipated that the future baseline scenario will change significantly in the absence of the development during the future baseline year for all phases of the Proposed Development.
- 14.5.4 It is worth noting that as the proportion of road traffic vehicles which are electrically powered increases, it is possible that traffic noise levels may reduce slightly due to the lower engine-noise levels, although on open roads and motorways, there will still be influence from noise due to tyre-road interaction and aerodynamic deflections over the vehicle surface.

14.6 Embedded Mitigation

- 14.6.1 .
- 14.6.2 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 14.6.3 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 14.6.4 The following embedded mitigation is relevant to noise and vibration. This is in addition to the overarching Design Principles as outlined in Section 3.4:
- CTMP – The movement of construction vehicles entering or exiting construction sites and utilising the local highway network would be controlled as to avoid or reduce potential impacts of noise emissions on sensitive receptors.
 - CEMP – Construction of the Proposed Development would be undertaken in accordance with the relevant best practice measures as recommended in BS 5228.
 - The following noise control measures will be considered in the design of the Substation:

- The orientation and layout of the Substation will be designed to minimise noise levels at nearby receptors.
- Quieter equipment may be selected to meet the appropriate noise levels at receptors.
- Other mitigation measures such as acoustic barriers and enclosures will be specified where necessary and appropriate.

14.6.5 Requirements for noise and vibration mitigation measures will be refined through discussions with the relevant EHOs from Aberdeenshire Council as part of the noise and vibration assessment.

14.7 Potential Proposed Development Impacts

14.7.1 A range of potential impacts on noise and vibration receptors have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

14.7.2 The impacts that have been scoped into the assessment are outlined in Table 14.2 together with a description of any additional data collection (e.g., site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.

14.7.3 Potential impacts scoped out of the assessment are presented in Table 14.3, with justification.

Table 14.2: Potential impacts proposed to be Scoped In – Noise and Vibration

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
The impact of noise and vibration generated by construction and decommissioning activities for the Proposed Development on human receptors	✓	x	✓	Activities required for the construction and decommissioning of the Proposed Development would generate noise and vibration emissions which could adversely affect the health and quality of life of human receptors.	Human receptors sensitive to noise and vibration located within the Noise and Vibration Study Area will be identified using desk-based analysis. Where existing baseline data coverage is insufficient, and where significant effects may occur, baseline sound levels will be obtained through sound monitoring surveys. The locations and durations of baseline sound surveys will be suitably representative, focused on key areas of impact and agreed with the Aberdeenshire Council EHO.	Predicted noise and vibration levels arising from onsite construction and decommissioning activities will be calculated via 3D acoustic modelling and assessed in accordance with BS 5228, where applicable. Consideration will also be given to recreational receptors, where necessary, to protect the amenity of the local natural environment for the public. The significance of likely effects will be determined in accordance with the IEMA Guidelines for Environmental Noise Impact Assessment (2014).
The impact of noise generated by	✓	x	✓	Additional vehicle movements on the local	Human receptors sensitive to noise and vibration	Predicted noise levels arising from additional

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
additional vehicle movements on the local highway network during the construction and decommissioning phases for the Proposed Development on human receptors				highway network required to facilitate construction and decommissioning of the Proposed Development would generate noise emissions which could adversely affect the health and quality of life of human receptors.	located within the Noise and Vibration Study Area will be identified using desk-based analysis. Where existing baseline data coverage is insufficient, baseline sound levels will be obtained through sound monitoring surveys. The locations and durations of baseline sound surveys will be suitably representative and agreed with the EHO from Aberdeenshire Council. The number of additional vehicle movements required to facilitate construction and decommissioning of the Proposed Development will be determined as part of the assessment for Traffic and Transport (see	vehicle movements during the construction and decommissioning phase will likely be calculated using the CRTN. If the traffic volumes fall below the thresholds of CRTN then an alternative method may be used, or corrections may be applied to the data, as appropriate. The guidance in DMRB LA 111 Rev 2 – Noise and Vibration will be used as a basis for the impact of traffic noise on human receptors. However, as this is not a new road scheme, this guidance is not directly applicable, and a full assessment is not required. The details of the scenarios to be assessed will be evaluated

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
					Section 15: Traffic and Transport).	following receipt of the traffic data. The significance of likely effects will be determined in accordance with the IEMA Guidelines for Environmental Noise Impact Assessment (2014).
The impact of noise generated during the operation and maintenance of the Substation on human receptors	x	✓	x	Operation of the Substation would generate noise emissions which could adversely affect the health and quality of life of human receptors.	Human receptors sensitive to noise and vibration located within the Noise and Vibration Study Area will be identified using desk-based analysis. Where existing baseline data coverage is insufficient, baseline sound levels will be obtained through sound monitoring surveys. The locations and durations of baseline sound surveys will be suitably representative and agreed with the EHO	Predicted noise levels arising from the operation of the Substation will be calculated using 3D acoustic modelling software implemented the methodology outlined in ISO 9613-2. High voltage transformers are known to be tonal at low frequency (around 100 Hz) and subsequent harmonics in their noise emission spectrum. As such, consideration will be given to the low frequency components of the substation noise emission

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
					from Aberdeenshire Council.	spectrum to reduce adverse impacts at nearby receptors. An assessment of any cumulative operational noise impacts with other developments proposed nearby will be undertaken to minimise avoid significant cumulative effects at nearby receptors. The impact of noise on human receptors will be assessed in accordance with BS 4142 and relevant World Health Organisation guidance. The significance of likely effects will be determined in accordance with the IEMA Guidelines for Environmental Noise Impact Assessment (2014).

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D))

Table 14.3: Potential impacts proposed to be Scoped Out – Noise and Vibration

Potential Impact	Justification
The impact on human receptors and heritage assets arising from vibration generated by additional vehicle movements on the local highway network during construction and decommissioning of the Proposed Development	Additional vehicle movements on the local highway network during construction and decommissioning of the Proposed Development are unlikely to generate sufficiently high levels of vibration to result in significant adverse effects.
The impact on human receptors and heritage assets arising from vibration generated during the operation and maintenance of the Proposed Development.	The equipment forming the plant strategy for the onshore substation will include vibration isolation measures at the source as part of the engineering design. As such, vibration during the operational phase of the Proposed Development is unlikely to result in significant adverse effects.
The impact of noise and vibration generated during the operation and maintenance of the Onshore Export Cable and associated infrastructure.	The Onshore Export Cables are to be installed underground and will not generate any level of noise and vibration during the operation phase. As such, it is unlikely that there will be and significant noise and vibration effects.

14.8 Proposed Assessment Methodology

14.8.1 The noise and vibration assessment for the Proposed Development will be undertaken in accordance with the methodology set out in Section 4: EIA Methodology, in addition to the following established guidance:

- BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound (BSI, 2019);
- BS 5228:2009+A1:2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise and Part 2: Vibration (BSI, 2014);
- Calculation of Road Traffic Noise (CRTN) (Department for Transport, 1988);
- DMRB LA 111 Rev 2 – Noise and Vibration (DMRB LA111) (Highways England *et al.*, 2020);
- IEMA – Guidelines for Environmental Noise Impact Assessment (2014);
- ISO 9613-2:1996 – Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation (1996);
- Technical Advice Note: Assessment of Noise (TAN); and
- World Health Organisation (WHO) Guidelines for Community Noise (WHO, 1999).

- 14.8.2 Although principally developed for the assessment of highway projects, the DMRB also provides guidance applicable to the assessment of other linear schemes, including the Proposed Development (e.g., onshore export cables).
- 14.8.3 The approach to assessment and level of detail will depend on the elements of the Proposed Development under consideration and whether effects are temporary or permanent.
- 14.8.4 It is understood from recent experience on renewable energy developments in Aberdeenshire that the Local Authority prefer the assessment of operational noise sources be undertaken with reference to an internal noise criterion or NR20. Moreover, full details of the sound power level data for each plant item and details of mitigation measures proposed will be submitted to the Local Authority for agreement in consultation with Environmental Health.

14.9 Potential Inter-Relationships

- 14.9.1 The assessment of potential inter-relationships will be considered within the Noise and Vibration Onshore EIA Report Chapter. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There are potential inter-relationships with other topics, for example:
- Section 8: Biodiversity and Terrestrial Ecology:
 - Noise and vibration emissions generated during construction and operation and maintenance of the Proposed Development may impact sites designated for nature conservation and protected habitats and species within the Noise and Vibration Study Area. The assessment on ecological receptors will be led by the ecologists.
 - Section 9: Terrestrial Ornithology:
 - Noise and vibration emissions generated during construction (including construction traffic on local highway networks) and operation and maintenance of the Proposed Development may impact IOFs.
 - Section 10: Landscape and Visual Impact Assessment:
 - The creation of noise attenuation measures such as acoustic barriers or bunds has the potential to impact on landscape and visual receptors.
 - Section 15: Traffic and Transport:
 - Additional vehicle movements generated during construction of the Proposed Development would be used to identify areas within the Noise and Vibration Study Area which require further detailed assessment.
 - Section 17: Socio-Economics, Tourism and Recreation:

- There may be a reduction in the appeal, enjoyment and accessing of recreational areas as a result of the Proposed Development which relates to noise and vibration impact and any disruption related to this.

14.10 Potential Cumulative Effects

- 14.10.1 There is potential for cumulative effects on sensitive receptors to occur when the Proposed Development is considered together with other developments. The potential cumulative effects between the Proposed Development and other developments with respect to noise and vibration will be considered within the Onshore EIA Report.
- 14.10.2 The proposed approach to the assessment of cumulative effects is set out in Section 4.5, where the range of likely cumulative developments is considered in detail.
- 14.10.3 In particular, the total operational noise levels from the Substation and other developments proposed (such as renewable energy schemes, industrial/commercial facilities) will be considered to ensure that significant adverse cumulative effects are avoided.

14.11 Summary of Proposed Scope

- 14.11.1 Baseline sound surveys will be undertaken at locations representative to the nearest noise and vibration sensitive receptors to the Proposed Development site. The baseline data sources identified in this Onshore Scoping Report will remain under review and may be updated in response to feedback from relevant statutory and non-statutory consultees during the EIA process, or in response to new sources of information becoming available.
- 14.11.2 Noise and Vibration Study Areas have been defined for each phase of the Proposed Development and are described within this Onshore Scoping Report.
- 14.11.3 The noise and vibration assessment will provide details of the likely impacts and significant effects which may arise as a result of noise and vibration during the construction, operation and maintenance, and decommissioning phases of the Proposed Development. In summary:
- The impact of noise and vibration generated by construction and decommissioning activities for the Proposed Development on human receptors.
 - The impact of noise generated by additional vehicle movements on the local highway network during the construction and decommissioning phases for the Proposed Development on human receptors.
 - The impact of noise generated during the operation and maintenance of the converter stations on human receptors.
- 14.11.4 The assessment of impacts and effects will be undertaken in accordance with nationally accepted guidance and industry best practice.

14.11.5 The impacts proposed to be scoped out of the assessment of noise and vibration include:

- The impact on human receptors and heritage assets arising from vibration generated by additional vehicle movements on the local highway network during construction and decommissioning of the Proposed Development.
- The impact on human receptors and heritage assets arising from vibration generated during the operation and maintenance of the Proposed Development.
- The impact of noise and vibration generated during the operation and maintenance of the Onshore Export Cable and associated infrastructure.

15 Traffic and Transport

15.1 Introduction

- 15.1.1 This section of the Onshore Scoping Report identifies the traffic and transport receptors of relevance to the Proposed Development and will consider the potential impacts arising from the construction, operation and maintenance and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.

15.2 Planning Policy and Legislation

- 15.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of traffic and transport is set out below.
- NPF4 (2023):
 - Policy 13: Sustainable transport
 - ALDP (2023):
 - Policy RD1 Providing Suitable Services
 - Policy RD2 Developer Obligations

15.3 Study Area

- 15.3.1 A proposed Traffic and Transport Study Area has been defined on Figure 15.1. It has been produced using professional judgement and the expected routes to be used by construction vehicles before which they would dissipate to levels where impacts would be not significant and/or form only low proportions of existing traffic flows such that impacts would be not significant.
- 15.3.2 Agreement will be sought with Aberdeenshire Council and Transport Scotland, as the road authorities, regarding any additional parts of the road network that may need to be considered in the traffic and transport assessment in the Onshore EIA Report.
- 15.3.3 The Traffic and Transport Study Area will be reviewed and modified, if necessary, in response to any refinements that may be made to the design of the Proposed Development and/or any additional environmental and/or design constraints identified during the EIA process.

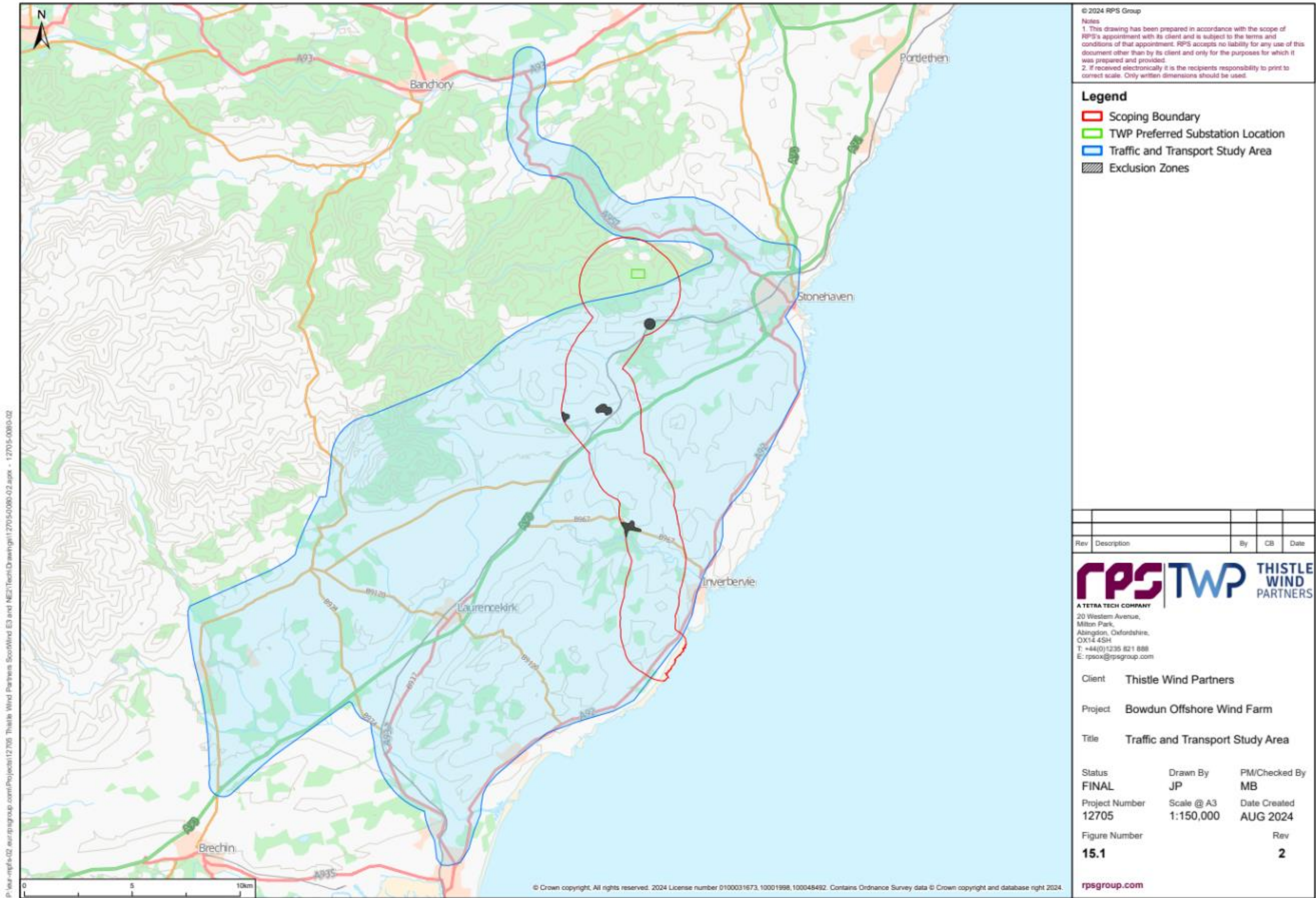


Figure 15.1: Traffic and Transport Study Area

15.4 Data Sources

15.4.1 The baseline data that will be used to inform the traffic and transport assessment will be gathered from sources identified in Table 15.1.

Table 15.1: Traffic and transport baseline data sources

Data Source	Dataset
Aberdeenshire Council, Transport Scotland	Existing traffic flow information from Aberdeenshire Council, Transport Scotland and National Highways to identify the current operation of the road network. This will include results from Automatic Traffic Counts (ATCs) and manual classified counts.
CrashMap, Aberdeenshire Council and Transport Scotland	Personal Injury Accident data for road traffic collisions will also be obtained from CrashMap, Aberdeenshire Council and Transport Scotland.
Bus and rail service operators	Records of existing bus and rail services will be obtained from a desktop analysis of route maps and timetables published by the relevant service operators.
Aberdeenshire Council and ScotWays	Records of existing PRoW, core paths and cycle routes will be obtained from Aberdeenshire Council and ScotWays. Records of the adopted road boundary will be obtained from Aberdeenshire Council, where available.
Sustrans Interactive Mapping System Great Britain: National Cycle Network Map.	Details of National Cycle Network routes located within the Traffic and Transport Study Area.

15.4.2 In addition to the existing data sources identified above, the following site-specific surveys will inform the baseline assessment for traffic and transport in the Onshore EIA Report:

- ATCs placed at key locations on the road network within the Traffic and Transport Study Area where the road authorities do not hold any such data to inform the baseline assessment for traffic and transport. ATCs would record total traffic volumes, vehicle classifications and vehicle speeds via pneumatic tubes installed across the carriageway at key sections of the road network over a two-week (14-day) period.

15.5 Baseline Environment

15.5.1 This section sets out a high-level overview of the baseline environment based on an initial review of desktop data sources.

Road Network

- 15.5.2 The Traffic and Transport Study Area shown on Figure 15.1 is characterised by the A90 forming part of the Trunk Road Network dissecting it broadly in half and will form a key access route for construction vehicles travelling to and from the Proposed Development.
- 15.5.3 It is generally a dual carriageway road, routeing broadly north east to south west between Fraserburgh and Edinburgh via Aberdeen, Stonehaven, Forfar, Dundee, Perth, Dunfermline and South Queensferry (only its section between Ellon and Fraserburgh is single carriageway). Its section between Perth and the Queensferry Crossing, at South Queensferry, is of Motorway standard and is the M90.
- 15.5.4 The A92 routes broadly north east to south west through the eastern side of the Traffic and Transport Study Area along the east coast between Blackdog and Dunfermline via Aberdeen, Stonehaven, Inverbervie, Gourdon, Johnshaven, Montrose, Arbroath, Dundee, Glenrothes and Kirkcaldy. In the vicinity of the Traffic and Transport Study Area, it provides access to the A92 at a number of locations:
- direct access to the A90 via slip roads and merge and diverge tapers at Stonehaven;
 - access via the B967 which routes broadly east to west between Inverbervie and Gourdon respectively, forming the minor arm of a priority controlled junction with a protected right turn lane on the A90;
 - access via the B9120 which routes broadly south east to north west between St Cyrus and Laurencekirk respectively, forming the minor arm of a staggered crossroads junction with protected right turn lanes on the A90;
 - access via the A937 which routes broadly south east to north west between Montrose and Laurencekirk respectively, forming the minor arm of a staggered crossroads junction with protected right turn lanes on the A90; and
 - access via the B974 which routes broadly south east to north west between the A937 and Luthermuir respectively, forming the minor arm of a priority controlled junction with a protected right turn lane on the A90.
- 15.5.5 The B967, A937 and B974 are all generally single carriageway roads of varying widths, geometries and alignments, however, the B9120 is a narrow single carriageway road with no central white lining.
- 15.5.6 There are a number of other unclassified roads between the A90 and A92, all of which are generally narrow single carriageway road with no central white lining or are single tracks.
- 15.5.7 In northern parts of the Traffic and Transport Study Area, between Fetteresso Forest and the A90, the roads are unclassified with varying widths, geometries and alignments and are generally narrow single carriageway roads with no central white lining or are single tracks.

- 15.5.8 To the north of Fetteresso Forest is the A957 Slug Road, which routes broadly south east to north west between Stonehaven and the A93 at Crathes. It is noted that SSEN Transmission are proposing the Hurlie Substation in this broad location and their latest consultation documents, (Hurlie 400kV substation - SSEN Transmission (SSEN, 2024b) dated March 2024, suggest access could be taken through the Fetteresso Forest from the A957 Slug Road.
- 15.5.9 Parts of the Cable Corridor area of search and the Substation search area are located between the A90 and the A957 Slug Road. Access will be required for construction vehicles to these locations and the route options will be subject to analysis to define proposed access routes. As such, these roads between the A90 and the A957 Slug Road are included within the Traffic and Transport Study Area.

Other Transport Receptors

- 15.5.10 National Cycle Network Route 1 routes broadly south west to north east along the east coast. It is partly along the A92 for short sections around Inverbervie and to the south of Stonehaven, however, it is generally along lightly trafficked roads through the Traffic and Transport Study Area.
- 15.5.11 The route of National Cycle Network Route 1 through the Traffic and Transport Study Area is also a core path as shown on Figure 7.3.
- 15.5.12 The Traffic and Transport Study Area is generally rural but there are some residential homes and properties throughout. There are built up areas along some parts of the Traffic and Transport Study Area such as Stonehaven and Inverbervie where there are residential properties, footways and pedestrian activity. The sensitivity of these will be considered as part of the baseline environment.
- 15.5.13 National Cycle Network routes and core paths are also considered in Section 7: Land Use, Soils, Agriculture and Public Access.

Future Baseline Conditions

- 15.5.14 The EIA process will consider the existing baseline conditions within the Traffic and Transport Study Area and the future baseline conditions (as far as reasonably practicable) from the application of traffic growth rates and considerations to any committed developments or committed transport interventions, to be agreed with Aberdeenshire Council and Transport Scotland, as the road authorities. These will include committed developments and interventions that have already been assessed by Aberdeenshire Council and Transport Scotland as part of the planning process, have received planning consent and thus form part of the predicted future year baseline scenario in traffic and transport terms.

15.6 Embedded Mitigation

- 15.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 15.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 15.6.3 The following embedded mitigation is relevant to traffic and transport. This is in addition to the overarching Design Principles as outlined in Section 3.4:
- Commitment to the preparation of a CTMP. The movement of construction vehicles entering or exiting construction sites and utilising the road network would be controlled, to avoid or reduce potential impacts on sensitive receptors.
 - Measures listed in Section 3.4 and 3.5. These include “making good” any amendments to public roads for access, such as passing places. All construction upgrades will be constructed to adoptable standards which will also allow the option for the roads authority to adopt after use, if considered to be of public benefit.

15.7 Potential Proposed Development Impacts

- 15.7.1 A range of potential impacts on traffic and transport have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 15.7.2 The impacts that have been scoped into the assessment are outlined in Table 15.2 together with a description of any additional data collection (e.g., site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 15.7.3 Potential impacts scoped out of the assessment are presented in Table 15.3, with justification.

Table 15.2: Potential impacts proposed to be Scoped In – Traffic and Transport

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
The impact upon drivers (including public transport) and non-motorised users resulting from increases in traffic flows as a result of construction traffic or works	✓	x	x	Additional vehicle movements or works required to facilitate construction of the Proposed Development may impact the effective operation of the road network and other transport receptors (e.g. core paths) and cause driver (including public transport) and non-motorised user delay /impact on fear and intimidation (non-motorised user amenity).	The road network and other transport receptors located within the Traffic and Transport Study Area will be identified using desk-based analysis. Records of existing public transport services will be obtained from the relevant public transport service operators. Existing traffic flow information for the road network, including ATCs and manual classified counts, will be obtained from the road authorities.	The type, number, frequency and assignment of additional vehicle movements on the road network generated during construction will be predicted using first principles, from an understanding of the construction process, likely material quantities and construction programme. The location of any crossings or cable trenching within any local roads will be identified.
The impact upon severance for users of the road network resulting from increases in traffic flows as a result of construction traffic or works	✓	x	x	Additional vehicle movements or works required to facilitate construction of the Proposed Development could limit the mobility/access of users	In addition, existing traffic data will be supplemented by further	Where predicted traffic flows within the Traffic and Transport Study Area exceed Rule 1 or Rule 2 of the IEMA guidelines (IEMA, 2023),

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
				of the road network and other transport receptors (e.g., core paths), causing severance between communities.	site-specific surveys, if required. The scope of any site-specific surveys will be agreed with the road authorities. These baseline data sources will be discussed with the road authorities to enable a single baseline year and future reference year scenarios to be created on an agreed basis.	or where any cable trenching would be within a local road, the impact of these upon driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity) and severance for users of the road network will be assessed in accordance with the Environmental Assessment of Traffic and Movement (IEMA, 2023). The impact of additional vehicle movements upon the effective operation and performance of key road links and junctions of the road network (in terms of road capacity) will be assessed as part

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						of the Onshore EIA Report. Assessments will be undertaken in accordance with Transport Assessment Guidance (Transport Scotland, 2012), Environmental Assessment of Traffic and Movement (IEMA, 2023) and DMRB LA104: Environmental Assessment and Monitoring (National Highways, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland, 2020).
The impact upon road safety for users of the road network and other transport receptors resulting	✓	x	x	Additional vehicle movements required to facilitate construction of the Proposed	The road network and other transport receptors located within the Traffic and	The type, number, frequency and assignment of additional vehicle movements on

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
from increases in traffic flows as a result of construction traffic or works due to, for example, cable trenching				Development could impact the safety of users of the road network and other transport receptors (e.g., core paths)	Transport Study Area will be identified using desk-based analysis. Personal Injury Accident data for the road network will be obtained using a combination of Crashmap and records held by the road authorities.	the road network generated during construction of the Proposed Development will be predicted using first principles, from an understanding of the construction process, likely material quantities and construction programme. An analysis of Personal Injury Accident data, including Crashmap, will be undertaken to identify locations on the road network which exhibit concentrations ('clusters') of collisions with similar contributory factors. These locations on the road network will be considered as receptors sensitive to changes in

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						traffic flows and will be subject to further detailed impact assessment using Personal Injury Accident (PIA) data obtained from Aberdeenshire Council and Transport Scotland. The impact of these additional vehicle movements on road safety for users of the road network will be assessed in accordance with Transport Assessment Guidance (Transport Scotland, 2012), in addition to the application of professional judgement where required.
The impact upon the safety of users of the road network and other transport receptors resulting	✓	x	x	Construction of the Proposed Development will require the transportation of AILs,	The road network and other transport receptors located within the Traffic and	A qualitative assessment of the impact of AILs on the safety of users of the road network and

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
from Abnormal Indivisible Loads (AILs)				which may impact the safety of users of the road network and other transport receptors (e.g., core paths)	Transport Study Area will be identified using desk-based analysis.	other transport receptors will be undertaken using professional judgement where required. This will comprise analysis to identify sections of the road network which may require modifications to facilitate the transport of AILs to the Proposed Development.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D))

Table 15.3: Potential impacts proposed to be Scoped Out – Traffic and Transport

Potential Impact	Justification
The impact of additional vehicle movements on the road network on drivers and non-motorised users during operation and maintenance of the Proposed Development.	Operation and maintenance of the Proposed Development is likely to generate an infrequent number of additional vehicle movements on the road network. The Proposed Development will not require any manned facilities and requires only infrequent maintenance activities. Therefore, the potential impact of additional vehicle movements on the road network and other transport receptors during operation and maintenance of the Proposed Development is unlikely to result in significant effects and is proposed to be scoped out of the assessment for traffic and transport.
The impact of additional vehicle movements on the road network on drivers and non-motorised users during decommissioning of the Proposed Development.	Decommissioning of the Proposed Development will generate a lower number of additional vehicle movements on the road network than the construction phase. This is because retired infrastructure/equipment would either be left <i>in situ</i> or transported away from site in bulk, reducing the number of additional vehicle movements required to facilitate decommissioning of the Proposed Development. Measures to be included in the CTMP, updated as necessary, will also be employed during the decommissioning phase. Therefore, the potential impact of additional vehicle movements on the road network and other transport receptors during decommissioning of the Proposed Development, based upon the baseline conditions that could be estimated at this time, would be no higher than those impacts during the construction phase and is proposed to be scoped out of the assessment for traffic and transport.

15.8 Proposed Assessment Methodology

15.8.1 Guidance documents relevant to traffic and transport that will be considered within the assessment process include the following:

- Environmental Assessment of Traffic and Movement, IEMA, 2023 (the 'IEMA Guidelines'); and
- DMRB LA104: Environmental Assessment and Monitoring (Highways England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland, 2020).

15.8.2 Additional vehicle movements generated during construction of the Proposed Development will be determined using first principles, from an

understanding of the construction process, likely material quantities and construction programme as the design progresses.

- 15.8.3 A detailed analysis of the road network will then be undertaken to identify key locations where potential traffic and transport impacts may occur. This analysis will identify road network constraints and inform the access strategy for construction related vehicles (i.e. types, numbers, frequency and timings).
- 15.8.4 The access strategy to be utilised during the construction of the Proposed Development will be consulted and agreed upon with the road authorities.
- 15.8.5 The assessment within the chapter will include an integrated Transport Assessment and will predict the traffic flows generated on the road network during the construction of the Proposed Development using first principles. These predicted traffic flows will be assessed against forecast baseline traffic flows to determine if an impact is likely to occur. The scope and duration of predicted impacts will be quantified for each phase of the construction programme.
- 15.8.6 In addition, the Onshore EIA Report will include an outline of the proposed construction compounds, which will be further developed as the design progresses, to indicate the potential size and broad spread of construction compounds that are likely to be required.
- 15.8.7 In terms of the assessment of the environmental impacts of traffic and movement, the IEMA guidelines sets out the following two ‘rules’ to delimit the geographic extent of assessment:
- Rule 1 – Include road links where traffic flows will increase by more than 30% or where the number of Heavy Goods Vehicles (HGVs) will increase by more than 30%.
 - Rule 2 – Include any other specifically sensitive areas where traffic flows have increased by 10% or more.
- 15.8.8 The assessment will therefore identify the sensitivity of affected transport routes, taking into account the presence and location of sensitive receptors or route users. The definition of sensitivity in this section uses professional judgement, guidance provided in the IEMA guidelines, and the criteria outlined in Table 15.4.

Table 15.4: Definitions of sensitivity – Traffic and Transport

Sensitivity	Definition
High	High concentration of receptors with greatest sensitivity due to site-specific characteristics which make them particularly sensitive to changes in traffic flow, high concentrations of road collisions (‘clusters’) with reference to PIA data, urban/residential/built-up roads without commensurate footway provision, high footfall, severely congested junctions.

Sensitivity	Definition
Medium	Some concentrations of receptors with some sensitivity to traffic flows including congested junctions, urban/residential/built-up areas with narrow footway provision for its use, demand and footfall or with receptors where there are no/limited setbacks from affected roads and junctions, unsegregated cycleways, roads with some concentrations of road collisions ('clusters').
Low	Low concentrations of receptors with some sensitivity to traffic flows including urban/residential/built-up areas with good footway provision commensurate for its use, demand and footfall and other receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions
Negligible	Receptors with negligible sensitivity to traffic flows and those sufficiently distant from affected roads and junctions or where no receptors are present.

- 15.8.9 Rules 1 and 2 are used as a tool to delimit the geographic extent of assessment. Road links which are identified as negligible, low or medium sensitivity will be considered against the Rule 1 threshold. Road links which are identified as high sensitivity will be considered against the Rule 2 threshold. Where predicted changes in traffic flow fall beneath these levels, a full assessment of effects will not be required and no significant effects upon that road link would be predicted.
- 15.8.10 Consistent with the IEMA guidelines, the following will be considered within the traffic and transport assessment:
- driver delay (including public transport);
 - severance;
 - non-motorised user delay;
 - fear and intimidation (non-motorised user amenity);
 - road safety; and
 - AILs,
- 15.8.11 Based upon the advice contained within the IEMA guidelines, sets out the considerations for defining the magnitude of change.

Table 15.5: Definitions of magnitude of change – Traffic and Transport

	Negligible	Low	Medium	High
Driver delay	Defined in accordance with Transport Assessment guidance and a review of the change in operation of a junction or road link with a particular focus on the weekday peak hour periods when baseline traffic flows are at their highest.			
Severance	Change in total traffic flow of less than 30%.	Change in total traffic flow of 30% to 60%.	Change in total traffic flow of 60% to 90%.	Change in total traffic flows of over 90%.
Non-motorised user delay	Defined from professional judgement and a review of a locations' urban / rural context, site specific local considerations and pedestrian infrastructure, baseline traffic flows and the change in traffic flows.			
Fear and intimidation (Non-motorised user amenity)	No step changes in the level of fear and intimidation.	One step change in the level of fear and intimidation, with <400 vehicles increase in average 18hr vehicle movements and / or <500 HGV increase in total 18hr HGV flow.	One step change in the level of fear and intimidation, but with >400 vehicles increase in average 18hr vehicle movements and / or >500 HGV increase in total 18hr HGV flow.	Two step changes in the level of fear and intimidation.
Road safety	Defined from a review of PIA data along road links and the predicted changes in traffic flow.			
AILs	Defined by an assessment of the suitability of the access routes to accommodate AILs.			

15.9 Potential Inter-Relationships

15.9.1 The assessment of potential inter-relationships will be considered within the Onshore EIA Report. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There may be potential inter-relationships with other topics for example:

- Section 7: Land Use, Agriculture and Public Access:
 - Section 7 will consider the effects of the Proposed Development on PRoW and core paths in terms of their role as informal recreation resources, the Traffic and Transport section will consider these in terms of their role in the highway network;
 - Public access to recreational resources may be disrupted by additional vehicle movements on the road network during construction of the Proposed Development.
- Section 10: Landscape and Visual Impact Assessment:
 - New areas of woodland screen planting would offset and filter views towards the Proposed Development from the surrounding road networks. Additional vehicle movements generated during

both the construction and operational phases of the Proposed Development may give rise to visual impacts.

- Section 13: Air Quality;
 - Additional vehicle movements predicted as part of the transport assessment in the Onshore EIA Report will be used to identify areas within the Air Quality Study Area which require further air quality assessment, if the traffic generated exceeds the threshold for air quality assessment. Effects of dust generated by construction vehicles will be considered in the air quality assessment.
- Section 14: Noise and Vibration:
 - Additional vehicle movements predicted as part of the transport assessment will be used to identify areas within the Noise and Vibration Study Area which require further noise and vibration assessment.
- Section 16: Climate Change:
 - Additional vehicle movements predicted as part of the transport assessment will be used to identify areas within the Climate Change Study Area which require further assessment.
- Section 17: Socio-Economics, Tourism and Recreation:
 - Additional vehicle movements predicted as part of the transport assessment will be used to identify areas within the Socio-Economics, Tourism and Recreation Study Areas which require further assessment.

15.10 Potential Cumulative Effects

- 15.10.1 There is potential for cumulative effects on sensitive receptors to occur when the Proposed Development is considered together with other developments. The likely significant cumulative effects of the Proposed Development with other developments will be considered within the Onshore EIA Report.
- 15.10.2 Other emerging (without planning consent) developments that are predicted to generate traffic within the Traffic and Transport Study Area during construction of the Proposed Development, which may contribute to a cumulative effect, will be identified in the cumulative effect assessment.
- 15.10.3 Other emerging (without planning consent) development proposals that emerge at the same time will be treated together and will be cumulatively assessed against the baseline scenario to determine their cumulative effect and any cumulative road and transport mitigation requirements (if required).
- 15.10.4 The predicted traffic flows generated within the Traffic and Transport Study Area by each relevant emerging (without planning consent) development,

as part of the cumulative effect assessment, will be quantified (where data is available) using the methodology as set out above. There may be potential to co-locate infrastructure or contribute to joint upgrades/improvements where necessary with other emerging developments to seek to minimise any cumulative traffic and transport related impacts. Similarly, transport routes previously agreed or used/proposed by other developments may also reduce any cumulative traffic and transport related impacts, all of which will be considered through the assessment process.

- 15.10.5 The proposed approach to the assessment of cumulative effects is set out in Section 4.5, where the range of likely cumulative developments is considered in detail.

15.11 Summary of Proposed Scope

- 15.11.1 The proposed scope of assessment follows good practice and recognised guidance and has been devised to ensure all traffic and transport related impacts would be identified, assessed and, if necessary to reduce any significant effects, through appropriate mitigation.
- 15.11.2 The proposed scope of assessment also follows those undertaken for other recent similar development proposals in the surrounding area.
- 15.11.3 A Traffic and Transport Study Area has been defined and future year baseline transport conditions will be established using available data sources supplemented with new traffic surveys where necessary.

Construction generated traffic flows and any construction works affecting movement will then be assessed against the future year baseline transport conditions and to determine significant effects and mitigation requirements.

16 Climate Change

16.1 Introduction

- 16.1.1 This section of the Onshore Scoping Report identifies the climate change receptors of relevance to the Proposed Development and considers potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment.
- 16.1.2 With consideration of the EIA Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022) and the EIA Guide to Climate Change Resilience & Adaptation (IEMA, 2020), the following aspects of climate change are relevant to the assessment:
- Greenhouse Gas (GHG) Emissions Assessment: The emission of GHGs contributing to climate change, including GHG emissions arising from land use change and construction, operation and maintenance and decommissioning of the Proposed Development.
 - Climate Change Resilience: The potential risks to the Proposed Development arising from a changing climate and its vulnerability to climate change.

16.2 Planning Policy and Legislation

- 16.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of climate change is set out below.

NPF4

- 16.2.2 Scotland's NPF4 (Scottish Government, 2023) was adopted in 2023 and is a long-term plan to 2045 guiding spatial development, and sets out national planning policies, designates national developments and highlights regional spatial priorities.
- 16.2.3 Climate change is a priority focus of the NPF4 with the reduction in GHG emissions appearing as a major cross-cutting theme throughout many policies. The following policies are particularly relevant to the Proposed Development:
- Policy 1 – Tackling the climate and nature crises states:
 - When considering all development proposals, significant weight will be given to the global climate and nature crises.
 - Policy 2 – Climate mitigation and adaption states:
 - Development proposals will be sited and designed to minimise lifecycle GHG emissions as far as possible.
 - Development proposals will be sited and designed to adapt to current and future risks from climate change.
 - Policy 11 – renewable energy development states:

- Development proposals for all forms of renewables, low-carbon and zero emissions technologies will be supported.

ALDP 2023

16.2.4 The Plan includes the following policies relevant to this topic:

- Policy P1: Layout, Siting and Design – Sets out the requirement for developments to be efficient in terms of resources.
- Policy C1: Using Resources in Buildings – Sets out the requirement for all developments to be designed in the context of sustainable development and climate change.
- Policy C2: Renewable Energy – States that the council will support renewable energy developments.
- Policy C4: Flooding – Sets out requirements for all developments to consider flood risks and promote sustainable flood management.

Aberdeenshire Council – Route map to 2030 and beyond

16.2.5 The Route map to 2030 and beyond sets out the Council's approach to contributing towards Scotland's national legally binding target to become Net Zero by 2045. The Council also have interim targets to reduce emissions by 75% by 2030 and by 90% by 2040.

16.3 Study Area

- 16.3.1 GHG emissions have a global effect rather than directly affecting any specific local receptor. The assessment on climate change will therefore focus on the impact of GHG emissions on the global climate and be considered in the context of Government projections consistent with national carbon budget commitments. This will be expressed in the form of the atmospheric concentration of the relevant GHGs, expressed in carbon dioxide-equivalents (CO₂e). GHGs included in CO₂e typically consists of mostly carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), as well as other GHGs.
- 16.3.2 The GHG emissions will be assessed on a life-cycle basis for activities required for the construction, operation and maintenance and decommissioning of the Proposed Development. This will consider GHG emissions caused directly and indirectly from sources at a variety of locations, including the onsite activities and the associated supply chain.
- 16.3.3 The purpose of the Proposed Development to connect the Offshore Generation Assets to the grid. The cumulative effects of the other parts of the overall Project will be considered for the Proposed Development, including the avoided or 'saved' baseline GHG emissions. This will account for energy generated from the Offshore Generation Assets and its effects, in comparison to alternative grid-connected electricity generators.
- 16.3.4 Climate change impacts, such as extreme weather events, will have a localised impact, directly affecting specific local receptors. The assessment of climate resilience on the Proposed Development will therefore use the

Scoping Boundary (Figure 1.3) and its associated 25 km grid squares from the Met Office UKCP18 tool as the geographical study area.

- 16.3.5 The Climate Change Study Area is therefore defined as two different boundaries. The assessment boundary for GHG emissions is set out in Section 16.8 and the assessment of Climate Resilience Study Area considers a geographical boundary using the Scoping Boundary.

16.4 Data Sources

- 16.4.1 The data sources used to inform the baseline assessment will primarily comprise of actual data (such as material quantities and fuel consumption) and published material that is publicly available online. No baseline surveys would be required to support the climate change assessment. Where a date or edition has been specified, this is the current edition but the latest version available at the time of assessment would be used. The baseline data that will be used to inform the climate change assessment will be gathered from sources identified in Table 16.1.

Table 16.1: Climate change baseline data sources

Data Source	Dataset
Climate Change Committee (CCC) – Progress Report to Parliament (2023)	Provides information regarding state of renewable energy generation in the UK.
Digest of United Kingdom (UK) Energy Statistics (DUKES)	Provides statistics on UK renewable energy and electricity generation.
Published Environmental Product Declarations (EPDs, the outputs of Lifecycle Analysis studies – LCAs)	Used to establish the embodied carbon emissions for a typical infrastructure including transformers and transmission cabling.
Valuation of Energy Use and Greenhouse Gas: Supplementary guidance to the HM Treasury Green Book and supporting data tables	Used to establish baseline grid scenarios from which to compare to the development.
UK Government GHG Conversion Factors	Current UK grid carbon intensity and other GHG emissions factors.
Royal Institution of Chartered Surveyors (RICS) OneClick Building Carbon Database for ‘industrial/utilities’ building	Benchmark values per m ² of gross internal area for an ‘industrial building’ (used where detailed materials design information is unavailable).
National Grid Future Energy Scenarios (2023)	Provides projected future energy scenarios to compare the development’s renewable energy generational potential with.
Met Office climate station data	Provides observational climate data over a 30-year period which will form the current baseline. The closest climate station to

Data Source	Dataset
	the Proposed Development is Inverbervie Climate Station.
Met Office observational weather data and UK Climate Projections 2018 (UKCP18)	Provides historical weather data from local weather stations and provides future climate projections across a range of climate scenarios using climate models.

16.5 Baseline Environment

- 16.5.1 The current baseline environment for the GHG assessment shall be informed through consideration of the site-specific baseline. This will include review of the existing land use affected by construction activities, with particular reference to any areas of carbon-rich habitats, such as peaty soils or woodlands.
- 16.5.2 The current baseline for climate resilience are the current climatic conditions informed by the Met Office meteorological records for the Climate Resilience Study Area.

Future Baseline Conditions

- 16.5.3 The future baseline GHG emissions for the land use in the absence of the Proposed Development would be expected to remain similar to the existing land use, with a decrease in agriculture-related GHG emissions over time, in line with the UK's national climate change policies.
- 16.5.4 The future baseline for climate resilience will be informed by climate projections from the Met Office UKCP18 probabilistic projections using the 25 km grid squares covering the Scoping Boundary of the Proposed Development. It is expected that climate projections will follow a similar trend to that of the rest of Scotland and the UK which shows hotter and drier summers with wetter and warmer winters.

16.6 Embedded Mitigation

- 16.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 16.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- The following embedded mitigation is relevant to traffic and transport. This is in addition to the overarching Design Principles as outlined in Section 3.4 The Surface Water Management Plan which would set out a long-term action plan to manage surface water, including measures to prevent or mitigate surface water flooding (with an allowance for climate

change) and the implementation of Sustainable Drainage Systems (SuDS) where appropriate.

- Buried cables would have low vulnerability to both extreme weather events and changing climate trends due to being buried. The buried cables are therefore anticipated to be of low risk from climate change.
- Fibre-optic cables would have temperature sensing, providing an indication of any potential overheating risk.
- The Substation would be monitored remotely with operational and maintenance staff undertaking corrective works if required, particularly following extreme weather events.

16.6.3 The embedded mitigation measures will continue to evolve over the development process as the EIA progresses.

16.7 Potential Proposed Development Impacts

16.7.1 A range of potential impacts on and from climate change have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

16.7.2 The impacts that have been scoped into the assessment are outlined in Table 16.2 together with a description of any additional data collection and supporting analyses that will be required to enable a full assessment of the impacts.

16.7.3 Potential impacts scoped out of the assessment are presented in Table 16.3, with justification.

Table 16.2: Potential impacts proposed to be Scoped In – Climate Change

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
The impact of GHG emissions arising from the manufacturing and installation of the Proposed Development.	✓	x	x	GHG emissions arising from the manufacturing and installation of the Proposed Development including substation buildings would contribute to the lifecycle total and net GHG balance of the Proposed Development.	The baseline, with regard to land use, will be identified (whether agricultural land, woodland or peaty soils). Consideration would be given to whether the Proposed Development would affect/disturb areas of high soil or vegetation carbon stocks. Published data on agricultural land use classes, soil carbon stocks and GHG fluxes would be used.	The assessment will take into account the IEMA EIA Guide to Assessing Greenhouse Gas Emissions and Evaluating Their Significance (IEMA, 2022) or any updates to this guidance. It will be undertaken on a lifecycle basis, calculating the GHG emissions associated with the construction, operation and decommissioning of the Proposed Development (where suitable information is available in relation to the decommissioning phase). The magnitude of the impact will be expressed as tonnes of carbon dioxide equivalent (tCO ₂ e), using 100-year global warming potential values for non-
The impact of GHG emissions arising from the consumption of materials and activities required to facilitate the operation and maintenance phase.	x	✓	x	GHG emissions arising from the consumption of materials and activities required to facilitate the operation and maintenance phase would contribute to the lifecycle total and net GHG balance of the Proposed Development		
The impact of GHG emissions arising from land use change during the construction,	✓	✓	✓	GHG emissions arising from land use change during the construction, operation and maintenance and		

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
operation and maintenance and decommissioning phase.				decommissioning phases will be considered as part of the overall GHG impact of the Proposed Development. However, it is likely that most of the land affected would be agricultural land, which is not typically a significant carbon stock.		CO2 GHGs from the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Working Group 1 Report (IPCC, 2021) or as otherwise defined in literature sources. Emissions will be put into context using sources such as those outlined below.
The impact of GHG emissions arising from decommissioning works (e.g. plant, fuel and vessel use) and the recovery (or disposal) of materials	x	x	✓	GHG emissions arising from decommissioning works (e.g. plant, fuel and vessel use) and the recovery (or disposal) of materials would contribute to the lifecycle total and net GHG balance of the Proposed Development.		For construction and operation and maintenance phases actual data will be used (such as material quantities, fuel consumption etc.) from detailed design information associated with the construction and installation of the Proposed Development, substation buildings and associated infrastructure including switchgear, transformers and cabling.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						Where actual data from detailed design information is unavailable, published carbon intensity benchmark values will be used for buildings and/or project-specific materials estimates, together with published Environmental Product Declarations concerning Life Cycle Assessment research into embodied carbon. For the decommissioning phase, use of actual data (such as material quantities) from recycling and recovery activities will be used, where available. Where material quantities information is unavailable, use of published Environmental Product Declarations concerning Life Cycle Assessment research

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						into embodied carbon associated with recycling and recovery will be used, where available.
Climate resilience of the Proposed Development	x	✓	x	The main climate risk to the Proposed Development is flooding. This will be assessed with the inclusion of appropriate allowances for changes in rainfall intensity and coastal change due to climate change in the Flood Risk Assessment (FRA) submitted in support of the application. The Proposed Development will include industrial type buildings (e.g. substation), contain electrical equipment (largely self-operating), and buried cabling which are in a low-risk category with no vulnerable site users due to low exposure.	Use of Met Office local meteorological records for the onshore substation and associated infrastructure. This will provide a baseline for climate variables, such as temperature and precipitation, from which climate projections can be compared against. This provides an understanding of how much the climate will change in the future from the current baseline, such as the extent of temperature increase which determines potential cooling needs of the assets and changes in precipitation	The section will include the assessment of climate risks and adaptation. This will consider the potential climatic conditions in the 2030-2059 and 2060-2089 time horizons specific to the Proposed Developments 25 km grid square, based on the Met Office UKCP18 probabilistic projections. The proposed time horizons would cover both the operational life of the Proposed Development and the life expectancy of various onshore substation components. A high-level assessment of potential risks will be presented,

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
				The main non-flooding risk would be increased cooling demand for the equipment due to rising average global temperature and increase in the frequency and severity of heatwaves.	which indicates potential flood risk.	which will inform potential resilience measures to be considered in detailed design. The climate projections data will also be provided to Onshore EIA Report topic authors to ensure that climatic changes can be considered, where relevant, for the topic-specific future baselines and sensitivity of receptors. The assessment will take into account the IEMA EIA Guide to Climate Change Resilience and Adaptation (IEMA, 2020) or any updates to this guidance.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

Table 16.3: Potential impacts proposed to be Scoped Out – Climate Change

Potential Impact	Justification
Climate risk assessment - construction and decommissioning	The proposed development is unlikely to experience significant changes in climate during construction compared to the baseline due to the short duration (<2.5 years). Due to the planned start date for construction, the climate will be similar to the current baseline when construction begins. TWP Contractors will employ good construction and health & safety practices with respect to risks such as heatstroke or storm events offshore. These measures will be outlined in the CEMP. The decommissioning phase will also be scoped out as variations in climatic parameters during the decommissioning phase are not anticipated to be significant, as change is expected to occur gradually and that construction contractors will be able to adapt working methods over time.
In-combination climate change effects (ICCI)	ICCI are proposed to be scoped out of this section as they will be addressed individually within the relevant topic sections. This may include technical topics such as Biodiversity and Terrestrial Ecology and Water Quality and Flood Risk, with other technical topics included where assessors deem ICCI relevant to their respective topics. Each relevant topic section will consider how potential climatic changes may affect topic-specific future baselines, including the sensitivity or resilience of receptors.

16.8 Proposed Assessment Methodology

16.8.1 The climate change assessment will consider the following guidance documents:

- IEMA EIA Guide to Assessing Greenhouse Gas Emissions and Evaluating Their Significance (IEMA, 2022); and
- EIA Guide to Climate Change Resilience & Adaptation (IEMA, 2020).

GHG Emissions Assessment

16.8.2 The climate change assessment will consider the IEMA EIA Guide to Assessing Greenhouse Gas Emissions and Evaluating Their Significance (IEMA, 2022). It will be undertaken on a lifecycle basis, calculating the GHG emissions associated with the construction, operation and decommissioning of the Proposed Development.

16.8.3 Unlike other topics, the climate change assessment will consider a single sensitive receptor. The sensitive receptor will be defined as the global atmospheric concentration of GHGs and it will be characterised as having a ‘high’ sensitivity, given the severe consequences of climate change and cumulative contributions of other sources. GHG emissions have a global

effect rather than directly affecting specific local receptors to which levels of sensitivity can be assigned. The global atmospheric concentration of the relevant GHGs, expressed in CO₂-equivalents (CO₂e), will therefore be treated as a single receptor of high sensitivity (given the severe consequences of climate change).

- 16.8.4 GHG emissions would contribute to the effect of climate change. Assessment guidance from IEMA (2022) describes five levels of significance for emissions resulting from a development, each based on how the project contributes towards achieving net zero and 1.5°C-aligned reduction trajectory. To aid in considering whether effects are significant, the guidance recommends that GHG emissions should be contextualised against pre-determined carbon budgets, or policy and performance standards where a budget is not available. It is a matter of professional judgement to integrate these sources of evidence and evaluate them in the context of significance.
- 16.8.5 The main sources of GHG emissions arising from the construction, operation and maintenance and decommissioning phases of the Proposed Development would be:
- Embodied carbon associated with materials used for construction and maintenance of the Proposed Development.
 - Fuel/energy use at the substations, in vehicles and vessels for the construction, operation and maintenance and decommissioning of the Proposed Development.
 - GHG emissions arising from land use change.
- 16.8.6 Actual data on materials used and fuel/energy use is to be provided from detailed design information. Where actual data from detailed design information is unavailable, published carbon intensity benchmark values will be used and/or project-specific materials estimates, together with published Environmental Product Declarations concerning Life Cycle Assessment research into embodied carbon.
- 16.8.7 GHG emissions generated by the Proposed Development will be expressed as tonnes of carbon dioxide (tCO₂e). This would use 100-year global warming potential values for non-CO₂ GHGs from the IPCCs Sixth Assessment Working Group 1 Report (IPCC, 2021) or as otherwise defined in literature sources.
- 16.8.8 The IEMA (2022) guidance states that a development's GHG impacts should be contextualised, for example, on a sectoral basis, compared to the UK's national carbon budget or compared to policy requirements and performance standards, to determine whether a project's carbon footprint will support or undermine a 1.5°C compatible trajectory towards net zero.
- 16.8.9 It is considered that the significance of the Proposed Developments GHG emissions can be contextualised in the following ways:

- With reference to the absolute magnitude of net GHG emissions as a percentage of applicable carbon budgets at the UK, Scotland and/or Local Planning Authority scale.
- Through considering any increase/reduction in absolute GHG emissions and GHG intensity compared with baseline scenarios, including projections for future changes in those baselines.
- With reference to whether the Proposed Development contributes to and is in line with the UK's national carbon budget goals, and existing or emerging policy that supports GHG emissions reduction consistent with science-based commitments to limit climate change to an internationally agreed level.

Climate Change Resilience

- 16.8.10 This section will include the assessment of climate risks and resilience with the methodology approach informed by the IEMA (2020) guidance. This will consider the potential climatic conditions in the 2030-2059 and 2060-2089 time horizons specific to the Proposed Development's 25 km grid square, based on the Met Office UKCP18 probabilistic projections, given the 60 year lifespan of the Crown Estate Scotland seabed lease and up to 50 year life expectancy of transformers. A high-level assessment of potential risks to the sensitive receptors will be undertaken and will be used to inform potential resilience measures to be considered in detailed design.
- 16.8.11 To support the assessment of ICCI in other topic chapters, as recommended in IEMA (2020), the climate projections data will also be provided to relevant EIA topic authors to ensure that climatic changes can be considered, where relevant, for the topic-specific future baselines, including the sensitivity or resilience of identified receptors.

16.9 Potential Inter-Relationships

- 16.9.1 The assessment of potential inter-relationships will be considered within the Onshore EIA Report. It will include consideration of Proposed Development lifetime effects and receptor-led effects in line with the approach outlined in Section 4: EIA Methodology. There may be potential inter-relationships with other topics for example:
- Section 8: Biodiversity and Terrestrial Ecology
 - Additional mitigation measures and consideration concerning drought resistant habitat within the Climate Change Study Area which may require further assessment.
- 16.9.2 Climate projections data will be provided to assess how climate change may affect the topic-specific future baselines, including the sensitivity or resilience of identified receptors.
- 16.9.3 Any further inter-relationships such as those with other topics will be identified in the Onshore EIA Report.

16.10 Potential Cumulative Effects

- 16.10.1 In general, all developments which emit GHGs have the potential to affect the atmospheric mass of GHGs as a receptor, and so may have a cumulative effect on climate change. IEMA (2022) states that GHG emissions from specific cumulative projects should not be individually assessed but requires consideration of the whole project. The Proposed Development forms an integral component of the Project and requires consideration to provide the overall effect. Accounting for the Proposed Development and the Offshore Generation Assets would ensure a whole life cycle assessment with regards to GHG emissions and subsequent effects have been carried out. This will include consideration of:
- GHG emissions from the Proposed Development and the Offshore Generation Assets and Offshore Transmission Assets.
 - Overall net GHG emissions for the lifetime of the Proposed Development when considered together with the Offshore Generation Assets and Offshore Transmission Assets.
- 16.10.2 The assessment will consider the avoided or 'saved' baseline GHG emissions. This will account for energy generated from the Offshore Generation Assets and its effects, in comparison to current grid average and future long run marginal as published by Department for Energy Security. This will allow identification of the net lifetime effects or whole project assessments for the Bowdun OWF.
- 16.10.3 Cumulative effects from Climate Change Resilience are not considered as this is specific to the Proposed Development and will not result in impacts to neighbouring developments.

16.11 Summary of Proposed Scope

- 16.11.1 The proposed scope of the Climate Change Onshore EIA Report Chapter will consider:
- Proposed Development's impact on climate change: GHG emissions arising from the Proposed Development. Climate resilience and adaption: Resilience of the Proposed Development resulting from a changing climate.
- 16.11.2 The main guidance used to inform the assessment of climate change are:
- IEMA EIA Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022).
 - IEMA EIA Guide to Change Resilience & Adaptation (IEMA, 2020).

GHG Emissions Assessment

- 16.11.3 The assessment of GHG emissions arising from the Proposed Development is scoped in for the construction, operational and maintenance and decommissioning phases. The sensitive receptor will be defined as the global atmospheric concentration of GHGs and it will be characterised as having a 'high' sensitivity.

- 16.11.4 Cumulative impacts between the Proposed Development and Offshore Transmission Assets and Offshore Generation Assets will be assessed with consideration of overall net GHG emissions for the lifetime of these assets to ensure a whole life cycle assessment with regards to GHG emissions.

Climate Change Resilience

- 16.11.5 The assessment of climate resilience of the Proposed Development is scoped in for the operational and maintenance phase of the Project. The construction phase will be scoped out as this phase is unlikely to experience significant changes in climate due to the short-duration of the phase and any climate impacts would be addressed by construction and health and safety best practice. The decommissioning phase will also be scoped out as variations in climatic parameters during the decommissioning phase are not anticipated to be significant, as change is expected to occur gradually and that construction contractors will be able to adapt working methods over time. The sensitive receptors will be defined as the Onshore Infrastructure located within the Scoping Boundary.

ICCI will be considered individually within relevant topic section of the Onshore EIA Report using climate projections data provided to Onshore EIA Report topic authors. Therefore, ICCI is scoped out of assessment within the climate change Onshore EIA Report chapter.

17 Socio-Economics, Tourism and Recreation

17.1 Introduction

- 17.1.1 This section of the Onshore Scoping Report identifies the Socio-Economics, Tourism and Recreation receptors of relevance to the Proposed Development and considers potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development. It also sets out the proposed methodology for the assessment. The analysis will build on the publicly available Supply Chain Development Statement (SCDS) Outlook (Thistle Wind Partners, 2023), which sets out the supply chain commitments of the Project.
- 17.1.2 The key impacts proposed to be addressed include:
- Increase in employment and Gross Value Added (GVA);
 - Demographic changes;
 - Changes to housing demand;
 - Changes to other local public and private services;
 - Socio-cultural impacts;
 - Changes to tourism receptors; and
 - Changes to recreation receptors (public access to recreational receptors is addressed in Section 7: Land Use, Agriculture and Public Access).
- 17.1.3 This section of the Onshore Scoping Report has been prepared by BiGGAR Economics Ltd.

17.2 Planning Policy and Legislation

- 17.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and guidance of particular relevance to the assessment of socio-economics, tourism and recreation is set out below.

Policy

- 17.2.2 The policy environment for the offshore wind sector in the UK and Scotland is considered in the following policy documents:
- UK Government (2019) Offshore Wind Sector Deal;
 - UK Government (2021) Build Back Greener;
 - Scottish Government (2020) OWPS; and
 - Scottish Government (2023) NPF4.
- 17.2.3 The UK Government aims to ensure that UK companies can benefit from the opportunities presented by the expansion of the offshore wind sector, enhancing the competitiveness of UK firms internationally and sustaining the UK's role as a global leader in offshore wind generation, as outlined in the Offshore Wind Sector Deal (UK Government, 2019). Offshore wind is also expected to play a significant role in the transition to net zero, creating green jobs as part of the Build Back Greener agenda (UK Government, 2021).

- 17.2.4 The Scottish Government, as outlined in its OWPS (Scottish Government, 2020), expects offshore wind projects to play an important role in transitioning to a net zero economy, while contributing to sustainable economic growth with new, well-paid jobs. This is emphasised further in the NPF4 (Scottish Government, 2023), in which Policy 11 states that renewable energy development proposals will only be supported if they maximise net economic impacts.
- 17.2.5 The Regional Economic Strategy for Aberdeen and Aberdeenshire (Aberdeen Council and Aberdeenshire Council, 2024) is also relevant. Based on an analysis of economic trends across the region, the Strategy identifies five objectives. The Proposed Development aligns with Objective 1: “To establish the North East as a pioneer of the energy transition, by delivering an 80% reduction in carbon emissions per head”.
- 17.2.6 The EIA Report will expand on the policy context for offshore wind, and its supporting onshore infrastructure. This will include any updates to existing policies and those which are specific to the Scoping Boundary.

Guidance

- 17.2.7 The socio-economics assessment will follow the assessment methodology set out in Section 4: EIA Methodology. Specific to the socio-economic effects related to the offshore elements, the following guidance documents will also be considered:
- Glasson *et al.*, (2018), Guidance on assessing the socio-economic impacts of Offshore Wind Farms;
 - Scottish Government (2022), General Advice for Socio-Economic Impact Assessment;
 - Scottish Government (2022), Defining 'Local Area' for Assessing Impact of Offshore Renewables and Other Marine Developments: Guidance Principles;
 - Scottish Government (2022), A Two Way Conversation with the People of Scotland on the Social Impact of Offshore Renewables;
 - Scottish Government (2022) Public perceptions of OWF Developments in Scotland; and
 - UK Government (2022), The Green Book: Appraisal and Evaluation in Central Government.
- 17.2.8 The Scottish Government is in the process of developing guidance on the assessment of the socio-economic impacts of Offshore Wind Farm (OWF) projects. It is expected that this shall be published prior to the submission of the Onshore EIA Report. If available, this will be considered within the Onshore EIA Report.
- 17.2.9 In December 2022, the Marine Analytical Unit (MAU) published "General Advice for Socio-Economic Impact Assessment". This document summarised the draft guidance being prepared by the MAU. One of the key recommendations is that the onshore and offshore elements of an offshore wind project are considered in the same assessment. The consenting

strategy for the Project is to have separate applications for the onshore and offshore elements and therefore a separate standalone assessment of each of those elements of the Project will be prepared. To support this, the methodology and impacts considered for both the onshore and offshore assessments will be consistent, and the approach outlined in this section will be consistent to the approach described in equivalent section of the Offshore Scoping Report. In addition, the combined impacts of all elements of the Project will be considered in a stand-alone socio-economic impact assessment study. The General Advice document (Scottish Government, 2022), also outlines the socio-economic, tourism and recreation impacts that should be considered in an assessment. These are listed in Paragraph 17.1.2.

17.3 Study Area

- 17.3.1 The Socio-economics, Tourism and Recreation Study Areas used within this Onshore Scoping Report have been defined in line with the guidance on identification of ‘local areas’ for offshore developments published by the Scottish Government (Scottish Government, 2022).
- 17.3.2 This guidance identifies six principles for identifying study areas for offshore renewables and other marine developments. The principles consider the main locations where socio-economic impacts will occur and have been applied to the Proposed Development. The principles are:
- Principle 1 (Dual Geographies) - The local area for the supply chain and investment impacts should be separate from the local area(s) for wider socio-economic impacts, including tourism and recreation;
 - Principle 2 (Appropriate Impacts) - The appropriate impacts to be considered for assessments should be identified before defining the local areas;
 - Principle 3 (Epicentres) - The local areas should include all the epicentres of the appropriate impacts;
 - Principle 4 (Accountability) - The local areas used in the assessment should comprise of pre-existing economic or political geographies (community councils, local authorities, development agencies) to enhance accountability;
 - Principle 5 (Understandable) - The local areas should be defined in such a way that they are understandable to the communities they describe; and
 - Principle 6 (Connected Geography) - The local area for the supply chain and investment impacts should consist of connected (including coastal) pre-existing economic or political geographies.
- 17.3.3 In line with this guidance, the study areas for the socio-economic impacts are different from those used for the assessment of tourism and recreation impacts.
- 17.3.4 The Socio-Economic Study Area is the smallest connected geography area that will include all likely epicentres of impact. This will include the

Landfall, Cable Corridor, Substation and supply chain hubs. The location of this infrastructure would be within the electoral wards of Mearns, and Stonehaven and Lower Deeside in Aberdeenshire. Aberdeen City is only 20km from the potential substation and has significant expertise in engineering. It is therefore likely that Aberdeen City will contain supply chain hubs for the project.

17.3.5 Therefore, the socio-economic impacts will be assessed for the following areas:

- Aberdeen City and Aberdeenshire;
- Scotland; and
- the UK.

17.3.6 For tourism and recreation, the Tourism and Recreation Study Area focusses on the local administrative areas that contain the proposed onshore infrastructure and any potential epicentres of impact associated with the infrastructure that could impact on tourism and recreation receptors. The Tourism and Recreation Study Area covers land that is part of two electoral wards within Aberdeenshire, specifically:

- Mearns; and
- Stonehaven and Lower Deeside.

17.4 Data Sources

17.4.1 The baseline data that will be used to inform the socio-economics, tourism and recreation assessment will be gathered from sources identified in Table 17.1.

Table 17.1: Socio-economic, tourism and recreation data sources

Data Source	Dataset
National Records of Scotland, (2022), Mid-2021 Electoral Ward Population Estimates	Population estimates for Mearns, and Stonehaven and Lower Deeside
National Records of Scotland, (2020), 2018-based principal population projections for council areas	Population projections for Aberdeenshire and Aberdeen City
Office National Statistics (ONS), (2023), Business Register and Employment Survey	Breakdown of sectoral employment
ONS, (2023a), Annual Business Survey	Breakdown of sectoral turnover and GVA
ONS, (2023b) Annual Population Survey	Data on economic activity, unemployment, and qualifications
ONS, (2023c), Annual Survey of Hours and Earnings 2022	Data on average and median earnings
ONS, (2022), Population Estimates - local authority based by five-year age band	Population estimates for Aberdeenshire, Aberdeen City, Scotland, and the UK
ONS, (2019), Principal Population Projections 2018-based	Population projections for the UK

Data Source	Dataset
ONS, (2023e), International Passenger Survey 2022	Number of visits and total spending of international visitors
Kantar TNS, (2023), Great Britain (GB) Day Visitor Survey 2022	Number of visits and total spending of domestic day visitors
Kantar TNS, (2023), The GB Tourism Survey 2022	Number of visits and total spending of overnight visitors
Offshore Wind Industry Council, (2023), Offshore Wind Skills Intelligence Report	Understanding of skills and future workforce for the offshore wind industry
Offshore Wind Industry Council, (2020), Collaborating for Growth: Strategies for Expanding the UK Offshore Wind Supply Chain	Information on UK supply chain industry capabilities
Oxford Brookes University, (2020), Guidance on assessing the socio-economic impacts of OWFs	Guidance on the assessment of offshore windfarm developments
Scottish Government, (2022), Annual Growth Sector Statistics	Data on the renewable and sustainable tourism sectors
BVG Associates, (2019), Guide to an OWF	Understanding of offshore windfarm supply chain components

17.5 Baseline Environment

- 17.5.1 This section presents baseline statistics (Table 17.2) for each of the Socio-Economic Study Areas, including Mearns, Stonehaven and Lower Deeside, Aberdeen City and Aberdeenshire, Scotland, and the UK. Where N/A is displayed this is because the data sets do not go down to the electoral ward level.
- 17.5.2 Mearns, Stonehaven and Lower Deeside had an estimated population of 29,582 in 2022 (ONS, 2023b). This accounted for 11% of the total population of Aberdeenshire. The age profile of the population of Mearns, Stonehaven and Lower Deeside is older than that of Aberdeen City and Aberdeenshire. The share of the population aged over 65 is 20% in Mearns, Stonehaven and Lower Deeside, compared to 19% across Aberdeen City and Aberdeenshire.
- 17.5.3 The population of Aberdeen City and Aberdeenshire has increased since 2012 and it is projected that this trend will continue (ONS, 2023b). In 2043, it is projected that the population will increase to 500,698 (National Records of Scotland, 2020). At the same time, it is expected the region will feature an older population profile.

Table 17.2: Population baseline within the Socio-Economic Study Area, ONS (2023b) and National Records of Scotland (2020)

	Mearns, Stonehaven and Lower Deeside	Aberdeen City and Aberdeenshire	Scotland	UK
Total Population	29,582	490,100	5,479,900	67,652,999
% Under 16	18.3%	17.2%	16.6%	18%
% aged 16 – 64	61.6%	64.2%	63.8%	63%
% aged 65 and over	20.1%	18.5%	19.6%	19%
Population (2012)	N/A	476,200	5,313,600	63,705,030
Population Projection (2043)	N/A	500,698	5,574,819	72,417,950

17.5.4 Regarding labour market indicators (Table 17.3), no data were available at the electoral ward level of Mearns, Stonehaven and Lower Deeside.

17.5.5 The economic activity rate (Table 17.3) in Aberdeen City and Aberdeenshire is estimated to be higher (79.6%), than across Scotland as a whole (77.9%). This higher degree of labour market activity is also underpinned by a lower (2.8%) unemployment rate than across Scotland and the UK.

Table 17.3: Labour Market Indicators within the Socio-Economic Study Area, ONS (2023a) and ONS (2023c)

	Mearns, Stonehaven and Lower Deeside	Aberdeen City and Aberdeenshire	Scotland	UK
Economic Activity Rate	N/A	79.6%	77.9%	78.7%
Unemployment Rate	N/A	2.8%	3.4%	3.8%
Median Annual Gross Income (All Residents)	N/A	£29,838	£29,842	£29,669

17.5.6 The top three sectors of employment in Mearns, Stonehaven and Lower Deeside are:

- Professional, scientific, and technical activities – 13%
- Human health and social work activities – 12%; and
- Manufacturing – 11%

- 17.5.7 The construction sector accounts for almost 8% of total employment in Mearns, Stonehaven and Lower Deeside, a higher proportion to that of Scotland as a whole (6%).
- 17.5.8 The tourism sector in Mearns, Stonehaven and Lower Deeside accounts for a higher share of employment than for Aberdeen City and Aberdeenshire as a whole. For example, while accommodation and food services accounts for 8% across the two geographies, the arts, entertainment and recreation sector accounts for almost 7% of the Mearns, Stonehaven and Lower Deeside workforce, compared to 2% of the Aberdeen City and Aberdeenshire workforce.
- 17.5.9 As set out in Section 7: Land Use, Agriculture and Public Access, the majority of the land affected by the Cable Corridor within Mearns, Stonehaven and Lower Deeside, is agricultural land used for arable purposes.
- 17.5.10 The socio-economic baseline will be expanded in the Onshore EIA Report to add more detail on the indicators of the sensitivity of each of the economic receptors and enable the relative magnitude of each impact to be quantified for each Socio-Economic Study Area.

Tourism and Recreation Baseline

- 17.5.11 The industrial profile suggests the relative importance of the tourism sector is similar for Aberdeen City and Aberdeenshire, and Scotland. In 2019 it was estimated that there were 900,007 overnight visits across both areas (Kantar, 2023) and 12.5 million day visitors (Kantar, 2023). In total it was estimated that visitors to the area spent £594 million.
- 17.5.12 The tourism and recreation baseline in the Onshore EIA Report will identify the tourism and recreation receptors in Mearns, Stonehaven and Lower Deeside, and wider Aberdeenshire area. This will consider land uses and core paths as set out in Section 7 Land Use, Agriculture and Public Access. It will identify the drivers for the success of these receptors and consider the role of tourism in the local economy in more detail.

17.6 Embedded Mitigation

- 17.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.
- 17.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.
- 17.6.3 The following embedded mitigation is relevant to socio-economics, tourism and recreation. This is in addition to the overarching Design Principles as outlined in Section 3.4:

- A CTMP, which will control vehicles entering construction sites and utilising the local road network. This in turn would reduce the impact on tourist use of the road network;
- A CEMP, which will reduce impacts on soil resources, that could impact agricultural activity; and
- Screen planning and landscape earthworks that would reduce the visual impact of the substation site. This will reduce potential tourism and recreational impacts in the surrounding area.

17.6.4 It is not anticipated at this stage that additional embedded mitigation will be required on top of what has already been described above.

17.7 Potential Proposed Development Impacts

- 17.7.1 A range of potential impacts on socio-economic, tourism and recreation receptors have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 17.7.2 The impacts that have been scoped into the assessment are outlined in Table 17.4 together with a description of any additional data collection and supporting analyses that will be required to enable a full assessment of the impacts.
- 17.7.3 Potential impacts scoped out of the assessment are presented in Table 17.5, with justification.

Table 17.4: Potential impacts proposed to be Scoped In – Socio-economics, Tourism and Recreation

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Increase in employment and GVA	✓	✓	✓	The construction, operation and decommissioning of the Proposed Development will require expenditure with companies in each of the study areas. This will support employment and generate GVA, including impacts associated with spending in the wider supply chain (indirect effects) and spending by staff (induced effects). Total employment and GVA impacts will also take account of the findings from other chapters, including any impacts on agriculture and commercial forestry.	Desk-based review to develop a detailed baseline assessment of relevant socioeconomic conditions, including an assessment of employment and the businesses by sector.	An economic impact model will be developed to estimate direct, indirect, and induced employment impacts of the Proposed Development for the economic study areas. Impacts will be assessed relative to the relative socio-economic profile of each study area.
Demographic changes	✓	x	✓	The employment supported during the construction and	Desk-based review to develop a detailed baseline assessment of	An assessment of likely changes due to temporary or permanent workforce

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
				decommissioning of the Proposed Development may attract permanent or transient workers to each study area. It is not anticipated that the employment during the operations phase would result in significant demographic changes.	demographic trends and issues in each study area. Data on demographic changes will come from labour demand analysis in the economic impact model. Demographic split of workforce will draw from sector wide studies on workforce demographics.	will put any demographic change in the context of each study area.
Changes to housing demand	✓	x	✓	Any demographic changes during the construction and decommissioning of the Proposed Development may cause changes to demand in the housing market of each study area. It is not anticipated that the employment during the operations phase would result in significant demographic changes.	Desk-based review to develop a detailed baseline assessment of housing market trends and issues in each study area. Data on demographic changes will come from labour demand analysis in the economic impact model.	An assessment of likely changes due to temporary or permanent workforce will put any housing market impacts in the context of each study area.

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
Changes to other local public and private services	✓	x	✓	Any demographic changes during the construction and decommissioning of the Proposed Development may cause changes to demand for local public and private services of each study area. It is not anticipated that the employment during the operations phase would result in significant demographic changes.	Desk-based review to develop a detailed baseline assessment of public and private service provision in each study area. Data on demographic changes will come from labour demand analysis in the economic impact model.	An assessment of likely changes due to temporary or permanent workforce will put any public and private service provision impacts in the context of each study area.
Changes to tourism receptors	✓	✓	✓	The construction, operation and decommissioning of the Proposed Development has the potential to influence visitor behaviour, depending on the other environmental impacts that are generated.	Data on drivers of the tourism economy and the identification of receptors in each of the study areas will be taken from VisitScotland and local tourism organisations.	The assessment will consider whether the drivers of the tourism economy, or individual receptors, are significantly affected by the Proposed Development by considering relevant chapters of the EIA. If significant effects are identified on any of these

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
						receptors, an assessment will be made regarding how these effects will influence visitor behaviour.
Changes to recreation receptors	✓	✓	✓	The construction, operation and decommissioning of the Proposed Development has the potential to influence recreational assets, depending on the other environmental impacts that are generated.	Recreational assets in each of the study areas will be taken from Google searches, consultations, VisitScotland and local tourism organisations.	The assessment will consider whether recreational assets, are significantly affected by the Proposed Development by considering relevant chapters of the EIA including Land Use and Public Access (Section 7). If significant effects are identified on any of these receptors, an assessment will be made regarding how these effects will influence recreational amenity in line with NatureScot (2018b) guidance.
Socio-cultural Impacts	✓	✓	x	Changes in demographics may lead to changes in	Baseline information on socio-cultural impacts will	The potential impacts will be considered based on

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
				community character, quality of life and community stress.	build on evidence from communities with a similar previous experience of offshore wind and the socio-economic baseline of the area. It will also be informed by the wider stakeholder engagement exercise.	baseline data, the project description and shall be discussed qualitatively.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D))

Table 17.5: Potential impacts proposed to be Scoped Out – Socio-economics, Tourism and Recreation

Potential Impact	Justification
Demographic Impacts during the operation and maintenance phase	The level of employment at the Proposed Development during the operational phase is expected to be low. Therefore, it is not anticipated that there will be significant demographic impacts as a result.
Changes to housing demand during the operation and maintenance phase	There is not expected to be significant demographic effects during the operational phase and therefore the impacts that derive from demographic changes, such as housing demand, are also not expected to be significant during this phase.
Changes to other local public and private services during the operation and maintenance phase	There is not expected to be significant demographic effects during the operational phase and therefore the impacts that derive from demographic changes, such as other local public and private services, are also not expected to be significant during this phase.
Socio-cultural Impacts during the decommissioning phase	Socio-cultural effects are highly dependent on social baseline information and perceptions. Due to a likely lack of clarity on decommissioning activities and because the social perceptions baseline is unlikely to still be applicable at the decommissioning phase it will not be possible to complete a meaningful assessment.

17.8 Proposed Assessment Methodology

Socio-economic Impacts

- 17.8.1 Socio-economic impacts will be assessed for each of the Socio-Economic Study Areas, and the sensitivity will be considered based on the relative size of the economy, with smaller study areas considered more sensitive to change than larger study areas.
- 17.8.2 The impacts will be reported in terms of:
- GVA - this is a measure of economic value added by an organisation or industry and is typically estimated by subtracting the non-staff operational costs from the revenues of an organisation;
 - Years of Employment - this is a measure of employment which is equivalent to one person being employed for an entire year and is typically used when considering short term employment impacts, such as those associated with the development and construction phase of the Proposed Development; and
 - Jobs - this is a measure of employment which considers the headcount employment in an organisation or industry. This measure is used when considering long term impacts such as the jobs supported during the operational phase of the Proposed Development.

- 17.8.3 The economic impacts associated with the supply chain shall be assessed in line with the approach considered in the UK Offshore Wind Sector Deal (UK Government, 2020), the focus of the assessments will be the direct and indirect (supply chain) impacts. In addition to this, the Proposed Development shall also consider the impacts of staff spending and the economic impact that this subsequent increase in demand stimulates (the induced impact).
- 17.8.4 It is acknowledged that at the time of writing, the exact levels of expenditure are unknown. This expenditure is what shall drive the positive economic impacts. The socio-economic assessment shall therefore consider the reasonable maximum design scenario of the lowest, realistic levels of expenditure associated with the Proposed Development, in line with TWP's commitment in the SCDS: Outlook (Thistle Wind Partners, 2023), though these may be subject to change as the Proposed Development is refined. This will also affect the assumptions for the reasonable 'maximum design scenario' for the Proposed Development.
- 17.8.5 The socio-economic assessment for the Proposed Development will cover:
- construction;
 - operation; and
 - decommissioning
- 17.8.6 The impacts during the construction phase will be based on the actual expenditure that has occurred to date as well as the planned expenditure associated with these phases. In addition to the total impact over the period, the assessment will consider the timings of impacts during this stage to understand the peaks and troughs of this activity.
- 17.8.7 The impacts during the operation of the Proposed Development will be based on projected operational expenditure.
- 17.8.8 Where impacts are expected to occur over several years, such as during operation, a discount rate will be applied. This allows impacts that occur sooner to be valued more highly than impacts that occur in the future, a concept known as time preference. In this instance a discount rate of 3.5% will be chosen, which is in line with the UK Government's Green Book (UK Government, 2022).
- 17.8.9 Once the economic impact of the Proposed Development has been assessed in terms of GVA and employment, an assessment will be made about the relative magnitude of the impact. Using the methodology outlined in Section 4: EIA Methodology, the significance of the effect will then be assessed.

Demographic Impacts

- 17.8.10 The employment that would be created as a result of the Proposed Development would have demographic impacts, if this employment helps to retain or attract people to the communities where this activity occurs. The potential impacts of demographic change will be assessed as far as

possible, including the scale of any impact and its potential to be significant.

- 17.8.11 The sensitivity of each of the demographic receptors will be determined by the trends in demographics in the potential host communities, projections estimated for how these demographics will change over time, and how the demographics of the workforce would relate to different communities. The magnitude of any demographic change will be determined by the change relative to the current population.

Housing

- 17.8.12 The potential impacts on housing are one of the key topics that coastal communities are concerned about (Scottish Government, 2022). The demographic changes that result from the employment opportunities have the potential to change the level of demand for housing.
- 17.8.13 As with the demographic impacts, potential effects on housing will vary considerably between communities. The sensitivity of any housing market to changes in demand as a result of the Proposed Development will be determined by factors including:
- the population of the community, including the wider travel to work area;
 - the availability of housing or other accommodation within the community;
 - the scale of the overnight tourism sector in the community;
 - the ability of the housing market to adjust supply to respond to changes in demand; and
 - the relative level of housing affordability in the area.
- 17.8.14 Similarly, the magnitude of any change will be determined by the peak level of additional accommodation demand in each area, relative to the baseline accommodation provision. The magnitude of any change in housing demand would also be determined by the demographic changes as a result of the Proposed Development. This would be determined by the baseline labour supply in each of the potential areas and the relative size of any transient labour population.

Local Public and Private Services

- 17.8.15 As with the housing market, the demographic changes that could result from the employment opportunities, could result in changes to the level of demand for other services. This will include:
- public and private sector services;
 - educational services;
 - health services and social support;
 - police, fire, recreation, transport; and
 - local authority finances.
- 17.8.16 The assessment of the effect on these services will also be determined by factors of sensitivity that will be specific to the potentially impacted

communities. This will include the capacity of each service in each of the potential areas and the ability of the service to adapt to changes in demand.

- 17.8.17 The magnitude will also be determined by the relative demographic change in each potential area, which will vary based on the size of the population and the availability of labour in each of the Socio-Economic Study Areas.
- 17.8.18 As the location of the construction base and operation and maintenance base will not have been determined at the time of producing the Onshore EIA Report, the assessment will consider the potential scale of additional demand on other services that would occur during the peak periods of employment based on the potential demographic effects in each potential host area and the propensity of each demographic group to use each of the services listed.

Tourism and Recreation Impacts

- 17.8.19 The assessment will also consider the potential for tourism and recreation impacts. Studies have found that the presence of energy infrastructure itself does not have an effect on tourism and recreation assets, rather how visitors react to the other environmental effects that are caused by this infrastructure. For example, if the construction results in traffic issues that deter visitors from a certain attraction. The tourism and recreation assessments will be based on the sensitivity of the tourism economy, or assets in each area and the magnitude of any potential change in behaviour.
- 17.8.20 The tourism and recreational baseline will identify receptors in Mearns, Stonehaven and Lower Deeside and map these against any significant effects identified for other relevant topics of the Onshore EIA Report. If significant effects are identified on these receptors, the tourism assessment will consider if the receptors are sensitive to the particular environmental effect identified.
- 17.8.21 The assessment of recreational effects will be similar and will apply the NatureScot guidance on sensitivity and magnitude of recreational assets to those receptors that will experience significant environmental effects.

17.9 Potential Inter-Relationships

- 17.9.1 This assessment will be informed by relevant conclusions of other technical topics within the Onshore EIA Report including (but not limited to) Land Use and Public Access, Landscape and Visual Impact, Air Quality, Noise and Vibration and Traffic and Transport. The conclusions of these sections will be reviewed and assessed in relation to the socio-economic impacts, in particular the tourism and recreational impact assessment.
- Section 7: Land Use, Agriculture and Public Access:
 - There may be a reduction in the appeal, enjoyment and access of recreational areas as a result of the Proposed Development which relates to public access and any disruption or deviation of such.
 - Section 10: Landscape and Visual Impact Assessment:

- There may be a reduction in the appeal, enjoyment and access of recreational areas as a result of the Proposed Development which relates to landscape and visual impact and any disruption or deviation of such.
- Section 14: Noise and Vibration:
 - There may be a reduction in the appeal, enjoyment and access of recreational areas as a result of the Proposed Development which relates to noise and vibration impact and any disruption or deviation of such.
- Section 15: Traffic and Transport:
 - Additional vehicle movements predicted as part of the transport assessment will be used to identify areas within the Socio-economics, Tourism and Recreation Study Area which require further detailed assessment.

17.10 Potential Cumulative Effects

- 17.10.1 There is the potential for cumulative effects on the socio-economic, tourism and recreational receptors which may arise from the construction, operation and maintenance, and decommissioning of the Proposed Development when they occur alongside the activities of other projects.
- 17.10.2 Known existing and proposed projects and activities located within the Socio-economic, Tourism and Recreation Study Areas which will be considered in terms of potential cumulative impacts.
- 17.10.3 The proposed approach to the assessment of cumulative effects is set out in Section 4.5.

17.11 Summary of Proposed Scope

- 17.11.1 The scoping exercise has concluded that because of potential socio-economic, tourism and recreation impacts arising from the Proposed Development during the construction, operational and decommissioning phases that a Socio-Economic, Tourism and Recreation Chapter should be scoped into the Onshore EIA Report. This excludes the following impacts, which have been scoped out of the assessment;
- Demographic Impacts during the operational phase;
 - Changes to housing demand during the operational phase;
 - Changes to other local public and private services during the operational phase; and
 - Socio-cultural Impacts during the decommissioning phase.

18 Human Health

18.1 Introduction

- 18.1.1 This section of the Onshore Scoping Report identifies the Human Health implications of the Proposed Development. It also sets out the proposed methodology for the assessment. In this regard the section considers the environmental, social, behavioural, economic and institutional determinants of health relevant to the Proposed Development. The section covers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development.
- 18.1.2 This section maintains a proportionate focus on identifying if influences on population health have the potential for likely significant effects due to the Proposed Development. The section has regard to mitigation relevant to population health effects that is expected to be secured through other chapters of the Onshore EIA Report, including: landscape and visual; traffic and transport; geology and ground conditions; water quality and flood risk assessment; noise and vibration; air quality; and socio-economics.
- 18.1.3 No overhead lines are planned for the Proposed Development and all Onshore Export Cables will be buried underground, as such exposure to EMFs from these sources can reasonably be expected to be within standards for health protection. This issue is not considered further within this Onshore Scoping Report.
- 18.1.4 Having considered the potential effects on Human Health and the mitigation measures proposed across relevant topics within this report, it is proposed to scope Human Health out of the Onshore EIA Report. This reflects the findings of this section in that the potential for any significant population health effects is expected to be avoided by mitigation measures that will be described in other Onshore EIA Report chapters.

18.2 Planning Policy and Legislation

- 18.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of human health is set out below.
- NPF4 (Scottish Government, 2023): Scotland's national spatial strategy aims to deliver, inter alia, *'liveable places, where we can all live better, healthier lives'* and aims to *'improve community health and wellbeing by ensuring people can easily access services, greenspace, learning, work and leisure locally'*; the NPF4 recognises that there are significant health inequalities in Scotland and health and life expectancy are significantly different between the most and least deprived populations of Scotland;
 - Cleaner Air for Scotland 2: Towards a Better Place for Everyone (Scottish Government, 2021): takes a precautionary public health approach to pollution reduction; recognises that *'human health improvements are not related solely to direct reductions in air pollution. Policies that*

improve air quality can potentially have multiple co-benefits for population health, for addressing inequality and for mitigating and adapting to climate change;

- Creating Places: A policy statement on architecture and place for Scotland (Scottish Government, 2013): recognises the importance of the quality of physical and social environments in promoting health and reducing health inequalities; and
- Public Health Priorities for Scotland (Scottish Government, 2018): sets out the health priorities for Scotland, including, mental health, equality of health outcomes, and physical activity.

18.2.2 The ALDP promotes Aberdeenshire as, *‘an area with a high quality of life and distinctive places, and where new developments are designed as effectively as possible to improve this, help deliver sustainable, low carbon places and contribute positively towards the health and wellbeing of its residents’* (Aberdeenshire Council, 2023).

18.2.3 The ALDP requires that projects do not adversely affect human health and safety or pose a risk to safeguarded sites.

18.2.4 The following legislation is relevant to the assessment of effects on human health:

- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 – sets the requirement to consider the likely significant direct and indirect effects of a Proposed Development on human health (HM Government, 2017);
- Health and Safety at Work etc. Act 1974 – is a primary piece of legislation covering occupational health and safety in Great Britain (HM Government, 1974).

18.3 Study Area

18.3.1 The Human Health Study Areas broadly characterise representative population groups. The scoping exercise focuses on the community close to the Proposed Development work areas. However, as some impacts (e.g. socio-economic) have wider area effects, a range of areas have been considered:

- Site-specific Landfall health study area Data Zone of: ‘Mearns South and Benholm – 05’;
- Site-specific Cable Corridor health study area Data Zones of: ‘Fetteresso, Netherley and Catter – 01’, ‘Mearns North and Inverbervie – 02’ and ‘Mearns North and Inverbervie – 07’;
- Site-specific substation health study area Data Zone of: ‘Fetteresso, Netherley and Catter – 05’;
- Local Health Study Area: populations of the Intermediate Zones of: Fetteresso, Netherley and Catter; Mearns South and Benholm; and Mearns North and Inverbervie;

- Regional Health Study Area: population of Aberdeenshire Council and Aberdeen City Council areas;
- National Health Study Area: populations of Scotland and the United Kingdom; and
- International: Global population.

18.3.2 The wider determinants of health and health inequalities are key considerations when undertaking an assessment of human health as part of EIA. The following population groups are present and have been considered:

- The ‘general population’ including residents, visitors, workers, service providers, and service users; and
- The ‘vulnerable group population’ including potential vulnerability due to: young age, older age, low income, poor health status, social disadvantage, and restricted area access or geographic proximity to Proposed Development activities.

18.3.3 At this scoping stage there is not a fixed location for the Onshore Infrastructure, namely Landfall, Cable Corridor and Substation site. The health considerations in relation to the Proposed Development are therefore scoped at a high level.

18.4 Data Sources

18.4.1 The data sources set out in Table 18.1 have been consulted as part of the EIA baseline at this scoping stage.

Table 18.1: Human health data sources

Data Source	Dataset
ONS; and official labour market statistics	Population estimates.
National Records of Scotland (2023) and Scotland’s Census (2023)	Population estimates including life expectancy data.
Scottish Index of Multiple Deprivation Mapping (Scottish Government, 2023)	Relevant small area deprivation mapping, including ‘Index of Multiple Deprivation’ and individual sub-domains.
Public Health Scotland (2022)	Relevant small area and comparator levels. Indicators from ‘behaviours’, ‘economy’ and ‘life expectancy and mortality’.
Local health mapping	Scottish maps, including local services; learning, leisure and culture; highways and transportation; countryside environment and waste; and crime and public safety.
Google Earth Pro	Aerial and street level site location review.

18.5 Baseline Environment

- 18.5.1 The following baseline is from Public Health Scotland (Public Health Scotland, 2023) unless otherwise stated. Baseline indicators have been selected to provide a general coverage of the wider determinants of health at the local study area level compared to Aberdeenshire and Scotland. Human health baseline indicators data is summarised in Table 18.2.
- 18.5.2 Overall health can be informed by life expectancy. Male life expectancy at birth is generally higher (better) in Fetteresso, Netherley & Catter, Mearns South and Benholm, Mearns North and Inverbervie and Aberdeenshire than the average for Scotland. Female life expectancy at birth in Fetteresso, Netherley & Catter, Mearns South and Benholm, Mearns North and Inverbervie and Aberdeenshire is also generally higher (better) than the average for Scotland.
- 18.5.3 Using deprivation as a health resilience indicator, the Scottish Index of Multiple Deprivation (Scottish Government, 2020) shows the Fetteresso, Netherley & Catter, Mearns South and Benholm, and Mearns North and Inverbervie in the 7th to 10% least deprived in Scotland across the following deprivation domains: overall deprivation, income, employment, health, education, and housing. Fetteresso, Netherley & Catter, Mearns South and Benholm, and Mearns North are ranked in the 10% most deprived for the geographic access domain. Overall, the Scottish Index of Multiple Deprivation suggests low levels of deprivation in the vicinity of the Proposed Development area.
- 18.5.4 Data zone S01006824 (Scottish Index of Multiple Deprivation, 2020) in Stonehaven is ranked in the third to fourth most deprived for the following domains: overall deprivation, income, employment, education and crime.
- 18.5.5 Socio-economic status has correlations with health both for those directly employed and their dependants. The percentage of the working population that is employment deprived is lower in Fetteresso, Netherley & Catter, Mearns South and Benholm, Mearns North and Aberdeenshire than the average in Scotland. Where N/A is displayed this is because the data is not available and the data sets do not go down to the electoral ward level.

Table 18.2: Human Health Summary Baseline Indicators

	Date	Local			Regional	National
		Fetteresso, Netherley & Catter)	Mearns South and Benholm	Mearns North and Inverbervie	Aberdeenshire	Scotland
Demographic Indicators						
Life expectancy at birth (males)	2019	81.8	80.2	80.0	78.9	76.8
Life expectancy at birth (females)	2019	N/A	82.7	82.6	82.4	80.9
	2012 to 2016 (5 year aggregate)	84.5	81.8	82.8	82.2	81.1
Mortality						
Deaths, aged 15-44 years (Age-sex standardised rate per 100,000)	2020	74.7	79.3	20.9	94.4	117.1
Deaths, under 75 years (Age-sex standardised rate per 100,000)	2020	196.2	386.2	321.9	350.5	449.8
Deaths all ages (Age-sex standardised rate per 100,000)	2020	770.1	1226.1	976.7	1058.7	1180.7
Mental Health and wellbeing						

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	Date	Local			Regional	National
		Fetteresso, Netherley & Catter)	Mearns South and Benholm	Mearns North and Inverbervie	Aberdeenshire	Scotland
Mental wellbeing score, males (16+) (Mean)	2019	N/A	N/A	N/A	51	49.4
Mental wellbeing score, females (16+) (Mean)	2019	N/A	N/A	N/A	50.5	49.5
Other						
Road traffic accident casualties (rate per 100,000 population)	2020	43.2	82.27	115.6	75.2	54.7
Percentage of working age population (16-64 years) classified as employment deprived	2017	1.86	5.15	4.24	5.24	9.29

18.6 Embedded Mitigation

- 18.6.1 The embedded mitigation discussed by other topics are relevant to human health, e.g. measures aimed at minimising and managing air quality impacts (CTMP, CEMP, DMP and Decommissioning Plan) and site design and infrastructure layout aimed at minimising landscape and visual effects. The mitigation will be refined during the development process as the EIA progresses and will supplement those measures outlined in Section 3.4.

18.7 Potential Proposed Development Impacts

- 18.7.1 The scoping of likely significant human health effects had regard to IEMA guidance on scoping of human health in EIA (Pyper, Lamming, *et al.*, 2022). For Scotland the IEMA guidance notes the following organisations for EIA engagement in relation to Human Health:
- Director of Public Health for the relevant NHS Board,
 - Public Health Scotland,
 - Relevant Health and Social Care Partnership, and
 - Local Authority Environmental Health Department.
- 18.7.2 At this stage it is anticipated that although there are likely significant beneficial effects on population health as a result of the Proposed Development's contribution to energy security and renewable energy generation, these do not require further assessment.
- 18.7.3 It is also anticipated that significant adverse effects on population health will be avoided through appropriate mitigation measures as set out in Section 3.4.
- 18.7.4 On this basis all population health effects are scoped out and it is not proposed that a Human Health chapter be included in the Onshore EIA Report.
- 18.7.5 Potential impacts listed in guidance (Pyper, Lamming, *et al.*, 2022) that are scoped out of the assessment are presented in Table 18.3, with justification.

Table 18.3: Potential impacts proposed to be Scoped Out – Human Health

Potential Impact	Justification
Health related behaviours	
Physical activity	All phases: Community physical activity is an important determinant of health. However, to avoid duplication this issue is addressed under “transport modes, access and connections” and “open space, leisure and play”.
Risk-taking behaviour	Construction and decommissioning phases: Issues of community health behaviours being detrimentally affected by the presence of the workforce are scoped out. This reflects a workforce of professionals who are assumed to return to their usual place of residence during periods of leave and following the end of the construction and decommissioning phases. The workforce is unlikely to be sufficiently large in number to affect local markets, e.g., for alcohol, cigarettes, fast-food or gambling, to an extent which could significantly affect population health. Operation and maintenance phase: Operational workforce numbers to check and maintain the Proposed Development are not anticipated to affect risk taking behaviour to an extent that could influence population health effect for the same reasons as stated for the construction and decommissioning phases. This issue is therefore scoped out.
Diet and nutrition	Construction and decommissioning phases: Construction may require some temporary reduction in availability or quality of agricultural land. This is however not considered to be on a scale that could change population diet or food prices and therefore significantly affect population health. This issue is therefore scoped out.

Potential Impact	Justification
	Operation and maintenance phase: No effects on diet and nutrition are expected from operation of the Proposed Development, as there would be no, or minimal, further disturbance of agricultural lands. This issue is therefore scoped out.
Social Environment	
Housing	Construction and decommissioning phases The majority of workers are assumed to be based in the regional area, returning to their usual place of residence when not working. Where temporary accommodation is required, this would be existing B&B/hotel bed spaces, as is typical for the construction industry. It is not expected that use of temporary accommodation would be on a scale to significantly displace local residents; adversely affect seasonal tourism; or otherwise affect housing availability to an extent that could influence population health. There is not expected to be a loss of residential housing or permanent loss of outdoor spaces associated with dwellings. Housing effects are scoped out. Operation and maintenance phase: The scale of operational workforce numbers to maintain the Proposed Development are not anticipated to affect housing to an extent that could influence population health for the same reasons as stated for construction and decommissioning phases. This issue is therefore scoped out.
Relocation	All phases: Construction, operational or decommissioning works would not involve compulsory purchases of homes or community facilities. This issue is therefore scoped out.
Open space, leisure and play	Construction and decommissioning phases : The public health implications of changes to access to PRoW or open space are scoped out and associated mitigation measures are expected to be described in the land use

Potential Impact	Justification
	and transport chapters of the Onshore EIA Report. The expectation is that works, in particular at the Landfall, would avoid permanent PRow closures and any temporary closures would be accompanied with suitable diversions of similar length and levels of accessibility. Similarly, any disruption of access to green and blue open spaces would be temporary and is not expected to prevent recreational activities in the area. Operation and maintenance phase: Proposed Development design principles (see Section 3.4) will seek to avoid interaction with populated areas, common land and recreational resources. Permanent land take for the Proposed Development, including the substation, is not within, or adjoining, community open space. Once construction is completed, no further disruption to PRow or areas of land is anticipated. Therefore, the change resulting from the operation of the Proposed Development is unlikely to significantly affect physical, mental or social health aspects of community recreation. These issues are therefore scoped out.
Transport modes, access and connections	Construction and decommissioning phases : The public health implications of changes in the road network (e.g. temporary road closures) or traffic conditions are scoped out on the basis of Scoping Report Section 15 and associated mitigation measures that are expected to be described in the traffic and transport chapter of the Onshore EIA Report. The expectation is that these measures would avoid significant effects to: routine or emergency health related journey travel times; access to health promoting goods and services; community severance; or road safety. Operation and maintenance phase: Once built, the Proposed Development is expected to have minimal implications for road transport, with activity limited to checks and maintenance. It is unlikely that there would be the potential for significant population health effects due to changes in:

Potential Impact	Justification
	routine or emergency health related journey travel times; access to health promoting goods and services; community severance; or road safety.
Community safety	All phases: Where Proposed Development works, including use of plant/machinery are undertaken these would be within controlled work areas, including use of appropriate fencing and signage / notifications as required. Best practice measures would be secured through suitable management plans. The risk to the public from accidental injury, e.g. accidents involving plant/machinery, falls or drowning is scoped out. Workforce numbers are not considered to increase the risk of population health effects from issues associated with worker behaviour in communities. Equally, the potential for widespread actual or perceived crime that could affect population health is unlikely. The Proposed Development will have appropriate safeguarding and modern slavery policies. Electrical risks to the public would be avoided through design, including fencing of above ground electrical infrastructure. These issues are therefore scoped out. The potential presence of peat may incur risks of small, localised peat landslides. Impacts on human receptors from peat slide risk are included within Section 12: Geology and Ground Conditions. However, it is considered that the risk of peat slides would be avoided with the implementation of appropriate best practice and risk mitigation discussed in Section 12: Geology and Ground Conditions. As such significant population health effects are unlikely. This issue has therefore been reviewed but is scoped out of the health assessment.
Community identity, culture, resilience and influence	Construction and decommissioning phases: Transient effects at the Landfall, along the Cable Corridor and at the Substation, including construction works and ancillary temporary infrastructure (e.g. construction compounds), temporary lighting and fencing and temporary changes in views, are not expected to influence community identity or disrupt community gatherings to an extent that could affect population health. This issue is therefore scoped out.

Potential Impact	Justification
	Operation and maintenance phase: The potential for the visual changes associated with the onshore substation (in isolation or in combination with other developments) to significantly influence population mental health and wellbeing is scoped out on the basis of mitigation measures, including planting and screening, that are expected to be described in the landscape and visual chapter of the Onshore EIA Report.
Social participation, interaction and support	All phases: Proposed Development activities will not directly affect land or access to land used for community interaction (e.g., meeting places, village greens, community centres, etc. that promote community voluntary, social, cultural or spiritual participation). This issue is scoped out.
Economic Environment	
Education and training	Construction and decommissioning phases: Cable routing and substation site selection will be conducted using appropriate buffer zones (up to 400 m) from any sensitive receptors, and as such the potential to adversely affect access to schools or other places of education is limited. Where this is not possible, trenchless techniques would be employed in sensitive locations. A large influx of workers, including those bringing families, is not expected, therefore changes to educational capacity or quality are unlikely and these issues are scoped out. Operation and maintenance phase: Operational education and training opportunities associated with the onshore infrastructure are not expected to be on a scale that could influence population health, even with benefits targeted to vulnerable groups. No effects on educational outcomes are expected due to noise. This issue is scoped out.
Employment and income	Construction and decommissioning phases

Potential Impact	Justification
	The Proposed Development would be expected to operate appropriate policies that safeguard against significant population challenges to equality, health and safety, for both workers and, as appropriate, the public. These issues are scoped out. The Proposed Development would operate appropriate employment equality policies but is not expected to influence how employment affects family structures and relationships in local populations. Occupational working conditions include particular risks, which are appropriately managed through health and safety policies and practices. Proposed Development activities are not expected to differ from industry norms. These issues are scoped out. Operational and maintenance phase: Operational employment associated with the onshore infrastructure is not expected to be on a scale that could influence population health, even with benefits targeted to vulnerable groups. This issue is scoped out.
<i>Biophysical Environment</i>	
Climate change and adaptation	Construction and decommissioning phases: Embodied carbon and climate altering pollutant emissions are not of a scale to have the potential for population level effects associated with climate change. This issue is scoped out. Operation and maintenance phase: The onshore infrastructure facilitates the benefits accrued from the renewable energy generating assets. However, to avoid duplication this issue is addressed under “Wider societal infrastructure and resources”.
Air quality	Construction and decommissioning: Construction air quality effects resulting from pollutant emissions to air, such as dust, particulate matter and nitrogen dioxide from traffic and plant are scoped out as they are not anticipated to be of a scale that may affect population health.

Potential Impact	Justification
	Operation and maintenance phase: Operational air quality effects (e.g., substation or maintenance vehicle emissions) are not anticipated to be of a scale, even accounting for non-threshold effects, that could affect population health. This issue is therefore scoped out.
Noise and vibration	Construction and decommissioning phases: Construction and decommissioning noise effects from onshore and nearshore activities, including annoyance and sleep disturbance from daytime and night-time works, are scoped out as they are not anticipated to be of a scale that may affect population health. Construction and decommissioning works will be managed in accordance with a number of noise control measures as set out in Section 14: Noise and Vibration, including a CTMP, CEMP and design noise control measures. However, a watching brief will be kept on the Noise and Vibration assessment and in the event that significant residual effects on human receptors are identified within the Noise and Vibration assessment, the scope of the human health assessment will be expanded to include an assessment of likely significant effects of noise and vibration impacts on population health.
Water quality or availability	Construction and decommissioning phases: Bathing water quality may be temporarily affected by Landfall works that create or mobilise pollutants, including potential toxin exposures through dermal contact or infection. Similarly, onshore pollution of surface water or groundwater bodies used as potable sources could affect the quality or availability of drinking water. Given the predominantly rural/agricultural nature of the Scoping Boundary, the onshore cable route will likely run along agricultural land and food safety could also be compromised by contamination of agricultural water sources. However, Section 19: Water Quality and Flood Risk Assessment explains that the Proposed Development would have a Surface Water Management Plan, with measures to prevent or mitigate surface water flooding; as well as measures in the CEMP that align with CIRIA C648 'Control of water pollution

Potential Impact	Justification
	from linear construction projects', to avoid pollution of surface and ground water due to accidental spillages/contaminant release. Based on the effectiveness of such measures pollution risk issues for population health are scoped out. Effects to public drinking water infrastructure are scoped out on the basis that disruption of the existing water utilities network would be avoided, including through diversions if appropriate, see discussion under 'built environment'. Operational and maintenance phase: Checks and maintenance activities are unlikely to result in any water related risks to public health. Any risks would be managed through standard best practice spill avoidance and response measures that would be secured through an Environmental Management Plan. This issue is scoped out.
Land quality	Construction and decommissioning phases: Ground condition and soil effects are scoped out. Risks of historic contamination disturbance and pollutant mobilisation are discussed in Section 12.6 of Section 12: Geology and Ground Conditions, of this Onshore Scoping Report, which indicates there is a low likelihood of any current or historical contaminative land uses. Population level issues, including direct contaminant exposure and food contamination, are scoped out and any residual risk is highly likely to be addressed by standard good practice ground investigation and contaminant discovery and management mitigation measures. Operation and maintenance phase: Checks and maintenance activities are unlikely to require excavations or result in land quality related risks to public health. Any risks would be managed through standard best practice contamination avoidance and response measures. This issue is scoped out.
Radiation	Construction and decommissioning phases: Works would not include using, or making changes to, active major electrical infrastructure producing EMF. Relevant public and occupational safeguards, secured

Potential Impact	Justification
	through management plans, would be followed for the temporary electrical equipment used. The strength of electric and magnetic fields reduces rapidly with distance, often requiring only a few meters separation between the source and receptor, to reach background levels. In addition, electrical fields within armoured cables are shielded by the steel armouring of the cables acting as a Faraday cage. No ionising radiation sources are proposed. As such, EMF issues, including public understanding of EMF, are scoped out. Operation and maintenance phase: For onshore infrastructure, including the onshore substation, the ‘actual EMF’ risks are scoped out. This reflects that the Projects would commit to comply with the International Commission on Non-ionizing Radiation Protection 1998 guidelines for limiting public EMF exposures.
Public understanding of risk (risk perception)	All Phases: Public understanding of EMF risk associated with the Proposed Development, in isolation or together with similar projects, is scoped out. This reflects that the potential for public concern to an extent that could significantly affect population mental health and wellbeing, is expected to be avoided through commitments to provide non-technical information to local residents on the Proposed Development’s compliance with EMF health protection standards (e.g. ICNIRP, 1998, 2010). The information would be provided during consultation on the application and during project implementation. Visual and auditory cues for community concern associated with the Proposed Development’s substation are also expected to be mitigated through measures set out in the landscape and visual and noise and vibration chapters of the Onshore EIA Report.
Institutional and built environment	
Health and social care services	Construction and decommissioning phases: Effects on health and social care are scoped out. The Proposed Development workforce is assumed to include a high proportion of people who are resident in the regional area.

Potential Impact	Justification
	The UK workforce would have access to National Health Service entitlement irrespective of place of residence. The expectation is that the great majority of healthcare needs of the Proposed Development workforce will be met either by occupational provision during construction and decommissioning or by their usual healthcare provider when they return to their usual place of residence. It is not expected that a high proportion of workers would move to the area with dependants requiring social care. Health protection measures such as screening and immunisations are expected to continue from the workers' usual place of residence. Similarly routine dental appointments are assumed to be with the worker's dental practice close to their usual place of residence. Other health services are not expected to be affected as no largescale in-migration is expected. This issue is therefore scoped out. Operational and maintenance phase: Minimal operational workforce numbers are anticipated to check and maintain the Proposed Development infrastructure. There is not considered to be the potential for a likely significant population health effect, this issue is scoped out.
Built environment	Construction and decommissioning phases: The potential for the Proposed Development to affect existing features of the built environment that are supportive of population health has been considered and scoped out. The Proposed Development would have a relatively low impact, including due to the use of trenchless techniques to avoid surface disruption at sensitive features, where an appropriate buffer zone cannot be maintained. Similarly, the position of existing services, such as water and sewer systems will be taken into account in planning the Cable Corridor and techniques used. Appropriate diversions would occur to avoid disruption to such services. This issue is therefore scoped out. Operation and maintenance phase:

Potential Impact	Justification
	The Proposed Development's infrastructure would have a very limited long-term impact on land use patterns, with the main change relating to the substation. Appropriate buffer zones would be maintained between infrastructure and communities and the design is resilient to accidents and disasters. These issues are therefore scoped out.
Wider societal infrastructure and benefits	Construction and decommissioning phases: The Proposed Development's energy infrastructure would not generate public health benefits at this stage. This issue is scoped out. Operation and maintenance phase: During operation, the Proposed Development would contribute to increased national energy security and the provision of renewable energy. This supports many aspects of public health and the assessment and is anticipated to be a significant public health benefit of the Proposed Development. This potentially significant effect is noted but is not considered to require further assessment.

18.8 Assessment Methodology

- 18.8.1 The methodology for human health in EIA is published by the IEMA (Pyper *et al.*, 2022) and regard can also be had to the wider health impact assessment (HIA) guidance, key sources are listed in Table 18.4.
- 18.8.2 Whilst an Onshore EIA Report Human Health chapter is not proposed, the above reference guidance has informed this scoping stage.
- 18.8.3 The IEMA guidance (Pyper *et al.*, 2022) explains that an Onshore EIA Report health chapter is only required where:
- either other EIA technical topics have been scoped in to assess likely and potentially significant effects to human receptors, community amenities or services, and there are likely and potentially significant population health implications from such assessments;
 - or there is likely to be a change due to the project in a wider determinant of health not covered by other EIA technical topics, and this change is potentially significant for population health.

Table 18.4: Relevant guidance for human health assessment

Guidance	Relevance
IEMA 2022 guidance on health in EIA series, effective scoping (Pyper <i>et al.</i> , 2022a) and determining significance (Pyper <i>et al.</i> , 2022b).	Practitioner guidance on the coverage of human health in EIA for England, Wales, Scotland, Northern Ireland and the Republic of Ireland. This includes methods for determining population health sensitivity, magnitude and significance. This is the key methods citation.
Institute of Public Health (IPH), Guidance, Standalone Health Impact Assessment and health in environmental assessment, 2021 (Pyper <i>et al.</i> , 2021).	Sets current good practice for the assessment of human health in EIA, including assessment methods. This updates the 2009 guidance from the IPH. This guidance for Northern Ireland and Republic of Ireland can be applied more broadly in the UK.
International Association for Impact Assessment (IAIA) and European Public Health Association (EUPHA). A reference paper on addressing Human Health in EIA (Cave <i>et al.</i> , 2020).	This international consensus piece informed the IPH 2021 guidance. The publication explains EIA for public health stakeholders and sets out transparent assessment approaches adopted by the IPH.
International Association for Impact Assessment. Health Impact Assessment International Best Practice Principles, 2021 (Winkler <i>et al.</i> , 2021).	Confirms the relationship between HIA and EIA. Confirms the application of HIA principles when undertaking health in EIA.

Guidance	Relevance
Scottish Health and Inequality Impact Assessment Network (SHIAN) Health Impact Assessment Guidance for Practitioners, 2019 (Douglas, 2016)	Practitioner guidance on HIA practice in Scotland. It is intended primarily for people working in Scotland and identifies relevant Scottish resources.

18.9 Potential Inter-Relationships

- 18.9.1 The assessment of inter-relationships between factors that may affect population health will be considered within other chapters of the Onshore EIA Report. This will include consideration of Proposed Development lifetime effects and receptor-led effects, in line with the approach outlined in Section 4: EIA Methodology.

18.10 Potential Cumulative Effects

- 18.10.1 The expectation is that any potential for significant cumulative population health effects would be avoided through mitigation measures discussed in other Onshore EIA Report chapters. For example, cumulative effects on community identity from the combination of the Proposed Development's substation and other similar development within a similar area are expected to be avoided through measures set out in the landscape and visual impact assessment chapter.
- 18.10.2 The proposed approach to assessment of cumulative effects is set out in Section 4.5, where the range of likely cumulative developments is considered in detail.
- 18.10.3 Where proportionate, and significant effects are identified the need for mitigation and/or monitoring will be considered, including relevant governance.

18.11 Summary of Proposed Scope

- 18.11.1 It is proposed to scope Human Health out of the EIA Report. This reflects that the potential for any significant adverse population health effects will be avoided by mitigation measures that will be described in other Onshore EIA Report chapters.

19 Water Quality and Flood Risk

19.1 Introduction

- 19.1.1 This section of the Onshore Scoping Report identifies the potential Water Quality and Flood Risk impacts of relevance to the Proposed Development and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development.
- 19.1.2 This section describes the assessment methodology, the baseline conditions that currently exist within the Scoping Boundary and the surrounding area. The report also looks at any potential impacts of the Proposed Development and discusses whether further reporting is required to mitigate and reduce any significant adverse effects. This assessment focuses on the likely effects of the Proposed Development on flood risk and water resources, including water quality and flow regimes.

19.2 Planning Policy and Legislation

- 19.2.1 Section 2: Policy and Legislation, outlines the policy and legislation that is applicable to the Proposed Development. The policy and legislation of particular relevance to the assessment of water quality and flood risk is set out below.

National Legislation

- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended);
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (the 2017 Regulations). Under Section 2 of the European Union (Withdrawal) Act 2018;
- The Water Environment (Miscellaneous) (Scotland) Regulations 2017; and
- Flood Risk Management (Scotland) Act 2009.

National Policy

- NPF4 (Scottish Government, 2023) Including the following policies:
 - Policy 2 Climate Mitigation and Adaption;
 - Policy 10 Coastal Change; and
 - Policy 22 Flood Risk and Water Management.

Local policy

- North East Local Plan District- Local Flood Risk Management Plan (2022-2028) published December 2022; and
- ALDP 2023.
 - Policy C4 Flooding; and
 - Policy PR1 Protecting Important Resources.

Relevant Guidance

19.2.2 Relevant guidance includes:

- National Highways *et al.* (2020) DMRB LA113 Road drainage and the water environment;
- National Highways *et al.*, (2020) DMRB LA104 Environmental assessment and monitoring;
- Policy No. 19, Groundwater protection policy for Scotland (SEPA, 2009);
- WAT-SG-25, Good practice guide - river crossings (SEPA, 2010b);
- SEPA Guidance Note 8 standing advice for planning authorities and developers on development management consultations (SEPA, 2012);
- Flood Risk Management (Scotland) Act 2009: Delivering Sustainable Flood Risk Management;
- Flood Risk Management (Scotland) Act 2009: Surface Water Management Planning Guidance;
- Development Management Guidance: Flood Risk (SEPA, 2017);
- Natural Flood Management Handbook (SEPA, 2015);
- Regulatory Position Statement – Developments on Peat (SEPA, 2010a);
- Developments on Peatland; Guidance on the Assessment of Peat Volumes, reuse of excavated peat and the minimisation of waste (Scottish Renewables, 2012);
- Climate Change Allowances for flood risk assessment in land use planning (SEPA, 2023);
- Control of water pollution from linear construction projects. Site guide (C649D) (CIRIA, 2006).

19.3 Study Area

19.3.1 The study area to be used for the assessment of Water Quality and Flood Risk (the Water Quality and Flood Risk Study Area) will be based on the Scoping Boundary of the Proposed Development shown in Figure 1.3 and will focus on areas landward of MHWS, where potential impacts are most likely to occur on water quality and flood risk receptors.

19.3.2 As such, the Water Quality and Flood Risk Study Area to be used in the assessment will be defined as:

- The area of land to be temporarily or permanently occupied during construction, operation and maintenance, and decommissioning of the onshore elements of the Proposed Development.
- Surface and ground water receptors and flood risk receptors located within 250 m of land temporarily or permanently occupied during the construction, operation and maintenance, and decommissioning of the Proposed Development. The 250 m buffer is considered appropriate for data collection taking into account the likely zone of influence on hydrological receptors but may be extended where hydrologically connected catchments are identified.

- Surface and ground water receptors and flood risk receptors located within 1 km of the Substation. The 1 km buffer was chosen primarily to identify any existing receptors, assets or infrastructure that have the potential to be affected by flood risk as a result of the Substation.

19.3.3 The Water Quality and Flood Risk Study Area will include temporary accesses, access routes (including haul roads), storage areas and construction compounds required to facilitate construction, operation and maintenance and decommissioning of the Proposed Development.

19.3.4 The Water Quality and Flood Risk Study Area will be reviewed and modified, if necessary, in response to refinements made to the design of the Proposed Development and/or any additional environmental and/or design constraints identified during the EIA process.

19.4 Data Sources

19.4.1 An initial desk-based review of literature and data sources to support this Onshore Scoping Report is presented within Table 19.1.

Table 19.1: Water quality and flood risk data sources

Data Source	Author	Date
Flood Risk Management Maps	SEPA	2024
North East Local Plan District Local Flood Risk Management Plan	Aberdeenshire Council	2022
ALDP	Aberdeenshire Council	2024
OS Mapping	Ordnance Survey	2024
SEPA Water Classification Hub	SEPA	2024
Scotland's Environment Map	SEPA	2024

19.4.2 In addition to the above data, site-specific hydrological data will be obtained via consultation with the SEPA, Lead Local Flood Authority (LLFA), Envirocheck/Groundsure and site reconnaissance.

19.5 Baseline Environment

19.5.1 An initial review of SEPA 'Main river and coastal catchments mapping' indicates the Water Quality and Flood Risk Study Area is located within the Kincardine and Angus Coastal catchment to the north and south and the Bervie Water Catchment in the centre of the area.

Waterbodies Present

19.5.2 An initial review of published OS maps and SEPA data indicates a complex hydrological network within the Water Quality and Flood Risk Study Area, comprising of drainage ditch networks outfalling to the following larger watercourses:

- Burn of Benholm located at the south of the site;
- Peattie Burn located in the south of the site;

- Hareden Burn located in the south of the site;
- Bervie Water located towards the middle of the study area;
- Forthie Water located towards the middle of the study area;
- Bridgend Burn located toward the middle of the study area;
- Drumlithie Burn located towards the north of the study area;
- Carron Water and associated tributaries located towards the north of the study area;
- Burn of Annamuick located in the north of the study area;
- Burn of Elfhill located in the north of the study area;
- Burn of Baulks located in the north of the study area;
- Whiting Burn located in the north of the study area; and
- Burn of the Day located in the north of the study area. Fluvial and Tidal Risk

- 19.5.3 The SEPA Flood Map (SEPA, 2023) is presented within Figure 19.1. It indicates that the majority of the Water Quality and Flood Risk Study Area is located within an area which has a large extent designated as having ‘no specific risk’ of fluvial flooding. This indicates the annual probability of flooding is classified as less than 0.1%/1 in 1,000 chance in each given year.
- 19.5.4 Areas at ‘medium’ risk of flooding (0.5%/1 in 200 chance in each given year) to ‘high’ risk of flooding (10%/1 in 10 chance each year) are associated with rivers mentioned above that lie within the Water Quality and Flood Risk Study Area.
- 19.5.5 The SEPA Flood Map (SEPA, 2023) also indicates that the Landfall section of the Proposed Development is located within an area which is partially designated as having a ‘high likelihood’ of coastal flooding, whereby the annual probability of flooding is 10%/1 in 10 chance in each given year. Coastal flood extents appear to be predominantly associated with beach profile.
- 19.5.6 Mapping shows no SEPA flood defences within the Water Quality and Flood Risk Study Area. However, it is anticipated the beach profile acts as an informal sea defence.

Future Flood Risk

- 19.5.7 The SEPA Future Coastal Flood Map (SEPA, 2023) indicates that by 2080s, areas located within the Landfall area that are currently at ‘low’ (0.1% chance of coastal flooding) will increase to a 0.5% chance of coastal flooding). The extent of coastal flooding will increase slightly along the coast near the Landfall area.
- 19.5.8 The SEPA Future River Flood Map (SEPA, 2023) indicates the extent of fluvial flood risk will remain the same as in the present-day scenario however areas classified as ‘low’ risk (0.1% chance of river flooding) increases to a 0.5% chance of river flooding by the 2080s.

Surface Water Risk

- 19.5.9 The SEPA Flood Map (SEPA, 2023) also indicates that the Water Quality and Flood Risk Study Area is susceptible to surface water flooding. Mapping is presented within Figure 19.1 and indicates the majority of land located at 'no specific risk', ranging to small extents of 'high likelihood' which corresponds with annual probabilities of, <0.1%, between 0.1% and 0.5%, between 0.5% and 10% and >10% respectively. Low to high risk areas are localised and attributed to small watercourses and surface depressions.

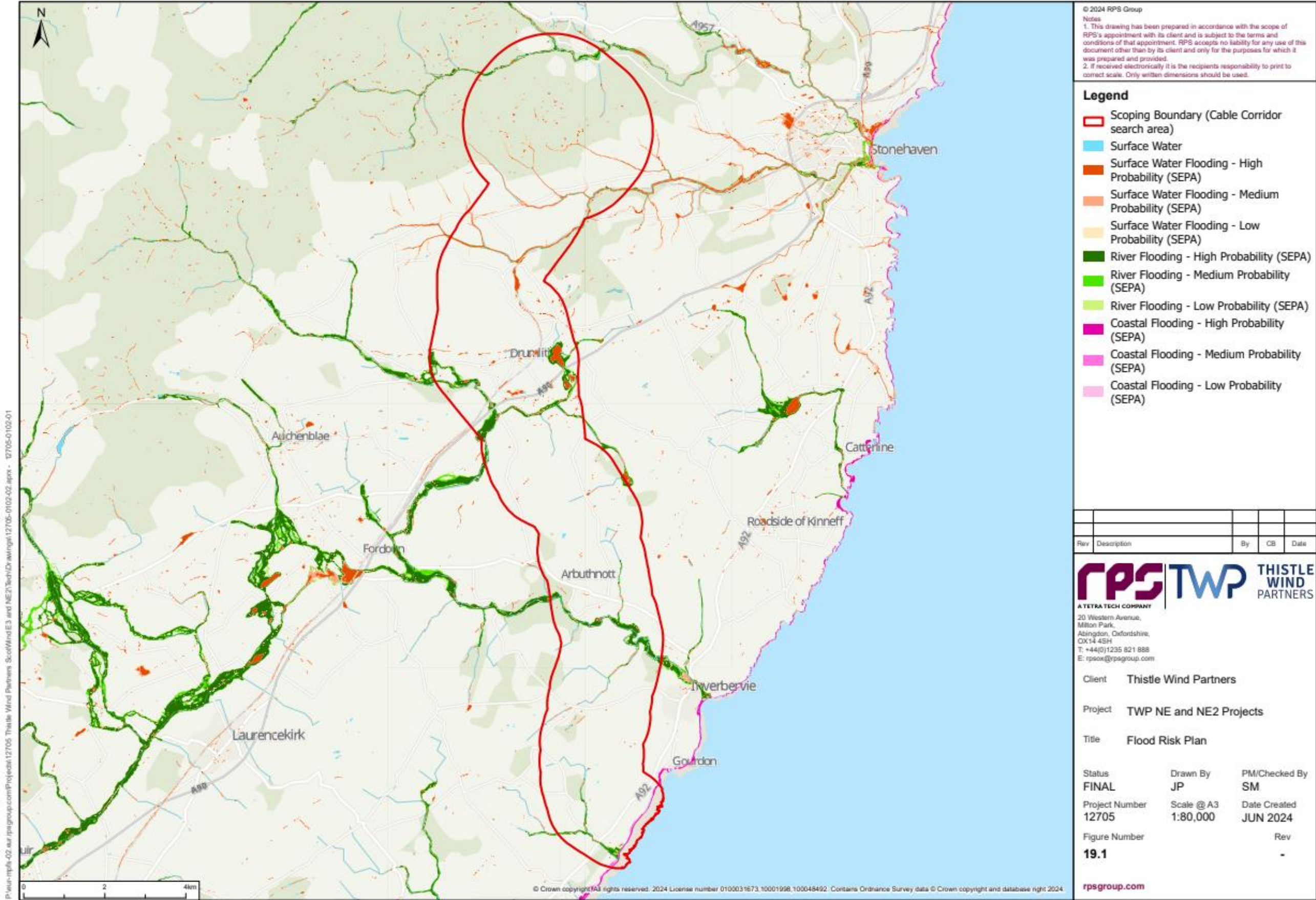


Figure 19.1: Flood risk map within and outside the Scoping Boundary

Designated Sites

19.5.10 There are no SSSI, SAC or SPA sites within the Scoping Boundary.

19.5.11 The study area incorporates Drumlithie, St Cyrus, Stonehaven and Portlethen Drinking Water Protection Zones.

Water Framework Directive

19.5.12 Under the Water Framework Directive (WFD), hydrological features often contribute either directly or indirectly to the overall framework designation. Hydrological designations within the Water Quality and Flood Risk Study Area are provided in Table 19.2.

Table 19.2 WFD classifications within the study area

River Name/Watercourse and ID	Waterbody Type	Classification (2022)
Bervie Water Lower Catchment (23264)	River	Poor
Bervie Water Upper Catchment (23262)	River	Moderate
Forthie Water (23263)	River	Moderate
Carron Water (23257)	River	Moderate
Couts Rock to Scurdie Ness (200084)	Coastal	Good
Big Robs Cove to Couts Rock (Inverbervie) (200087)	Coastal	Good
Burn of Benholm (23260)	River	Moderate
Cowie Water - Fetteresso Forest (23254)	River	High
Drumlithie (150585)	Groundwater	Good
Stonehaven (150550)	Groundwater	Good
St Cyrus (150524)	Groundwater	Good
Portlethen (150625)	Groundwater	Good

Future Baseline Conditions

19.5.13 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic.

19.6 Embedded Mitigation

19.6.1 The requirement for and feasibility of mitigation measures will be dependent upon the significance of effects and will be consulted upon with relevant statutory and non-statutory consultees throughout the EIA process.

19.6.2 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies to avoid and/or minimise potential effects on receptors where possible.

19.6.3 The following embedded mitigation is relevant to water quality and flood risk. This is in addition to the overarching Design Principles as outlined in Section 3.4.:

- CEMP: Construction of the Proposed Development would be undertaken in accordance with the relevant best practice measures such as those recommended in CIRIA C648 (CIRIA, 2006) – ‘Control of water pollution from linear construction projects and other relevant guidance.
- Pollution Prevention Measures: An outline Pollution Prevention Plan will be prepared and submitted with the application for PPP. The Pollution Prevention Plan will be prepared in accordance with the outline Pollution Prevention Plan and in accordance with pollution control guidance documents prepared by SEPA where appropriate, or the latest relevant available guidance. Measures to be incorporated include details of emergency spill procedures, including measures for handling oils, fuels or other harmful substances as to avoid pollution of surface and ground water receptors due to accidental spillages/contaminant release.
- Flood Control Measures: Temporary haul roads will be installed comprising permeable gravel overlying a permeable geotextile membrane of an appropriate standard. A buffer between watercourses and temporary construction compounds/storage areas is to be set, subject to consultation with SEPA. Appropriate construction methods will be adopted to maintain the existing level of flood protection within areas of ‘medium’ to ‘high’ likelihood of flooding, subject to agreement with SEPA. These measures are likely to include an outline Flood Management Plan to be applied to areas of the development within ‘medium’ to ‘high’ likelihood of flooding to enable site personnel evacuation from the site in a timely manner prior to a flood event occurring.
- Watercourse Crossings: A method statement will be prepared for watercourses and drainage ditches to be crossed by open cut and trenchless techniques, with site-specific method statements for the crossings of watercourses. The methods statement will be developed in discussion with SEPA and other relevant authorities and include details of crossing design, easements from watercourses and informal and formal flood defences any monitoring to be undertaken and remedial measures put in place. Site investigations will be undertaken at crossings to be undertaken via trenchless techniques during detailed design to confirm local geological conditions.
- Outline Drainage Strategy: An Outline Drainage Strategy will be prepared and submitted with the application for PPP. An Onshore Infrastructure Construction Drainage Scheme will be developed for the temporary onshore construction works in accordance with the Outline Onshore Infrastructure Drainage Strategy. The Onshore Infrastructure Construction Drainage Scheme will ensure that existing land drainage is maintained during construction and will identify specific drainage measures for each area of land based on information identified and

recorded by a land drainage consultant prior to construction. It will include measures to control surface water runoff, including measures to prevent flooding of the working area or offsite and to ensure any runoff is treated appropriately. The Onshore Infrastructure Construction Drainage Scheme will be developed in consultation with landowners, the LLFA and SEPA.

- Onshore Infrastructure Operational Drainage Scheme: To include measures to ensure that existing land drainage is reinstated and/or maintained. This will include measures to limit discharge rates and attenuate flows to maintain greenfield runoff rates at the substation. The Onshore Infrastructure Operational Drainage Scheme will be developed in line with the latest relevant drainage guidance notes in consultation with the LLFA and SEPA.
- Onshore Decommissioning Plan: To be developed prior to decommissioning in a timely manner. The Onshore Decommissioning Plan will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure and details relevant to flood risk, pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant available guidance.

19.7 Potential Proposed Development Impacts

- 19.7.1 A range of potential impacts on water quality and flood risk receptors have been identified which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development. The vast majority of impacts have been scoped out, as it is considered that identified impacts will be adequately addressed with a supporting FRA and WFD Screening Report.
- 19.7.2 The impacts that have been scoped into the assessment are outlined in Table 19.3 together with a description of any additional data collection (e.g., site-specific surveys) and supporting analyses that will be required to enable a full assessment of the impacts.
- 19.7.3 Potential impacts scoped out of the assessment are presented in Table 19.4, with justification.

Table 19.3: Potential impacts proposed to be Scoped In – Water Quality and Flood Risk

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
The impact of increased flood risk arising from additional surface water runoff during construction of the Proposed Development.	✓	x	x	Activities required to facilitate the construction of the Proposed Development (e.g., temporary construction compounds, removal of surface vegetation, compaction of soils, excavations, dewatering) may alter drainage patterns and surface water runoff rates onsite, increasing the risk of flooding posed to the surrounding area.	Baseline flood risk within the Water Quality and Flood Risk Study Area for the Proposed Development will be determined using desk-based analysis of flood risk mapping data published by SEPA and site specific data obtained to inform the FRA.	The potential impact of flood risk arising from additional surface water runoff will be assessed and mitigated appropriately based on the results of FRA, which is to be submitted alongside the Onshore EIA Report. This FRA will comprise desk-based assessment of flood risk from all sources of flooding, including appropriate allowances for climate change.
The impact of increased flood risk arising from additional surface water runoff during operation of the substation.	x	✓	x	The installation of the substation would result in additional impermeable land, which may alter drainage patterns and surface water runoff rates onsite, increasing the risk	Baseline flood risk within the Water Quality and Flood Risk Study Area for the Proposed Development will be determined using desk-based analysis and site	Modelling would primarily be limited to above ground permanent infrastructure (e.g., substation). Modelling would be undertaken, using Micro Drainage Software (or similar), to analyse surface

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
				of flooding within the site and the surrounding area.	specific data obtained to inform the FRA.	water runoff and inform suitable mitigation measures, including the design of SuDS.
The impact of increased flood risk arising from damage to existing flood defences during the construction of the elements of the Proposed Development.	✓	x	x	If the Proposed Development is located within or near existing formal and informal flood defences, activities required to facilitate construction of the Proposed Development may impact the integrity (or efficacy) of flood defence infrastructure and increase the risk of flooding within the site and the surrounding area.	Existing formal and informal flood defences within the Water Quality and Flood Risk Study Area for the Proposed Development will be determined using desk-based analysis of flood risk mapping data published by the SEPA and site specific data obtained to inform the FRA.	The potential impact of increased flood risk arising from damage to existing formal and informal flood defences will be assessed using desk-based analysis in accordance with the methodology set out in Section 4: EIA Methodology, in addition to the application of professional judgement where required. In addition, detailed consultation with the LLFA and SEPA would be undertaken to discuss works on or near existing flood defences.
The impact of increased flood risk arising from	✓	x	x	If the Proposed Development is located on	Existing watercourses located within the Water	The impact of increased flood risk arising from

Potential Impact	Project Phase*			Justification	Data collection and analysis required to characterise the baseline environment	Summary of the proposed approach to assessment
	C	O	D			
watercourse diversion associated with construction of the substation.				or near existing watercourses, activities required to facilitate construction of the Proposed Development may require watercourse diversion. Unless the diversion is designed to adequately convey flow downstream, a diversion may increase flood risk upstream of the substation.	Quality and Flood Risk Study Area for the Proposed Development will be identified using a desk-based analysis and site specific data obtained to inform the FRA.	diversion of a watercourse will be assessed using desk-based analysis in accordance with the methodology set out in Section 4: EIA Methodology in addition to the application of professional judgement where required. In addition, detailed consultation with the relevant stakeholders would be undertaken to discuss works on or near existing watercourses.

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D))

Table 19.4: Potential impacts proposed to be Scoped Out – Water Quality and Flood Risk

Potential Impact	Justification
The impact of contaminated runoff on the quality of surface water and ground receptors during construction, operation and maintenance and decommissioning of the Proposed Development	Standard mitigation including a CEMP and PPP (see Section 19.6) to be implemented during construction and decommissioning will mitigate the risk of activities associated with construction and decommissioning from generating contaminated runoff. Therefore, the potential impact of contaminated runoff on the quality of surface water receptors during the construction and decommissioning of the Proposed Development is unlikely to be significant and is proposed to be scoped out of the assessment for water quality and flood risk. Activities associated with the operation and maintenance of the Proposed Development are unlikely to generate contaminated runoff. Therefore, the potential impact of contaminated runoff on the quality of surface water receptors during the operation and maintenance of the Proposed Development is unlikely to be significant and is proposed to be scoped out of the assessment for water quality and flood risk.
The impact of increased flood risk arising from additional surface water runoff during the operation and maintenance of the Onshore Export Cables and decommissioning of the Proposed Development	The operation and maintenance of the Onshore Export Cable and associated infrastructure may result in a minor increase in the total area of impermeable land. However, the increase in impermeable land arising from the operation and maintenance of the onshore cable is unlikely to result in a notable change in drainage patterns and surface water runoff rates. Therefore, the potential impact of flood risk arising from additional surface water runoff during the operation and maintenance of the Onshore Export Cable is unlikely to be significant and is proposed to be scoped out of the assessment. Standard mitigation to be implemented during decommissioning will mitigate the risk of activities associated with construction and decommissioning from increasing flood risk arising from additional surface water runoff. Therefore, the potential impact of increased flood risk arising from additional surface water runoff during the construction and decommissioning of the Proposed Development is unlikely to be significant and is proposed to be scoped out of the assessment for water quality and flood risk.

Potential Impact	Justification
The impact of increased flood risk arising from watercourse diversion associated with the operation and maintenance and decommissioning of the onshore substation	During operation and maintenance and decommissioning, any watercourses diverted as part of construction phase development will continue to adequately convey flow downstream without increasing flood risk upstream. Therefore, the potential impact of increased flood risk arising from a watercourse diversion during operation and maintenance and decommissioning of the Proposed Development is unlikely to result in significant effects and is proposed to be scoped out of the assessment for water quality and flood risk.
The impact of increased flood risk arising from damage to existing flood defences during the operation and maintenance and decommissioning of the Proposed Development.	During operation, the onshore cable corridor will require limited operational and maintenance requirements. Activities required to facilitate the operation and maintenance of the Proposed Development are unlikely to impact the integrity (or efficacy) of existing flood defences. Therefore, the potential impact of increased flood risk arising from damage to existing flood defence infrastructure during the operation and maintenance of the Proposed Development is unlikely to result in significant effects and is proposed to be scoped out of the assessment for water quality and flood risk. Standard mitigation to be implemented during decommissioning. Activities required to facilitate the decommissioning of the Proposed Development are unlikely to impact the integrity (or efficacy) of existing flood defences. Therefore, the potential impact of increased flood risk arising from damage to existing flood defence infrastructure during decommissioning of the Proposed Development is unlikely to result in significant effects and is proposed to be scoped out of the assessment for water quality and flood risk.
The impact of damage to existing water and sewer pipelines during the construction, operation and decommissioning of the Proposed Development.	Standard mitigation to be implemented during construction and decommissioning will mitigate the risk of construction activities potentially damaging water and sewer pipelines during the construction and decommissioning of the Proposed Development is unlikely to be significant and is proposed to be scoped out of the assessment for water quality and flood risk. During operation and maintenance, the onshore cable corridor will require limited operational maintenance requirements. As such it is unlikely that damage would be caused to water and sewer pipelines during operation. Therefore, the potential impact of damage to field drainage during operation of the Proposed Development is unlikely to result in significant effects

Potential Impact	Justification
	and is proposed to be scoped out of the assessment for water quality and flood risk.
The impact of damage to existing field drainage during the construction, operation and decommissioning of the Proposed Development.	Standard mitigation to be implemented during construction and decommissioning will mitigate the risk of construction activities potentially damaging field drainage during the construction and decommissioning of the Proposed Development is unlikely to be significant and is proposed to be scoped out of the assessment for water quality and flood risk. During operation and maintenance, the onshore cable corridor will require limited operational maintenance requirements. As such it is unlikely that damage would be caused to field drainage during operation. Therefore, the potential impact of damage to field drainage during operation of the Proposed Development is unlikely to result in significant effects and is proposed to be scoped out of the assessment for water quality and flood risk.

19.8 Proposed Assessment Methodology

19.8.1 The water quality and flood risk assessment for the Proposed Development will be undertaken in accordance with the methodology set out in Section 4: EIA Methodology, in addition to the following policy and guidance:

- NPF4 (Scottish Government, 2023);
- North East Local Plan District- Local Flood Risk Management Plan (2022-2028) published December 2022;
- ALDP 2023;
- National Highways et al (2020) DMRB LA113 Road drainage and the water environment;
- National Highways et al (2020) DMRB LA104 Environmental assessment and monitoring (General Principles to be referred to);
- Policy No. 19, Groundwater protection policy for Scotland (SEPA, 2009);
- WAT-SG-25, Good practice guide - river crossings (SEPA, 2010b);
- SEPA Guidance Note 8 standing advice for planning authorities and developers on development management consultations (SEPA, 2012);
- Flood Risk Management (Scotland) Act 2009: Delivering Sustainable Flood Risk Management;
- Flood Risk Management (Scotland) Act 2009: Surface Water Management Planning Guidance;
- Development Management Guidance: Flood Risk (SEPA, 2017);
- Natural Flood Management Handbook (SEPA, 2015);
- Regulatory Position Statement – Developments on Peat (SEPA, 2010a);

- Developments on Peatland; Guidance on the Assessment of Peat Volumes, reuse of excavated peat and the minimisation of waste (Scottish Renewables, 2012);
- Climate Change Allowances for flood risk assessment in land use planning (SEPA, 2023);
- Control of water pollution from linear construction projects. Site guide (C649D) (CIRIA, 2006)

Flood Risk Assessment

- 19.8.2 In accordance with NPF4, a FRA will be undertaken for the Proposed Development to determine baseline and future flood risk from all sources of flooding. The FRA will include calculations of surface water run-off rates and evidence of how surface water will be attenuated within the transmission asset boundary. The methodology and scope of the FRA, including mitigation proposals, will be agreed through consultation with the SEPA and LLFA.
- 19.8.3 The FRA will be used to inform the design of the Proposed Development and mitigation measures, including Outline Drainage Strategy and Onshore Infrastructure Operational Drainage Scheme. The conclusions of the FRA will be referred to in the assessment of water quality and flood risk in the Onshore EIA Report where relevant. The FRA will form a technical appendix of Onshore EIA Report.

19.9 Potential Inter-Relationships

- 19.9.1 The assessment of inter-relationships between factors that may affect population health will be considered within other chapters of the Onshore EIA Report. This will include consideration of Proposed Development lifetime effects and receptor-led effects, in line with the approach outlined in Section 4: EIA Methodology.

19.10 Potential Cumulative Effects

- 19.10.1 There is potential for cumulative effects to occur on sensitive receptors between the Proposed Development and other developments. The potential cumulative effects of the Proposed Development together with other developments with respect to water quality and flood risk will be considered within the Onshore EIA Report.
- 19.10.2 The proposed approach to the assessment of cumulative effects is set out in Section 4.5, where the range of likely cumulative developments is considered in detail.

19.11 Summary of Proposed Scope

- 19.11.1 A scoping assessment has been undertaken for the Scoping Boundary in relation to water quality and flood risk. The scoping assessment has assessed waterbodies within the Scoping Boundary and defined the Water Quality and Flood Risk Study Area in addition to a summary of flood risk and water quality using publicly available SEPA data.

- 19.11.2 The scoping exercise has concluded that because of potential water quality and flood risk impacts arising from the Proposed Development during the construction, operational and decommissioning phases that a Water Quality and Flood Risk Assessment Chapter should be scoped into the Onshore EIA Report.

20 Summary

20.1 Scoped Into the Environmental Impact Assessment

20.1.1 The topics that have been included within this Onshore Scoping Report have addressed the potential impacts that will arise as a result of the Proposed Development. Therefore, the following topics (see Table 20.1) and impacts are proposed for inclusion into the Onshore EIA Report. The project phase column indicates which phase(s) the impact is relevant to and where it will be scoped in with respect to each phase.

Table 20.1: Topics and Impacts Proposed to be Scoped into the EIA

Impact per Topic	Project Phase*		
	C	O	D
Land Use Soils and Agriculture			
Agricultural land and soils (excluding peat)	✓	x	✓
Agricultural land holdings	✓	✓	✓
Public access: Public rights of way and access routes	✓	x	x
Public access: Recreational resources	✓	x	x
Commercial Forestry	✓	✓	✓
Biodiversity and Terrestrial Ecology			
Temporary disturbance or permanent modification/loss to GWDTEs and other priority habitats	✓	x	✓
Temporary or permanent disturbance/displacement, permanent modification/loss to foraging, sheltering and breeding sites for protected species	✓	x	✓
Indirect impacts due to accidental pollution and/or contamination of habitats as well as habitats used by onshore ecological receptors	✓	✓	✓
Onshore Ornithology			
Temporary or permanent loss of or modification to habitats used by onshore ornithological receptors (including the Landfall)	✓	x	✓
Accidental disturbance of nesting birds and/or damage or destruction of nests and/or eggs	✓	x	✓
Temporary or permanent disturbance/ displacement of onshore ornithological receptors (including the Landfall)	✓	x	✓
Indirect impacts due to accidental pollution and/or contamination of habitats used by onshore ornithological receptors	✓	x	✓
Landscape and Visual Impact Assessment			

Impact per Topic	Project Phase*		
	C	O	D
Landfall – Landscape Character Impacts	✓	x	✓
Cable Corridor – Landscape Character Impacts	✓	x	✓
Substation – Landscape Character Impacts	✓	✓	✓
Landfall – Visual Impacts	✓	x	✓
Cable Corridor – Visual Impacts	✓	x	✓
Substation – Visual Impacts	✓	✓	✓
Cultural Heritage			
Construction impacts upon the physical fabric of heritage assets, both known and unknown	✓	x	x
Construction and operation impacts upon deposits of paleoenvironmental interest	✓	✓	x
Operational impacts upon designated heritage assets as a result of change in their setting	x	✓	x
Geology and Ground Conditions			
Disturbance of peat	✓	x	x
Disturbance of GWDTEs	✓	x	x
Interruption of PPWSs	✓	✓	✓
Disturbance of contaminated soils and groundwater	✓	x	x
Air Quality			
The impact of dust soiling (nuisance) on property arising from dust emissions generated by onsite construction and decommissioning activities	✓	x	✓
The impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by onsite construction and decommissioning activities	✓	x	✓
The impact on human receptors arising from air emissions generated by vehicles during the construction and decommissioning phase	✓	x	✓
Noise and Vibration			

Impact per Topic	Project Phase*		
	C	O	D
The impact of noise and vibration generated by construction and decommissioning activities for the Proposed Development on human receptors	✓	x	✓
The impact of noise generated by additional vehicle movements on the local highway network during the construction and decommissioning phases for the Proposed Development on human receptors	✓	x	✓
The impact of noise generated during the operation and maintenance of the Substation on human receptors	x	✓	x
Traffic and Transport			
The impact upon driver (including public transport) and non-motorised user delay and fear and intimidation (non-motorised user amenity) for users of the road network resulting from increases in traffic flows as a result of construction traffic or works due to, for example, cable trenching	✓	x	x
The impact upon severance for users of the road network resulting from increases in traffic flows as a result of construction traffic or works due to, for example, cable trenching	✓	x	x
The impact upon road safety for users of the road network and other transport receptors resulting from increases in traffic flows as a result of construction traffic or works due to, for example, cable trenching	✓	x	x
The impact upon the safety of users of the road network and other transport receptors resulting from Abnormal Indivisible Loads (AILs)	✓	x	x
Climate Change			
The impact of GHG emissions arising from the manufacturing and installation of the Proposed Development.	✓	x	x
The impact of GHG emissions arising from the consumption of materials and activities required to facilitate the operation and maintenance phase.	x	✓	x
The impact of GHG emissions arising from land use change during the construction, operation and maintenance and decommissioning phase.	✓	✓	✓
The impact of GHG emissions arising from decommissioning works (e.g. plant, fuel and vessel use) and the recovery (or disposal) of materials	x	x	✓
Climate resilience of the Proposed Development	x	✓	x
Socio Economic, Tourism and Recreation			
Increase in employment and GVA	✓	✓	✓
Demographic changes	✓	x	✓
Changes to housing demand	✓	x	✓

Impact per Topic	Project Phase*		
	C	O	D
Changes to other local public and private services	✓	x	✓
Changes to tourism receptors	✓	✓	✓
Changes to recreation receptors	✓	✓	✓
Socio-cultural Impacts	✓	✓	x
Water Quality and Flood Risk			
The impact of increased flood risk arising from additional surface water runoff during construction of the Proposed Development.	✓	x	x
The impact of increased flood risk arising from additional surface water runoff during operation of the substation.	x	✓	x
The impact of increased flood risk arising from damage to existing flood defences during the construction of elements of the Proposed Development.	✓	x	x
The impact of increased flood risk arising from watercourse diversion associated with construction of the substation.	✓	x	x

* (project phase refers to construction (C), operation and maintenance (O) and decommissioning (D)).

20.2 Scoped Out of the Environmental Impact Assessment

Scoped Out Impacts

20.2.1 The topics and associated impacts proposed to be scoped out of the EIA and therefore not included in the Onshore EIA Report are identified in Table 20.2) together with justification for scoping them out.

Table 20.2: Topics and impacts proposed to be scoped out of the EIA

Potential Impacts Scoped Out
Land Use, Agriculture and Public Access
- Impacts on soil resources during operation - Public access: Impacts on PRoW and public access routes during operation and decommissioning - Public access: Impacts on recreational resources during operation and decommissioning
Biodiversity and Terrestrial Ecology
- Operational impacts from the Onshore Export Cable on population-level effect for terrestrial protected species - Operational impacts on habitats of low ecological value - Operational impacts on statutory designated sites >10 km
Terrestrial Ornithology

Potential Impacts Scoped Out

- Operational impacts
- Collision risk
- Potential impacts affecting the Fowlsheugh SPA
- Potential impacts affecting passerines (except breeding passerines listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)) and species of low conservation concern (i.e., Green-listed species that are not included on Schedule 1 of the Wildlife and Countryside Act or Annex I of the Birds Directive)

Landscape and Visual Impact Assessment

- Operational Landscape Impacts – Cable Corridor
- Operational Visual Impacts – Cable Corridor
- Operational Landscape Impacts – Landfall
- Operational Visual Impacts – Landfall

Cultural Heritage

- Construction phase impacts relating to setting
- Accidental construction phase impacts
- Operational impacts upon designated heritage assets outside the study area.
- Operational impacts relating to the setting of non-designated assets of less than national importance
- Decommissioning phase impacts

Geology and Ground Conditions

- Geologically designated sites
- Mineral resources (including safeguarded sites)

Air Quality

- The impact on human and ecological receptors (dust soiling and human health) arising from fugitive dust emissions generated during operation and maintenance of the Proposed Development.
- The impact on human and ecological receptors arising from air emissions generated by vehicle traffic during operation and maintenance of the Proposed Development.
- The impact on human and ecological receptors arising from air emissions generated by plants or stacks during operation and maintenance of the Proposed Development.

Noise and Vibration

- The impact on human receptors and heritage assets arising from vibration generated by additional vehicle movements on the local highway network during construction and decommissioning of the Proposed Development
- The impact on human receptors and heritage assets arising from vibration generated during the operation and maintenance of the Proposed Development.
- The impact of noise and vibration generated during the operation and maintenance of the Onshore Export Cable and associated infrastructure.

Traffic and Transport

- The impact of additional vehicle movements on the road network on driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance and road safety during operation and maintenance of the Proposed Development.

Potential Impacts Scoped Out
The impact of additional vehicle movements on the road network on driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance and road safety during decommissioning of the Proposed Development.
Climate Change
- Climate risk assessment - construction and decommissioning - In-combination climate change effects (ICCI)
Socio-economics, Tourism and Recreation
- Demographic Impacts during the operation and maintenance phase - Changes to housing demand during the operation and maintenance phase - Changes to other local public and private services during the operation and maintenance phase - Socio-cultural Impacts during the decommissioning phase
Water Quality and Flood Risk
- The impact of contaminated runoff on the quality of surface water and ground receptors during construction, operation and maintenance and decommissioning of the Proposed Development - The impact of increased flood risk arising from additional surface water runoff during the operation and maintenance of the Onshore Export Cables and decommissioning of the Proposed Development - The impact of increased flood risk arising from watercourse diversion associated with the operation and maintenance and decommissioning of the onshore substation - The impact of increased flood risk arising from damage to existing flood defences during the operation and maintenance and decommissioning of the Proposed Development. - The impact of damage to existing water and sewer pipelines during the construction, operation and decommissioning of the Proposed Development. - The impact of damage to existing field drainage during the construction, operation and decommissioning of the Proposed Development.
Waste
Whilst construction waste will be addressed in a SWMP, operational waste is proposed to be scoped out as the operation of the Proposed Development would generate limited amounts of waste and any effects arising are unlikely to be significant.

Topics Scoped Out

- 20.2.2 It is proposed to scope Human Health and exposure to Electromagnetic Fields out of the Onshore EIA Report. This reflects that the potential for any significant adverse population health effects will be avoided by mitigation that will be described in other Onshore EIA Report chapters, as reported in Section 18.
- 20.2.3 As discussed in Section 4.8, MADs is proposed to be scoped out as a standalone chapter. When considering all embedded measures of mitigation and design principles the risk of MADs occurring as a result of or in relation to the Proposed Development are considered to be very low. Sufficient coverage of MADs in other topic chapters where relevant will be

included. This is considered to be appropriate and proportionate in the circumstances.

Transboundary Effects

- 20.2.4 In addition, it has been determined that no significant transboundary effects would arise from the Proposed Development this has therefore been scoped out of the Onshore EIA Report.

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