CALEDONIA
Offshore Wind Farm

Code: UKCAL-CWF-CON-EIA-APL-00001-A008

Application Document 2

Design and Access Statement

Caledonia Offshore Wind Farm Ltd

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Acronyms and Abbreviations

AIL	Abnormal Indivisible Load
AMSC	Approval for Matters Specified in Condition
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
DE	Design Envelope
DWPA	Drinking Water Protected Areas
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GIS	Geographic Information System
GWDTE	Groundwater Dependent Terrestrial Ecosystems
HDD	Horizontal Directional Drilling
HND	Holistic Network Design
LDP	Local Development Plan
km	Kilometre
kV	KiloVolt
MLWS	Mean Low Water Springs
NETS	National Electricity Transmission System
NPF4	National Planning Framework 4
OCT	Open Cut Trenching
OFGEM	The Office of Gas and Electricity Markets

OFTO	Offshore Transmission Owner
ONEC	Onshore Export Cable Corridor
OnTI	Onshore Transmission Infrastructure
OWF	Offshore Wind Farm
PPP	Planning Permission in Principle
RAG	Red Amber Green
RLB	Red Line Boundary
SGT	Super Grid Transformers
SSEN-T	Scottish and Southern Electricity Networks - Transmission
SSSI	Site of Special Scientific Interest
SVC	Static VAR Compensator
TJB	Transition Joint Bays
UK	United Kingdom
UXO	Unexploded Ordnance

1 Introduction

1.1 Overview and Purpose

1.1.1.1 This Design and Access Statement (DAS) has been prepared in support of the Caledonia Offshore Wind Farm and associated onshore transmission infrastructure (OnTI). All OnTI associated with the Caledonia OWF landward of Mean Low Water Spring (MLWS) is collectively referred to as the Proposed Development (Onshore). Caledonia Offshore Wind Farm Limited (the Applicant) is submitting an application for Planning Permission in Principle (PPP) to Aberdeenshire Council under the Town and Country Planning (Scotland) Act 1997 (United Kingdom (UK) Parliament, 1997[1]) for the Proposed Development (Onshore).

1.1.1.2 The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 (Scottish Parliament, 2013[2]) stipulates that all applications for planning permission for 'major' or 'national' developments must be accompanied by a DAS. However, this regulation does not apply to applications for PPP. Whilst this is not a statutory requirement, following pre-application discussions with Aberdeenshire Council, the Applicant has agreed to submit this DAS in support of the application.

1.1.1.3 The purpose of the DAS is to provide:

- An overview of the design principles and approach that has informed the Proposed Development (Onshore); and

1.1.1.4 A consideration of access to the Proposed Development (Onshore) and how the design process has been informed by the needs of all users.

1.1.1.5 This DAS should be read in conjunction with the Environmental Impact Assessment Report (EIAR) and the Planning Statement (Application Document 3: Onshore Planning Statement) for the Proposed Development (Onshore) submitted with the PPP.

1.1.1.6 Specifically, the following chapters of the EIAR should be referred to:

- Volume 1, Chapter 4: Proposed Development (Onshore);
- Volume 1, Chapter 6: Site Selection and Alternatives;
- Volume 5, Chapter 2: Land Use;
- Volume 5, Chapter 4: Landscape and Visual;
- Volume 5, Chapter 5: Terrestrial Archaeology and Cultural Heritage;
- Volume 5, Chapter 8: Airborne Noise and Vibration; and
- Volume 5, Chapter 9: Traffic and Transport.

1.2 Background

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

1.2.1.2 Ocean Winds is progressing the proposals for this OWF, which has been named the Caledonia OWF, via a newly incorporated limited company of Caledonia Offshore Wind Farm Limited. The terms of the Option Agreement are dependent upon the Applicant being awarded all key consents and permissions to construct and operate the OWF from the relevant regulatory authorities.

1.3 Proposed Development (Onshore)

1.3.1.1 The Proposed Development (Onshore) will consist of four main components that are collectively referred to as the Onshore Transmission Infrastructure (OnTI):

- **The Landfall Site:** the area from MLWS where the Offshore Export Cable Circuits are connected to the Onshore Export Cable Circuits via Horizontal Directional Drilling (HDD) ducts within Transition Joint Bays (TJB) (buried box-like structures which house the jointing between the Offshore and Onshore Export Cable Circuits). The Landfall Site is located at a rocky bay named Stake Ness, 1 kilometre (km) west of the village of Whitehills and approximately 5km west of Banff;
- **The Onshore Export Cable Corridor (ONEC):** where the Onshore Export Cable Circuits would be located which connects the TJBs at the Landfall Site to the Onshore Substation Site. The ONEC, extends approximately 37km from Stake Ness to an area in the vicinity of the existing New Deer Substation;
- **The Onshore Substation Site**: comprising two co-located Onshore Substations located adjacent to the existing New Deer substation; and
- **The Onshore Grid Connection Cable Corridor**: connecting the Onshore Substation to the Grid Connection Point at the existing New Deer Substation (owned by Scottish and Southern Electricity Networks - Transmission (SSEN-T)) for Phase 1 of the Proposed Development (Onshore), via up to two Onshore Grid Connection Cable Circuits with a voltage of 400 kiloVolt (kV).

1.3.1.2 Figure 1-1 provides an overview schematic of the overall Proposed Development and identifies the Proposed Development (Onshore) consent boundary, also referred to as the OnTI Red Line Boundary (RLB). The entirety of the Proposed Development (Onshore) is located within the jurisdiction of Aberdeenshire Council.

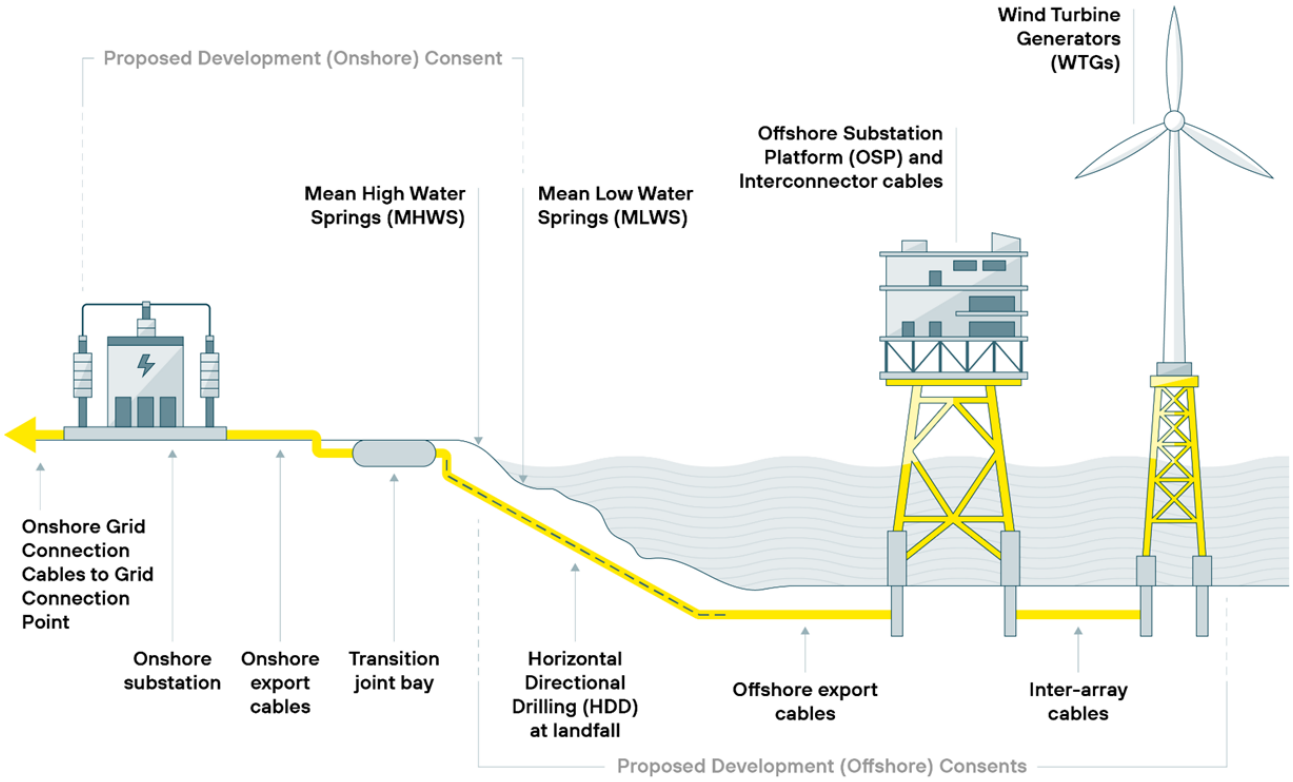


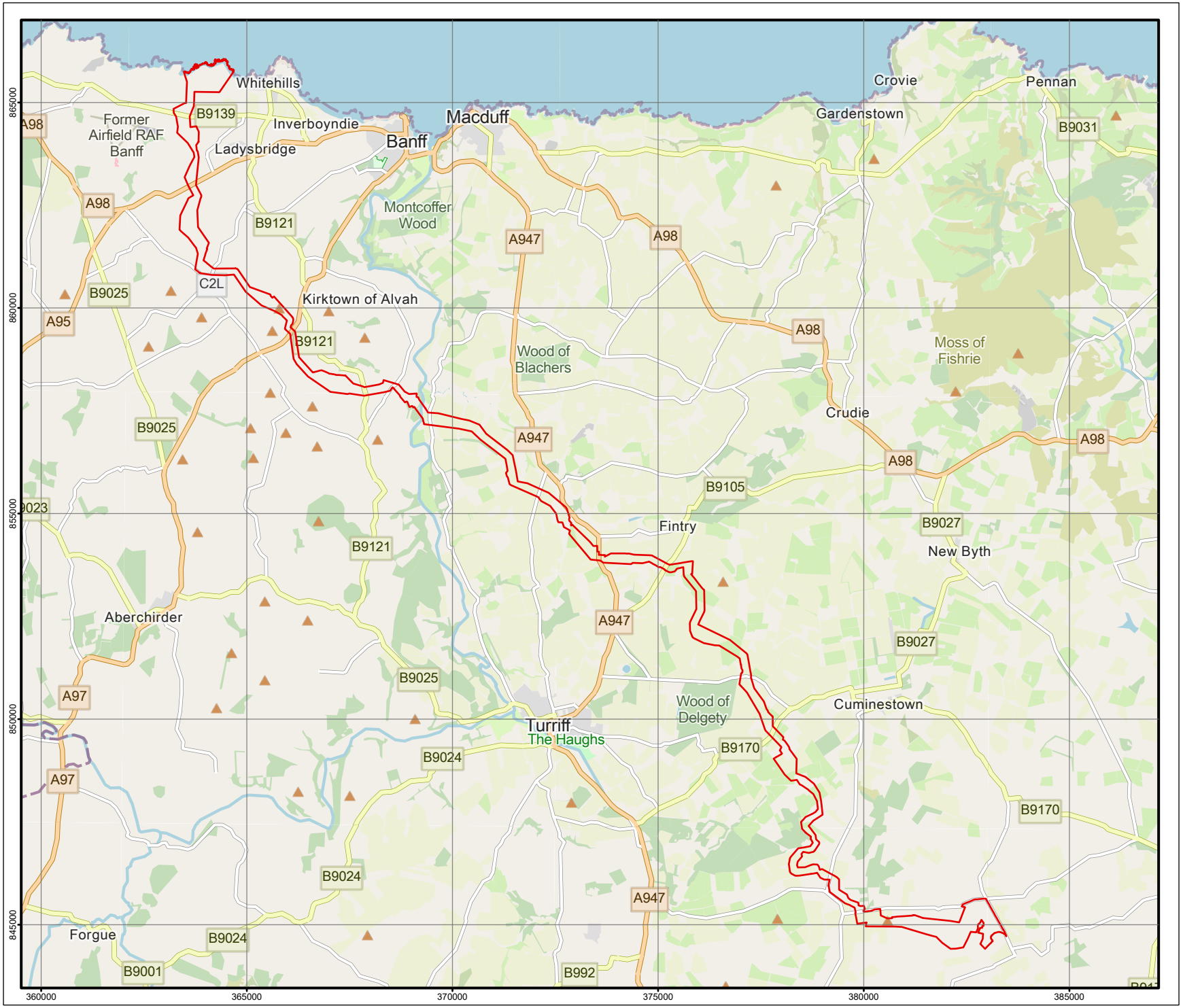
Figure 1-1: Proposed Development Indicative Schematic

1.3.1.3 The OnTI RLB is shown on Figure 1-2. The nearest settlements include Whitehills, Ladysbridge, Fintry and King Edward.

1.3.1.4 The character of the site ranges from coastal to rural but is predominantly characterised by both arable and grazed farmland. The land types cover Gently Undulating Coastal Farmland, Undulating Agricultural Heartland and Farmed and Wood River valleys.

1.3.1.5 The OnTI RLB presented is larger than the area the OnTI will ultimately occupy. The parameters within the EIAR represent the largest possible spatial extents of the Proposed Development (Onshore) as a reasonable worst-case Design Envelope (DE). The exact location and arrangement of the Onshore Export Cable Circuits within the ONEC and the layout of the Onshore Substation Site will be determined at detailed design following further technical studies and subject to an Approval of Matters Specified in Conditions (AMSC) application.

1.3.1.6 The Stake Ness Coast Site of Special Scientific Interest (SSSI) runs along the coastline and within the OnTI RLB. No other areas of Statutory or Non-statutory Designated Sites are present within the OnTI RLB.



0 1 2 3 4 km

REV	DATE	DOC STATUS	ORIGIN	REVIEW	APP
02	10/09/2024	Approved	CW	MK	GS
01	17/05/2024	For Review	CW	JN	GS

CALEDONIA Offshore Wind Farm

ARUP

CONTRACTOR DRAWING NO: UKCAL1_ARP_WNF_ENV_MAP_00603	CONTRACTOR REV: 02
GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)	

DRAWING TITLE

Figure 1-2: Proposed Development (Onshore) Red Line Boundary

STATUS: Approved	SCALE: 1:125,000	
DRAWING NUMBER: N/A	SHEET NO: 01 of 01	REV: N/A

1.4 Report Structure

1.4.1.1 The remainder of this DAS is structured as follows:

- Section 2: outlines the evolution of the Proposed Development (Onshore) design and provides an assessment of the key design principles against the policy context and environmental and technical considerations;
- Section 3: provides an overview of the access considerations influencing the design;
- Section 4: provides an overview of the intended programme for the Proposed Development (Onshore); and
- Section 5: provides an overall conclusion.

2 Design Statement

2.1 Key Design Principles

2.1.1.1 All development components described in Section 1.3 have been influenced by key design considerations including relevant policy frameworks, environmental and engineering constraints and technical considerations in addition to ongoing consultation and engagement with stakeholders.

2.1.1.2 The design has evolved taking into account parameters including underground installation, screening of the substation location and use of HDD at the Landfall Site and major road/watercourse crossings.

2.1.1.3 The OnTI RLB has been designed to avoid all designated sites except for the Cullen to Stake Ness Coast SSSI at the Landfall Site. Impacts to the SSSI would be mitigated by methods such as HDD and best practice working methods.

2.2 Planning Policy Context

2.2.1 Overview

2.2.1.1 A full review of the relevant planning legislation and policy associated with the Proposed Development (Onshore) is provided in the EIAR, Volume 1, Chapter 2: Legislation and Policy.

2.2.1.2 The Planning Statement (Application Document 3: Onshore Planning Statement) submitted with this PPP application provides a detailed assessment of how the Proposed Development (Onshore) complies with the relevant legislation and policies.

2.2.1.3 This section provides an assessment of the Proposed Development (Onshore) against the relevant design and access policies only, seeking to avoid duplication where possible.

2.2.1.4 The following policies are considered to be of most relevance to the design and access of the Proposed Development (Onshore):

- National Planning Framework 4 (NPF4) (Scottish Government, 2023[3]); and
- Aberdeenshire Local Development Plan (2023) (Aberdeenshire Council, 2023[4]).

2.2.2 National Planning Framework 4

2.2.2.1 The fourth National Planning Framework (NPF4) (Scottish Government, 2023[3]) was adopted by the Scottish Government on 13 February 2023.

2.2.2.2 The NPF4 sets out the long-term spatial strategy for Scotland and national planning policies as part of the statutory Development Plan. NPF4 contains six overarching spatial principles:

- Just transition;
- Conserving and recycling assets;
- Local living;
- Compact urban growth;
- Rebalanced development; and
- Rural revitalisation.

2.2.2.3 Relevant policies from the NPF4 with relation to the design of the Proposed Development (Onshore) are set out in Table 2-1.

Table 2-1: NPF4 Policy Appraisal

Policy	Policy Aim	Appraisal
Policy 3: Biodiversity	Promotes nature recovery and nature restoration with the intent to "protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.	The Proposed Development (Onshore), in particular the Onshore Substation Site has been designed to protect biodiversity; landscaping and mitigation planting is also proposed, as detailed in Section 2.6.2.
Policy 4: Natural Places	Ensures the safeguarding of nationally and internationally important natural assets with the intent to "protect, restore and enhance natural assets making best use of nature-based solutions.	The Proposed Development (Onshore) has been designed to avoid all designated sites except for the Cullen to Stake Ness Coast SSSI at the Landfall Site. Impacts to the SSSI will be mitigated by methods such as HDD and best practice working methods.
Policy 5: Soils	Aims to protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development.	The site selection process for each component included an assessment of ground conditions to ensure minimal impact and protection where possible. There are no mapped peat deposits within the OnTI RLB at the Onshore Substation Site. There is a potential impact on peat from the Onshore Export Cable. Where peat or carbon-rich soils cannot be avoided, the Onshore Export Cable Route will be designed such that the effect of the peat hydrology and

Policy	Policy Aim	Appraisal
		carbon losses are minimised, with the implementation of a Peat Management Plan.
Policy 6: Forestry, woodland and trees	Aims to protect and expand forests, woodland and trees. Development proposals that enhance, expand and improve woodland and tree cover will be supported.	The Proposed Development (Onshore), in particular the Onshore Substation Site and ONEC have been designed in relation to the natural screening afforded by landform, woodland and trees and to avoid woodland as detailed in Section 2.6.2 and 2.6.3.
Policy 7: Historic assets and places	Aims to protect and enhance historic environment assets and places, and to enable positive change as a catalyst for the regeneration of places.	The Proposed Development (Onshore) has been designed to avoid any direct impacts to heritage assets. In particular, all scheduled monuments have a 100m buffer to ensure protection.
Policy 10: Coastal development	Aims to protect coastal communities and assets and support resilience to the impacts of climate change.	An extensive site selection process was undertaken to identify the Landfall Site. See Section 2.5.2 and 2.6.1 for further details.
Policy 14: Liveable Places	Aims to encourage, promote and facilitate well designed development that makes successful places by taking a design-led approach and applying the Place Principle.	The Proposed Development (Onshore) has taken a design-led approach to ensure the components are in keeping with the existing land uses and where required mitigation is proposed. See Section 2.6 for further details.
Policy 22: Flood risk and water management	Aims to strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding.	The Proposed Development (Onshore) has considered flood risk during site selection and the EIAR includes an assessment of potential flood risk and any required mitigation measures. See Section 2.6 for further details.

Policy	Policy Aim	Appraisal
Policy 29: Rural Development	Aims to encourage diversified economic activity while continuing to safeguard and enhance the character of rural areas and their natural and cultural assets.	The socioeconomic impact of the Proposed Development (Onshore) has been considered in EIAR Volume 6, Chapter 2: Socioeconomic, Tourism and Recreation. Screening and planting of mixed native woodlands is proposed to mitigate the impact of the Proposed Development (Onshore) on the rural landscape. See section 2.6.2 for further details.

2.2.3 Aberdeenshire Local Development Plan

2.2.3.1 The Aberdeenshire Local Development Plan (Aberdeenshire Council, 2023[4]) was formally adopted on 13th January 2023 and has been written to accord with the National Planning Framework 3 (Scottish Government, 2014[5]) and be consistent with the Aberdeen City and Shire Strategic Development Plan 2020 (Aberdeenshire Council, 2020[6]).

2.2.3.2 The Shire Strategic Development Plan 2020 and NPF3 have now been superseded by NPF4 and as such in the event of any incompatibility between a provision of NPF4 and a provision of the Local Development Plan (LDP), NPF4 will take priority.

2.2.3.3 The LDP directs decision-making on all land-use planning issues and planning applications in Aberdeenshire, sets out broad principles for development in the area and sets out planning policies.

2.2.3.4 Relevant policies from the LDP with relation to the design of the Proposed Development (Onshore) are set out in Table 2-2.

Table 2-2: Aberdeenshire LDP Policy Appraisal

Policy	Policy Aim	Appraisal
Policy R1 Special Rural Areas	Coastal zone development must have clear social, economic, environmental and community benefits to be approved and that coastal habitats should be protected.	An extensive site selection process was undertaken to identify the Landfall Site. See Section 2.5.2 and 2.6.1 for further details.

Policy	Policy Aim	Appraisal
Policy P1 Layout, Siting and Design	Applies the six qualities of successful place to proposals for single buildings and small-scale development. Including: distinctive, safe and pleasant, welcoming, adaptable, efficient and well-connect. It provides detailed design guidance for individual building proposals.	The siting of the Proposed Development (Onshore) has been chosen to align with the six qualities of place. As the detailed design evolves, these principles will continue to be applied to ensure the development is in keeping with the character of the area. See Section 2.6.2 for further details.
Policy E2 Landscape	Aims to ensure that Special Landscape Areas (SLAs) are afforded adequate protection against inappropriate development. It supports the criteria of Policy P1 when applying the six qualities of successful place.	The Proposed Development (Onshore) ensures adequate protection of the landscape character of the area. SLAs and other landscape designations were considered when undertaking the site selection process. Screening and planting of local character including native woodlands is proposed to reinforce and restore landscape character. See section 2.6.2 for further details.
Policy HE1 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites (including other historic buildings)	Introduces protection measures stating that the Council will not allow development that would have a negative effect on the character, integrity or setting of listed buildings, scheduled monuments, or other archaeological sites.	The Proposed Development (Onshore) has been designed to avoid any direct impacts to heritage assets. In particular, all scheduled monuments have a 100 metre (m) buffer to ensure protection.

2.3 Environmental Considerations

2.3.1.1 As well as planning policy considerations, the Applicant's duties under Schedule 9 of the Electricity Act 1989 (UK Parliament, 1989[7]), environmental issues and constraints stemming from specific receptors were considered in the Proposed Development (Onshore) design process. These were identified during the EIA Scoping process and further consultations through desk-based studies, field surveys and consultation.

2.3.1.2 The design of the Proposed Development (Onshore) considered key environmental issues within the EIAR including the following:

- Land Use, including agricultural land and soils and forestry and woodland;
- Terrestrial Ecology including protected habitat, Groundwater Dependent Terrestrial Ecosystems (GWDTEs) and protected species;
- Landscape and Visual including landscape character and visual amenity;
- Terrestrial Archaeology and Cultural Heritage including archaeological resource, designated and non-designated heritage assets;
- Hydrology and Hydrogeology, including GWDTEs, Private Water Supplies (PWSs), Drinking Water Protected Areas (DWPAs), and flood risk;
- Geology, Soils and Contaminated Land including statutory (SSSI) and non-statutory designated sites, pollution/contamination of soils, mineral resource and peat or carbon rich soils;
- Airborne Noise and Vibration including construction activities road traffic associated with construction activities Noise from operation of the Onshore Substation Site;
- Traffic and Transport including construction traffic routes, abnormal loads, temporary and permanent access tracks; and
- Socio-economic, tourism and recreation including core paths, tourism, recreational activities.

2.4 Technical Considerations

2.4.1.1 Throughout the design process, efforts have been made to limit the development footprint as far as possible. Whilst the Proposed Development (Onshore) encompasses a large area, this has been done to retain flexibility as engineering design, site investigations and land engineering are ongoing.

2.4.1.2 Engineering and technical studies including desk-based geotechnical assessment, onshore reconnaissance, geotechnical site investigations, cable routing studies and review of cable installation methodologies have been undertaken.

2.5 Design evolution and alternatives

2.5.1.1 The design of the Proposed Development (Onshore) has developed through various iterations and the preparation of the EIAR. The design development has taken into consideration relevant policy frameworks, environmental and engineering constraints and technical considerations.

2.5.1.2 The EIA process and the relationship with the design process and stakeholder engagement is shown in Figure 2-1.

2.5.1.3 A detailed appraisal of the site selection process and alternatives can be found in Volume 1, Chapter 6: Site Selection and Alternatives. A summary of the site selection process for each component is provided below.

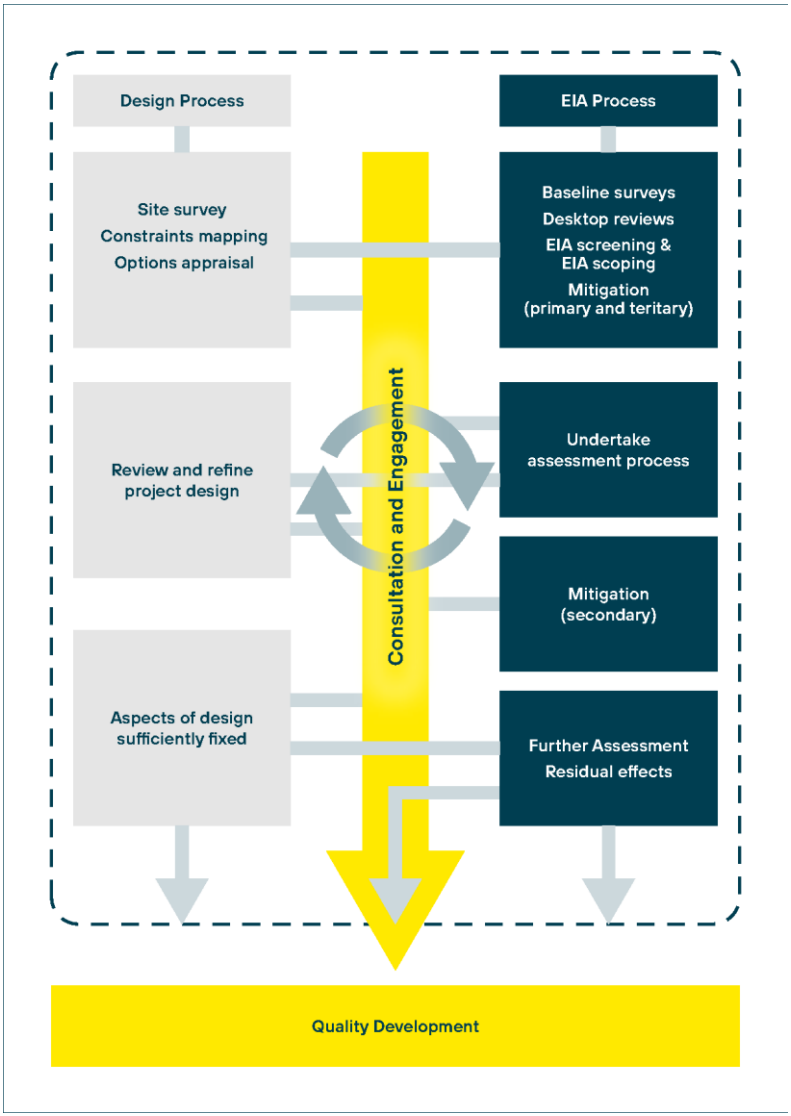


Figure 2-1: Overview of the EIA and Design Process

2.5.2 Landfall Site selection

2.5.2.1 Site selection of the Offshore Export Cable Corridor and Landfall Site was informed by the recommendation in the Holistic Network Design (HND) that the Proposed Development would connect into the New Deer substation. In selecting a Landfall Site location; 20 potential landfall locations were identified along a stretch of the Aberdeenshire coastline. A feasibility and screening assessment of the possible landfall locations was undertaken to confirm their suitability for inclusion as potential landfall locations within the EIA Scoping corridor.

2.5.2.2 The analysis included an assessment of ground conditions and topography, access and environmental and planning considerations.

2.5.2.3 Following this analysis, a landfall search area located between Sandend and Old Haven which encompassed 10 short listed landfall locations was identified for inclusion within the Offshore Scoping Report and Onshore Scoping Report.

2.5.2.4 Further studies involving desk-based assessment and on-site ground truthing were undertaken in addition to an Offshore Export Cable Routeing study in parallel. These studies considered technical difficulties relating to HDD installation, potential technically feasibly export cable routes and survey corridors to the HDD offshore exit locations based on environmental considerations (e.g. benthic habitat types and wintering birds survey) and engineering constraints (e.g. bathymetry/topography and ground conditions). Following the conclusion of these studies, three preferred landfall locations were shortlisted to be taken forward for further analysis: Boyne Bay, Stake Ness and Boyndie Bay.

2.5.2.5 The three remaining landfall locations were subject to additional technical and commercial appraisal. This assessment included consideration of the following criteria:

- Site Establishment;
- Phase 1: HDD Construction;
- Phase 2: Direct Pull In;
- Phase 3: Duct Lowering and Cable Protection; and
- Offshore Transmission Owner (OFTO) Considerations

2.5.2.6 The Boyndie Bay option was constrained by the SHEFA-2 subsea cable and an anchorage and marine disposal ground, as well as proximity to residential properties onshore and the potential of intersecting a site allocated in the Aberdeenshire LDP, resulting in Boyndie Bay being discounted as a landfall location. Boyne Bay was also discounted as a landfall location as the HDD in this location was considerably longer at 744mresulting in s risk of encountering variable bedrock and challenges to HDD. Boyne Bay as a l landfall location also presented other challenges, including being in close proximity (within 500m) to residential properties ,the potential for Unexploded Ordnance (UXO) due to proximity to former Royal Air Force base in Banff, the potential for geological features due to proximity to Boyne Bay Quarry and potential impact on heritage assets at Boyne Castle

2.5.2.7 Stake Ness was the shortest HDD option at 480m, equating to shorter construction programme. It also had the lowest expected drilling fluid losses during HDD within bedrock. In addition, Stake Ness was also the furthest site from residential receptors (600m).

2.5.2.8 After consideration, the preferred Landfall Site for the Proposed Development (Onshore) was therefore identified at Stake Ness, as shown on Figure 1-2.

2.5.3 ONEC selection

2.5.3.1 The ONEC was identified using a four-stage process which has progressively refined and narrowed the corridor:

- Stage 1 – Identification of an Onshore Scoping Area between potential landfall locations and the Onshore Substation Scoping Area in the vicinity of the New Deer Substation;
- Stage 2 - Identification of a preferred 2km ONEC within the Onshore Scoping Area;
- Stage 3 - Identification of a preferred 500m ONEC within the 2km corridor; and
- Stage 4 - Identification of the OnTI RLB.

2.5.3.2 The first stage in defining the ONEC was the identification of the Onshore Scoping Area. The Onshore Scoping Area took the form of a corridor covering 10 of the initial 20 potential landfall locations along the Aberdeenshire coast and the Onshore Substation Scoping Area in the proximity of New Deer.

2.5.3.3 The Onshore Scoping Area avoided overlaps with statutory designated sites such as SPA, SAC, Ramsar sites and National and Local Nature Reserves. The corridor was also refined to avoid direct impacts on Scheduled Monuments and Gardens and Designed Landscapes.

2.5.3.4 Stage 2 involved the refinement of the Onshore Scoping Area following the identification of a short list of possible landfall locations and Onshore Substation Sites. A desk-based study was undertaken using a range of publicly available information, imported into a Geographic Information System (GIS) model and a number of buffers implemented for each parameter.

2.5.3.5 Following completion of the GIS modelling the data was reviewed and a total of five potential 2km wide corridors were identified. These options were subject to a further technical and environmental review to identify a preferred option. Following a (Red Amber Green) RAG scoring appraisal, a preferred option was identified that was relatively flat and avoided gas pipelines and sites, resulting in a short, more direct route from landfall to the substation.

2.5.3.6 Following the identification of a preferred 2km Onshore Export Corridor further refinement was undertaken at Stage 3 to identify a 500m wide corridor option. At this stage no preferred Landfall Site or Onshore Substation Site had been identified and therefore options were required to provide flexibility on which shortlisted landfall locations/Onshore Substation Sites they encompassed.

2.5.3.7 Using a range of environmental and technical criteria, eight corridor options were developed and were the subject to site visits (which focussed on the key sections of the corridors where more complex engineering requirements were identified) and a RAG scoring appraisal. Following the RAG appraisal and site visits (to ground truth desk based information), three corridors were taken

forward for further evaluation. Although the corridors taken forward for further evaluation all terminated at Burnside, given the geographical proximity of the three shortlisted substation sites the corridors were considered suitable for all of the onshore substation shortlisted sites. Modifications were also made to the shortlisted corridor options in vicinity of constrained areas and at key crossings, to give greater optionality for future development of corridors during the next stage.

2.5.3.8 Upon confirmation of the preferred Landfall Site and Onshore Substation Site at Stage 4, a further refinement of the 500m preferred corridor was undertaken to avoid buildings, minimise areas of woodland within corridor, minimise trenchless and open-cut crossings within corridor, align with field boundaries where possible and minimise peatland within the corridor. The final selection also included consideration of construction requirements relating to site access and spacing, results of the Phase 1 habitat survey and landowner consultation.

2.5.3.9 The resulting corridor was the OnTI RLB for the PPP application, as shown on Figure 1-2.

2.5.4 Onshore Substation Site selection

2.5.4.1 The preferred location for any substation is adjacent, or as near as possible to the Grid Connection Point where it will connect to the National Electricity Transmission System (NETS).

2.5.4.2 The Applicant commenced the substation site selection process in the summer of 2022, at this point the location of the Grid Connection Point was understood to be the existing New Deer substation, as recommended in the HND. The Applicant was aware that a new substation was also to be constructed by SSEN-T, called New Deer 2 which later became known as Greens substation, to facilitate the connection of new renewable generation onto the NETS.

2.5.4.3 Through discussions with SSEN-T the project understood that these two assets would be electrically connected and that therefore it was likely that Greens would be situated in a proximal location to New Deer. In order to ensure that the substation site selected would be suitable for either a connection to New Deer or Greens, or a split between both, a 6km diameter search area around the existing New Deer substation (the Onshore Substation Scoping Area) was defined to inform the Onshore Substation Site search. Within the Onshore Substation Scoping Area a robust appraisal in line with the Horlock Rules (National Grid, 2009) was applied to identify potential substation sites. Through a previous substation site selection process undertaken for the Moray East project, the Applicant had also identified a potential substation site (referred to as Burnside).

2.5.4.4 Based on these objectives nine potential sites were identified. Sites were then visited to confirm desk-based data review and assumptions. As a result, three sites were discounted from further consideration.

2.5.4.5 Each short-listed site was subject to a RAG environmental constraint appraisal. This RAG appraisal built on the Applicants experience and data gathered as part of the Moray East OWF project. A short list of three sites was then identified for further detailed consideration.

2.5.4.6 These three sites were then subject to further technical assessment including ecological surveys, peatland surveys, engineering feasibility assessment and engineering concept design. Site areas were also evaluated to identify if land for each site could be expanded to provide further space for construction processes and mitigation requirements.

2.5.4.7 During the review of the final three sites, recently updated planning policy such as NPF4 was reviewed ensure the design accorded with policy updates such as the requirement to protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development and also deliver positive biodiversity effects from development and strengthen nature networks.

2.5.4.8 Consultation responses received during the Onshore Pre-Application events were also considered with the majority of respondents identifying a preference for a substation site in close proximity to the existing Moray East substation.

2.5.4.9 The preferred location for the Onshore Substation Site was identified at Burnside. The Burnside site is close to the existing public road network and has the advantage of close proximity to the existing New Deer and Moray East substations, allowing for the clustering of electrical infrastructure. Clustering this form of development is generally considered to be beneficial as this approach avoids widespread landscape character and visual effects within a rural area. The site also has the potential to use land to the north of the Onshore Substation Site to provide mitigation planting and bunding. The site is also considered to offer a high level of technical viability with regard to routing of the Onshore Export Cables to the Grid Connection Point.

2.6 Proposed Development (Onshore) Design

2.6.1.1 To make efficient use of the available grid capacity, the Applicant is seeking to retain the flexibility to deliver the OWF generation capacity across two phases. Aligned with this, the Proposed Development (Onshore) is seeking to consent the OnTI across two phases of construction works.

- Phase 1: Landfall Site, ONEC, 1 x Onshore Substation and Onshore Grid Connection Cable Corridor; and
- Phase 2: Landfall Site, ONEC, 1 x Onshore Substation and Onshore Grid Connection Cable Corridor (the Onshore Grid Connection Cable Corridor will be subject to separate planning application).

2.6.1.2 The above phased approach has influenced the design of the Proposed Development (Onshore) described below.

2.6.1.3 Further details on the phasing are provided in Section 4.1

2.6.2 Landfall Site design

2.6.2.1 At the Landfall Site, up to four Offshore Export Cable Circuits will come to shore and will be connected to the Onshore Export Cable Circuits via four TJBs buried beneath the ground.

2.6.2.2 The landfall installation methodology will be HDD, requiring an estimated construction compound of approximately 20,000 metre squared (m^2). Installation will involve drilling and installing four ducts (one for each Offshore Export Cable Circuit) from the drilling pit within the construction compound out to the seabed beyond MLWS.

2.6.2.3 Each TJB will be set in the ground, covered over, and consist of an underground concrete box-like structure which houses the cable joints, connecting the Offshore Export Cable Circuits with the Onshore Export Cable Circuits. The final selection of the TJB dimensions depends on ground conditions and TJB component sizes. At each TJB there will be a link box and communications box pit with a manhole cover to allow for maintenance access during the Proposed Development (Onshore)'s operational lifespan.

2.6.2.4 Table 2-3 provides a summary of the Proposed Development (Onshore) Landfall Site DE.

Table 2-3: Landfall Site Design Envelope

Parameter	Description/Dimensions
Landfall Location	Stake Ness
HDD Construction Compound and Laydown Area	Maximum temporary land take at Landfall Site: 100m x 200m, 20,000m^2
Offshore Export Cable Circuits and HDD Ducts	**Offshore Export Cable Circuits** Maximum of four cables installed (two for Caledonia North and two for Caledonia South) with and outer diameter (OD) of up to 330mm. Maximum length of cable: 180km for Caledonia North and 150km for Caledonia South. (Refer to Volume 1, Chapter 3: Proposed Development Description (Offshore))

Parameter	Description/Dimensions
	HDD Ducts Maximum of four ducts installed with an OD of up to 330mm. Length of each HDD duct: 464m Maximum depth of each HDD duct: 17.2m **Onshore Grid Connection Circuits** An Onshore Grid Connection Cable Corridor to connect the Onshore Substations to the Grid Connection Point at the existing New Deer Substation (for Phase 1) via up to two onshore Grid Connection Cable Circuits with a voltage of up to 400kV
Maximum number of TJBs	Up to four TJBs (one TJB per export cable).
TJB Dimensions	Dimensions for each TJB: 6.5 m (L) x 2.5 m x 2.3 m (D). Permanent land take of approximately 65m^2.

2.6.2.5 Specific design considerations which have informed the Landfall Site design to date are summarised below:

- Suitability of the ground conditions for HDD;
- Suitability of access to the area by construction equipment;
- Spacing of the area allows for the placement of DE requirements; and
- Area has limited sensitive receptors in regards residential properties.

2.6.3 Onshore Export Cable Circuits design

2.6.3.1 Up to four Onshore Export Cable Circuits will exit the TJBs and be routed south-east inland towards the Onshore Substation Site located adjacent to the existing New Deer Substation. The Onshore Export Cable Circuits will be located within the ONEC. The exact location and arrangement of the Onshore Export Cable Circuits within the ONEC will be determined at detailed design following further technical studies.

2.6.3.2 Works to install all four Onshore Export Cable Circuits will be contained within an Onshore Export Cable Route with activities progressing across multiple work locations. Included within the working corridor are areas for cable trenching, haul roads and laydown areas for construction plant.

2.6.3.3 It is estimated that primary construction compounds will be required approximately every 10km along the ONEC, with smaller satellite compounds required approximately every 2.5km. These numbers and sequencing represent a worst case which has been identified as part of the initial design exercise. The final number will be determined during detailed design and specified in subsequent AMSC applications.

2.6.3.4 The Onshore Export Cable Circuits will be installed using predominantly Open Cut Trenching (OCT) techniques to bury the cable circuits in trenches. Varying ground conditions will require differing installation methods to excavate the trenches.

2.6.3.5 For linear features along the cable route such as watercourses, roads and existing cables, crossing methods will range from OCT to trenchless crossing techniques such as HDD.

2.6.3.6 Table 2-4 provides a summary of the ONEC DE.

Table 2-4: ONEC Design Envelope

Parameter	Description/Dimensions
Voltage	220 – 275kV
Construction compounds	Primary construction compounds located approximately every 10 km, with satellite compounds every 2.5 km. Primary construction compounds: 75 m x 50 m, 3750m^2. Satellite compounds: 30 m x 15 m, 450m^2.
Cable Specification	Up to four Onshore Export Cable Circuits in four cable trenches (i.e., one cable circuit per trench).
Cable Route Length	Approximately 37km
Onshore Export Cable Route Working Corridor Width	100m

Parameter	Description/Dimensions
Cable diameter	**Onshore Export Cable Circuits (landward of Landfall Site TJB)** Maximum outer diameter of 3 cores together (one cable circuit): 298mm. **Landfall Site (seaward of Landfall Site TJB)** Maximum outer diameter of 330mm.
Target Burial depth	1m to top of cable.
Cable Joint Bays	A total of approximately 50. Indicative dimensions of 6.5 m (L) x 2.5m (W) x 2.3m (D) Required every 800m along the Onshore Export Cable Circuit. One or two exposed maintenance access covers per Cable Joint Bay (no permanent above-ground structures). Fencing may be required in some locations (subject to individual land agreements).

2.6.3.7 Specific design considerations for the ONEC to inform the design to date are summarised below:

- The ONEC has been designed to avoid all statutory designated sites;
- The Onshore Export Cable circuits would be installed underground, mitigating potential operational visual impacts;
- All areas of ancient woodland will be avoided. Impacts to semi-natural woodland adjacent to Boyndie Visitor Centre will be minimised or avoided where practicable. There will also be a reduction to the working corridor (to 50m) to reduce impacts upon a woodland strip near the Hill of Scattery. Any resultant loss of woodland will be compensated to ensure no loss of woodland at detailed design stage and secured through the relevant AMSC application;
- The OnTI avoids watercourse crossings where possible. Where this is not possible, mitigation measures will be implemented; and
- Following construction, agricultural land not required through the operational phase will be reinstated to ensure it can return to existing agricultural use. Once land is no longer required for installation of the Onshore Export Cable Circuits the land will be reinstated to its original use for the remainder of the construction stage (where applicable) and for the operation and maintenance stage.

2.6.4 Onshore Substation Site design

2.6.4.1 The Onshore Substation Site design includes electrical equipment, landscaping and site access. Further design refinement will be undertaken post-consent including further engineering studies and micro-siting. The final design will be subject to consultation with Aberdeenshire Council and relevant stakeholders as part of AMSC applications.

2.6.4.2 The Onshore Substation Site will house two Onshore Substations and electrical equipment required to connect the Proposed Development (Onshore) to the Grid Connection Point, with each Onshore Substation having dedicated associated Onshore Grid Connection Cable Circuits. Only the grid connection cable circuits associated with Phase 1 re subject to this application.

2.6.4.3 The Onshore Substation Site has a proposed permanent land uptake of 120,000m^2. During construction, a temporary compound of an additional 30,000m^2 in area will be required. The Onshore Substations would be above ground and have a maximum height of 15m.

2.6.4.4 Due to the surrounding landscape character of flat agricultural land; remediation works and landscape planting are proposed for visual mitigation and ecological enhancement. Implementation of mitigation planting around the Onshore Substations including native hedgerows, and native deciduous and mixed native woodland planting for screening. Some planting to be implemented in advance of the start of construction activity and some at the end of construction of Phases 1 and 2.

2.6.4.5 An indicative layout for the Onshore Substations is proposed and detailed with this PPP application as shown on Figure 2-2, with further detailed design to be undertaken at a later stage.

2.6.4.6 The design considered planting to reinforce screening and restore landscape character. Further landscape 'bunding' will be considered at the AMSC application stage, when the earthwork quantities are known.

2.6.4.7 The site selection process considered a range of environmental and technical constraints including separation from settlement and rural properties; avoiding landscape elements, such as woodlands, trees and hedgerows; and considering issues such as surface water flooding. The sensitivity of the surrounding landscape and of residents, road-users, workers and recreational users of the landscape was also a key consideration.

2.6.4.8 The capacity of the landscape to accommodate the Onshore Substation Site was assessed in relation to the natural screening afforded by landform, woodlands and trees and the degree to which other surrounding infrastructure and buildings influence visual screening.

2.6.4.9 The close proximity of the existing New Deer and Moray East onshore substations to the Onshore Substation site was also considered in site selection and is considered to be embedded mitigation as it allows for the clustering of electrical infrastructure.

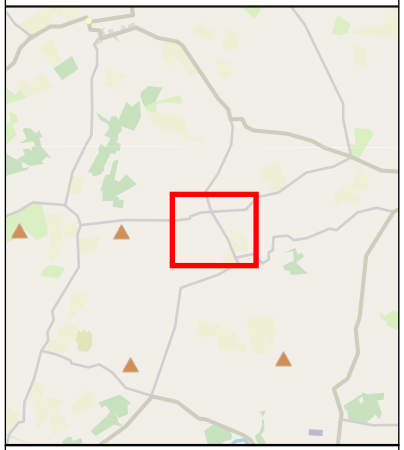
2.6.4.10 Table 2-5 provides a summary of the Onshore Substation Site DE.

Table 2-5: Onshore Substation Site Design Envelope

Design Parameter	Design Envelope
Permanent land take (m^2)	120,000m^2
Substation Dimensions	2 x Onshore Substations co located within same Onshore Substation Site. Maximum height of 15m. Length: 400m; Width: 250m, total area of 100,000m^2.
Construction compounds	Maximum construction compound area of 250 x 120, 30,000m^2.
Foundations	Foundations for structures and equipment will be raft/slab or pad concrete foundations, founded on the in situ cut subgrade or on the recompacted fill. Approximate depth 750mm (Equipment slabs will be sized according to equipment sizes).
Equipment	The Substations could consist of: ▪ 4 x up to 275 kV XLPE Cu/Al conductor underground export cables without armour. ▪ 8 x up to 275kV insulating fluid filled shunt reactors with cooling radiators. Maximum height of acoustic enclosures: 8m. ▪ Up to 275kV switchgear Circuit Breakers and busbars. Maximum height of 15m. ▪ 4 x up to 275kV harmonic filters (one per export cable). ▪ 4 x 400/up to 275/33/13.8 kV insulating fluid filled power transformers (Super Grid Transformers, SGTs) with cooling radiators. ▪ 4 x 33/13.8kV transformer tertiary connected Static VAR Compensator (SVC) or STATOM equipment. ▪ 400kV Double Bus GIS switchgear Circuit Breakers and busbars. ▪ Up to 4 x 400kV harmonic filters. ▪
Buildings	The following buildings will be required: ▪ 4 x switchgear buildings. ▪ A control building.

Design Parameter	Design Envelope
	▪ Steel framed and acoustically/weatherproof clad enclosures shunt reactors and SGTs. ▪ A building to house control equipment for the SVC/STATCOM together with internal Thyristor/IGBT equipment.
Lighting	Inward facing lighting will be installed on the site perimeter and will only be used during maintenance visits. Security lighting may also be required.
Excavated Materials	A balanced cut and fill approach has been assumed. Maximum level of excavated material:75,000 metre cubed (m^3).
Security fencing	Security fencing will be provided around the perimeter of the Onshore Substations with a maximum height of 3m.

- Onshore Transmission Infrastructure Red Line Boundary
- Indicative Onshore Substations
- Sustainable Drainage System Area
- Indicative Permanent Onshore Substations Access
- Moray East Onshore Cable Route



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REV	DATE	DOC STATUS	ORIGIN	REVIEW	APP
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CALEDONIA Offshore Wind Farm

ARUP

CONTRACTOR DRAWING NO UKCAL1_ARP_WNF_ENV_MAP_00252	CONTRACTOR REV 02
GEODETIC PARAMETERS OSGB36 / British National Grid (EPSG:27700)	
DRAWING TITLE Figure 2-2: Substation Site	
STATUS Approved	SCALE 1:10,000
DRAWING NUMBER N/A	SHEET NO 01 of 01 / REV N/A

3 Access Statement

3.1 Introduction

3.1.1.1 As part of the EIA, for the Proposed Development (Onshore) a traffic and transport assessment has been undertaken, refer to Volume 5, Chapter 9: Traffic and Transport for further information.

3.1.1.2 The following sections detail the proposed indicative permanent and temporary access roads and routes identified at the PPP application stage. Detailed access plans will be provided post-consent and outlined within an Access Management Plan.

3.1.1.3 The Proposed Development (Onshore) will extend over approximately 37km in length, requiring a number of access roads throughout both the construction and operation and maintenance stages.

3.1.2 Construction Access

3.1.2.1 Currently a number of indicative potential access points have been identified along the ONEC to provide access from the road network to the ONEC during construction. The access points selected during construction will be confirmed at the detailed design stage following further technical assessment and be included in documentation to support the AMSC applications. It is anticipated that not all of the access points identified below will be required to facilitate construction. The indicative access point are located at the following:

- Indicative access point off the B9139 (AP02A);
- Indicative access point off the A98 (AP03A);
- Indicative access point off a road from the B9121, North East of a farm dwelling (AP04A);
- Indicative access points off the A97 (AP05A and AP05B);
- Indicative access via the B9121, south of Greenlaw and two access points off connecting roads to the west of the dwellings;
- Indicative access point off a road north of Breedless Farm;
- Indicative access points off a road off of the A947 (AP06B and AP06A);
- Indicative access point off a road south of the A947 (AP07A and AP07B);
- Indicative access points off the A947 (AP08A and AP08B);
- Indicative access point off the B9105 (AP09B);
- indicative access points off a road from the B9170 (AP10A and (AP10B);
- Indicative access points off a road East from the A947, and North of the development of South Redbriggs (AP11A and AP11B);

- Indicative access points off a road East from the A947, and South East of the development of South Redbriggs (AP12A and A12B); and
- Indicative access point off a road south of the B1970, and North of New Deer Substation.

3.1.2.2 There are a number of roads within or adjacent to the Proposed Development (Onshore), including:

- A98 near Portsoy;
- West of A98/A95 Junction;
- East of A98/A95 Junction;
- A95 East of Cornhill;
- A98 South of Boyndie;
- A98 South-east of Inverboyndie;
- A97 South-west of Banff;
- A947 East of Dounepark;
- A97 North of Aberchirder;
- South of B9025/B9121 Junction;
- North of B9025/B9121 Junction;
- A947 South of Plaidy;
- A947 North-east of Turriff; and
- B9170 North-west of Cuminestown.

3.1.2.3 For the purposes of the traffic and transport assessment, four indicative Potential Access Points (PAPs) into the ONEC construction boundary to access a potential four main construction compounds have been identified. The four main construction compounds will each provide a 'hub' function within the length of the ONEC, providing space for material and plant storage as well as access to the satellite compounds. The final operational details of these main compounds will be further developed as part of the detailed construction programme, to be developed at the detailed design stage.

3.1.2.4 There is a requirement for several temporary access roads to facilitate delivery of key plant and equipment to install the OnTI. The location of these access roads will be determined at detailed design. All Proposed Development (Onshore) access roads will use local pre-existing infrastructure such as road networks, farmer tracks and utility access as first priority, to minimise the construction of new roads. Some of these assets will need to be upgraded to accommodate the OnTI construction activities.

3.1.2.5 Temporary access roads and haul roads will be designed to have an indicative width of 5m. This indicative width comprises a standard width of a single track road to permit one way HGV movements as well as passing bays to allow vehicles meeting along the haul road to pass safely.

3.1.2.6 Access roads will be prepared by removing vegetation and stripping the soils before capping with crushed rocks. Public road improvements may also be required where necessary to allow for abnormal indivisible load (AIL) vehicles such as substation equipment deliveries, and cable drum deliveries.

3.1.2.7 In addition to temporary access roads, two haul roads, to accommodate works across each potential phase within the ONEC will be required to facilitate cable laying.

3.1.2.8 An Outline Construction Traffic Management Plan (CTMP) has also been produced and is provided in Volume 7E, Appendix 9-2: Outline Construction Traffic Management Plan to manage the potential impact of construction traffic. The Outline CTMP set out a basic framework and series of vehicle management actions or principles that will help facilitate the safe operation of construction vehicles to, from, and within the limits of the OnTI RLB.

3.1.2.9 A detailed CTMP will be prepared as part of the AMSC planning applications. The CTMP will include further details of specific construction activities, detailed vehicle route assessments, site compound operations and swept path assessments.

3.1.2.10 A Construction Environmental Management Plan (CEMP) will also be developed in parallel to the CTMP, setting out a series of site-specific measures which will be implemented to reduce the effect of noise, dust and excessive vehicle speeds.

3.1.2.11 Abnormal loads such as the substation transmission infrastructure will be transported using specialist equipment. Abnormal loads are expected to be transported via a surveyed route originating from Peterhead via the Maryhill crossroads. The Proposed Development (Onshore) will implement measures to mitigate the impacts of abnormal load vehicles and proposed measures will be discussed with Aberdeenshire Counciland Police Scotland prior to construction. Where / if the movement of AILs requires the use of the trunk road or Strategic Road Network (SRN), Transport Scotland will also be consulted. These proposed measures are included in the outline CTMP which is submitted alongside the PPP application.

3.1.3 Operations and Maintenance Access

3.1.3.1 The Applicant is required to divest the OnTI under the Electricity (Competitive Tender for Offshore Transmission Licences) Regulations 2015 (UK Parliament, 2015[8]) which is a competitive tender process managed by The Office of Gas and Electricity Markets (OFGEM). As a result, at operation stage the OnTI will be transferred to an OFTO who will become responsible for its enduring operation. As a result of the potential need for the project to be delivered in two phases and the need to divest the OnTI, two separate OFTOs may be responsible for Operation and Maintenance of each Phase of the OnTi.

3.1.3.2 There will be low number of likely operational traffic movements for the Proposed Development (Onshore). It is anticipated that the Onshore Substations will be unmanned and operate 24 hours a day, 7 days a week with weekly operational vehicles movements under normal operation and more frequent movements during planned maintenance or repair works.

3.1.3.3 Permanent access to the Onshore Substation Site will likely be from the south, sharing an access from the main road with the existing New Deer substation. The exact location of this road will be determined through consultation with landowners and Aberdeenshire council at detailed design and will be subject to subsequent consents under AMSC applications.

3.1.3.4 In addition, the reinstatement of the permanent access for a residential property immediately to the west of the Onshore Substation Site will be required. The location of this access will be subject to discussions with the landowner and agreement with Aberdeenshire Council. The access route will maintain the existing crossing of the Burn of Asleid.

3.1.3.5 The operational areas and substation site will only be accessible to authorised personnel while the remainder of the site will be publicly accessible with no restrictions. It is anticipated that the Onshore Export Cable Circuits will be in continuous operation. TJBs at the landfall and Cable Joint Bays will be backfilled, and land reinstated to existing ground level with the only visible permanent works being the ground level access to link box and communications box pit. It is not anticipated that any permanent access roads for routine maintenance will be required following construction reinstatement. Similarly, no permanent access is anticipated along the ONEC following reinstatement. Access regimes are likely to be in the form of landowner agreements to drive over land and use existing tracks should maintenance be required.

3.1.3.6 There will be routine maintenance activities at the Onshore Export Cable Circuits and Onshore Grid Connection Export Cable Circuits including periodic visual inspection of the link boxes, TJBs and Cable Joint Bays (typically bi-annually) including checking for faults, water penetration, corrosion of joints and cables and structural conditions. No major refurbishment works at the Landfall Site and Onshore Export Cable Circuits are currently envisaged during the design life. If a cable failure occurs it may be necessary to replace the section of faulty cable.

3.1.3.7 For unplanned maintenance activities, the first point of access will be via permanent access roads and if temporary access is necessary then Aberdeenshire Council will be consulted at the time.

3.1.3.8 At this stage in the planning process, the lifespan of the Proposed Development (Onshore) is expected to be up to 35 years. Furthermore, it may extend depending on market conditions and the condition of infrastructure associated with the Proposed Development.

3.2 Public Access

3.2.1.1 Within the OnTI RLB, consideration has been given to pedestrians and cyclists resulting from potential interactions between construction traffic, construction works and users of core paths.

3.2.1.2 There is one identified core path within the Proposed Development (Onshore) area at the Landfall Site that follows the coastline from east to west. A further local path crosses the ONEC, providing access to/from the Boyndie Visitor Centre to the Boyndie onshore wind farm. These routes will remain accessible to the public (during construction and operation), although there may be the need for diversions of the route which will be confirmed at detailed design.

3.2.1.3 An Access Management Plan will be developed post consent which will consider any required mitigation measures.

3.3 Access for all

3.3.1.1 Under the Disability and Discrimination Act 1995 (UK Parliament, 1995[9]) there are legal obligations that must be taken into account when making reasonable adjustments to physical barriers and services. The final design of the Proposed Development (Onshore) will be designed (as appropriate and in compliance with the legal requirements) to be inclusive for those with accessibility restrictions at the detailed design stage.

4 Programme

4.1 Construction

4.1.1.1 As indicated in Volume 1, Chapter 5: Proposed Development Phasing, the Proposed Development (Onshore) is being brought forward across two phases of works to accommodate different grid connection dates as a result reinforcement of the NETS. These phases will be delivered under one of three possible construction scenarios (Sequential, Enabling and Concurrent).

4.1.1.2 Volume 1, Chapter 5: Proposed Development Phasing provides a more detailed justification for delivering the Proposed Development in a phased manner and a description of the possible OnTI construction scenarios.

4.1.1.3 Associated indicative timescales for the scenarios are shown in Table 4-1.

Table 4-1: Proposed Development (Onshore) Indicative Phasing

Scenario	Overview	Indicative Timescale	Description
Sequential	Phase 1 Gap Phase 2	**Phase 1:** 3.5 years **Gap:** Up to 5 years **Phase 2**: 3.5 years	Only the OnTI required for Phase 1 of capacity will be delivered in one phase (e.g., 2 x Onshore Export Cable Circuits, 1 x Onshore Substation, 1 x Grid Connection Cable Circuits) with the same again delivered in the second phase.
Concurrent	Phase 1 and 2 in Parallel post 2030	**Both phases**: 5 years	The concurrent scenario represents a single construction phase for the full project capacity.
Enabling	Phase 1 + Enabling Works for Phase 2 Gap Phase 2	**Phase 1**: 3.5 years **Gap**: Up to 5 years **Phase 2**: 2.5 years	Enabling activities for the second phase undertaken during Phase 1 may include HDD at landfall, trenching of cable corridor for the full four circuits, laying of conduits and enabling works for substation two (including the creation of the substation platform for the Phase 2 Substation). Phase 2 activities will include the cable pull at landfall HDD, installation of haul road and cable pull, joint and test along the onshore cable route, and construction and electrical commissioning of the Phase 2 Substation.

4.1.1.4 An Outline CEMP has been provided as part of the PPP application. The Outline CEMP provides details on the proposed working hours.

4.1.1.5 Core working hours for construction of the OnTI will be typical working hours of 7am to 7pm Monday to Friday and 7am to 12pm Saturday. Certain works such as HDD may have to be undertaken outside of normal working hours with the potential for 24 hours working required. Any instances of works being undertaken outside of normal working hours will be approved with Aberdeenshire Council's Environmental Health Officer (EHO).

4.1.1.6 Details of the construction programme will be provided to Aberdeenshire Council via a CEMP prior to commencement of construction.

4.2 Operation and maintenance

4.2.1.1 As identified within Section 3.2.3, the Proposed Development (Onshore) has an assumed operational lifespan of up to 35 years. It is anticipated there will be regular maintenance checks of OnTI during this period. There may be the need for unplanned minor and major maintenance works. In such circumstances the relevant stakeholders will be consulted beforehand as appropriate.

4.3 Decommissioning

4.3.1.1 The decommissioning phases will commence when the operational lifetime of the Proposed Development (Onshore) ends.

4.3.1.2 At the time of decommissioning, it is likely that all underground equipment and the Onshore Substations foundations will remain in-situ. Above ground equipment at the Onshore Substation Site will be cleared and the site reinstated. It is considered that the environmental effects of this approach to decommissioning will be less than those arising from the breakup and removal of all infrastructure. A decommissioning plan will be submitted and agreed with the relevant authorities close to the OnTI's end of life. Any applicable new legislation or guidelines published prior to decommissioning will be considered in relation to any design of mitigation prior to decommissioning taking place. The operational lifespan of each phase may differ depending on when they are constructed, therefore the decommissioning of the OnTI could happen independently for each phase. This information will be included in the decommissioning plan when submitted to the relevant authorities.

4.4 Life Extension and Repowering

4.4.1.1 The DE includes an anticipated operational lifespan of the Proposed Development (Offshore) of up to 35 years. At the end of the Proposed Development's lifespan, there will be an assessment of the viability for life extension or repowering versus decommissioning. If life extension or repowering was deemed feasible, an assessment process would be completed at a later stage seeking relevant consents (not included as part of the current EIA/application process), this would include consideration of extending the operational lifespan of the Proposed Development (Onshore) or partial decommissioning and repowering.

5 Conclusion

5.1.1.1 The Proposed Development (Onshore) has been informed by a thorough and robust EIA and design refinement process. This has included consideration of planning policy, environmental impacts and their effects, physical constraints, engineering constraints, health and safety considerations and stakeholder consultation and engagement.

5.1.1.2 The design has evolved taking into account parameters including underground installation, screening of the substation location and use of HDD at the Landfall Site and major road/watercourse crossings.

5.1.1.3 This DAS has provided an assessment of the Proposed Development (Onshore) demonstrating compliance with the relevant design and access policies of the Development Plan.

5.1.1.4 Throughout the design process, there has been engagement with stakeholders including Aberdeenshire Council, statutory environmental bodies, community councils. Consultation with the local community has also been carried out at key stages; first consultation events (Offshore: November 2022 to February 2023 and Onshore: June to July 2023) and further feedback events (Onshore and Offshore April to June 2024). The Pre-Application Consultation (PAC) report set out in detail how we carried out these consultations, the feedback received in response to the consultations and how we had regard to the feedback in developing the Proposed Development (Onshore) design.

5.1.1.5 Further refinement of the detailed design will include additional consultation, consideration of updated baseline data, survey results and engineering studies.

6 References

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