Marine Protected Area (MPA) Assessment – Shadow Without Prejudice Derogation Case

Version Number	Reason for Issue / Major Changes	Date of Change
A01	Issued for use	19/12/2024
R04	Minor Revisions	18/12/2024
R03	Minor Revisions	16/12/2024
R02	Major Revisions	25/11/2024
R01	First Draft	19/11/2024

Document Code:	CEN001-FLO-CON-ENV-RPT-0081	
Contractor Document Number:	N/A	
Version Number:	A01	
Date:	19/12/2024	
Prepared by:	DM	
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Abbreviations

ABBREVIATION	DEFINITION
AC	Alternating Current
AEOSI	Adverse Effect on Site Integrity
AIS	Automatic Identification System
AMOC	Atlantic Meridional Overturning Circulation
AR6	6th Assessment Report
BEIS	Department for Business, Energy and Industrial Strategy
BESS	British Energy Security Strategy
CCA	Climate Change Act 2008
CCC	Committee on Climate change
CCUS	Carbon capture Usage and Storage
CES	Crown Estate Scotland
CNS	Central North Sea
CO2	Cabon Dioxide
DC	Direct Current
Defra	Department for Environment, Food and Rural Affairs
DESNZ	Department of Energy Security and Net Zero
EC	European Commission
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EGMF	East of Gannet and Montrose Fields
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EICB	Export/Import Cable Bundle
EICC	Export/Import Cable Corridor
FTU	Floating Turbine Unit

ABBREVIATION	DEFINITION
GES	Good Environmental Status
GHG	Greenhouse Gas
GVA	Gross Value Added
HRA	Habitats Regulations Appraisal
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IAC	Inter-Array Cables
INTOG	Innovation and Targeted Oil and Gas
IPCC	Intergovernmental Panel on Climate Change
IPF	Initial Plan Framework
JEAP	Joint Environment Accelerator Programme
JNCC	Join Nature Conservation Committee
KM	Kilometre
MD-LOT	Marine Directorate Licensing Operations Team
MEEB	Measures of Equivalent Environmental Benefit
MHWS	Mean High water spring
MLA	Marine Licence Applications
MPA	Marine Protected Area
MPA	Marine Policy Statement
MRF	Marine Recovery Fund
MSFD	Marine Strategy Framework Directive
MW	Megawatts
ncMPA	Nature Conservation MPA
NFFO	National Federation of Fishermen's Organisations
NGESO	National Grid Electricity System Operator
NM	Nautical Miles
NMP	National Marine Plan

ABBREVIATION	DEFINITION
NSTD	North Sea Transition Deal
OSCPs	Offshore Substation Converter Platforms
OWF	Offshore Wind farm
RLB	Red Line Boundary
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation
SFF	Scottish Fishermen's Federation
SMEEF	Scottish Marine Environmental Enhancement Fund
SMP	Sectoral Marine Plan
SNCB	Statutory Nature Conservation Bodies
SPA	Special Protection Areas
TCE	The Crown Estate
TOG	Targeted Oil and Gas (a component of INTOG)
UN	United Nations
VMS	Vessel Monitoring System
WTG	Wind Turbine Generators

Glossary

TERM	DEFINITION
2023 Scoping Opinion	Scoping Opinion received in June 2023, superseded by the 2024 Scoping Opinion.
2023 Scoping Report	Environmental Impact Assessment (EIA) Scoping Report submitted in 2023, superseded by the 2024 Scoping Report.
2024 Scoping Opinion	Scoping Opinion received in September 2024, superseding the 2023 Scoping Opinion.
2024 Scoping Report	EIA Scoping Report submitted in April 2024, superseding the 2023 Scoping Report.
Area of Opportunity	The area in which the limits of electricity transmission via High Voltage Alternating Current (HVAC) cables can reach oil and gas assets for decarbonisation. This area is based on assets within a 100 kilometre (km) radius of the Array Area.
Array Area	The area within which the Wind Turbine Generators (WTGs), floating substructures, moorings and anchors, Offshore Substation Converter Platforms (OSCPs) and Inter-Array Cables (IAC) will be present.
Cenos Offshore Windfarm ('the Project')	'The Project' is the term used to describe Cenos Offshore Windfarm. The Project is a floating offshore windfarm located in the North Sea, with a generating capacity of up to 1,350 Megawatts (MW). The Project which defines the Red Line Boundary (RLB) for the Section 36 Consent and Marine Licence Applications (MLA), includes all offshore components seaward of Mean High Water Springs (MHWS) (WTGs, OSCPs, cables, floating substructures moorings and anchors and all other associated infrastructure). The Project is the focus of this Environmental Impact Assessment Report (EIAR).
Cenos Offshore Windfarm Ltd. (The Applicant)	The Applicant for the Section 36 Consent and associated marine licences.
Cumulative Assessment	The consideration of potential impacts that could occur cumulatively with other relevant projects, plans, and activities that could result in a cumulative effect on receptors.
Developer	Cenos Offshore Windfarm Ltd., a Joint Venture between Flotation Energy and Vårgrønn As (Vårgrønn).
Environmental Impact Assessment (EIA)	The statutory process of evaluating the likely significant environmental effects of a proposed project or development. Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation and maintenance and decommissioning.
Environmental Impact Assessment Regulations	This term is used to refer to the Environmental Impact Assessment Regulations which are of relevance to the Project. This includes the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended); and the Marine Works (Environmental Impact Assessment) Regulations 2007.

TERM	DEFINITION
Environmental Impact Assessment Report	A report documenting the findings of the EIA for the Project in accordance with relevant EIA Regulations.
Export/Import Cable	High voltage cable used to export/import power between the OSCPs and Landfall.
Export/Import Cable Bundle (EICB)	Comprising two Export / Import Cables and one fibre-optic cable bundled in a single trench.
Export/Import Cable Corridor (EICC)	The area within which the Export/Import Cable Route will be planned and the Export / Import Cable will be laid, from the perimeter of the Array Area to MHWS.
Export / Import Cable Route	The area within the Export / Import Export Corridor (EICC) within which the Export/Import Cable Bundle (EICB) is laid, from the perimeter of the array area to MHWS.
Floating Turbine Unit (FTU)	The equipment associated with electricity generation comprising the WTG, the floating substructure which supports the WTG, mooring system and the dynamic section of the IAC.
Flotation Energy	Joint venture partner in Cenos Offshore Windfarm Ltd.
Habitats Regulations	The Habitats Directive (Directive 92/43/ECC) and the Wild Birds Directive (Directive 2009/147/EC) were transposed into Scottish Law by the Conservation (Natural Habitats &c) Regulations 1994 ('Habitats Regulations') (up to 12 NM); by the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('Offshore Marine Regulations') (beyond 12 NM); the Conservation of Habitats and Species Regulations 2017 (of relevance to consents under Section 36 of the Electricity Act 1989); the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001; and the Wildlife and Countryside Act 1981. The Habitats Regulations set out the stages of the Habitats Regulations Appraisal (HRA) process required to assess the potential impacts of a proposed project on European Sites (Special Areas of Conservation, Special Protection Areas, candidate SACs and SPAs and Ramsar Sites).
Habitats Regulations Appraisal	The assessment of the impacts of implementing a plan or policy on a European Site, the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.
High Voltage Alternating Current (HVAC)	Refers to high voltage electricity in Alternating Current (AC) form which is produced by the WTGs and flows through the IAC system to the OSCPs. HVAC may also be used for onward power transmission from the OSCPs to assets or to shore over shorter distances.
High Voltage Direct Current (HVDC)	Refers to high voltage electricity in Direct Current (DC) form which is converted from HVAC to HVDC at the OSCPs and transmitted to shore over longer distances.

TERM	DEFINITION
Horizontal Directional Drilling (HDD)	An engineering technique for laying cables that avoids open trenches by drilling between two locations beneath the ground's surface.
Innovation & Targeted Oil and Gas (INTOG)	In November 2022, the Crown Estate Scotland (CES) announced the Innovation & Targeted Oil and Gas (INTOG) Leasing Round, to help enable this sector-wide commitment to decarbonisation. INTOG allowed developers to apply for seabed rights to develop offshore windfarms for the purpose of providing low carbon electricity to power oil and gas installations and help to decarbonise the sector. Cenos is an INTOG project and in November 2023 secured an Exclusivity Agreement as part of the INTOG leasing round.
Inter-Array Cable (IAC)	The cables which connect the WTGs to the OSCPs. WTGs may be connected with IACs into a hub or in series as a 'string' or a 'loop' such that power from the connected WTGs is gathered to the OSCPs via a single cable.
Joint Venture	The commercial partnership between Flotation Energy and Vårgrønn, the shareholders which hold the Exclusivity Agreement with CES to develop the Cenos site as an INTOG project.
Landfall	The area where the Export / Import Cable from the Array Area will be brought ashore. The interface between the offshore and onshore environments.
Marine Licence	Licence required for certain activities in the marine environment and granted under the Marine and Coastal Access Act 2009 and/or the Marine (Scotland) Act 2010.
Marine Protected Area (MPA)	Marine sites protected at the national level under the Marine (Scotland) Act 2010 out to 12 NM, and the Marine and Coastal Access Act 2009 between 12-200 NM. In Scotland MPAs are areas of sea and seabed defined so as to protect habitats, wildlife, geology, underseas landforms, historic shipwrecks and to demonstrate sustainable management of the sea.
Marine Protected Area (MPA) Assessment	A three-step process for determining whether there is a significant risk that a proposed development could hinder the achievement of the conservation objectives of an MPA.
Mean High Water Springs (MHWS)	The height of Mean High Water Springs is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest.
Mean Low Water Springs (MLWS)	The height of Mean Low Water Springs is the average throughout a year of the heights of two successive low waters during periods of 24 hours (approximately once a fortnight).
Mitigation Measures	Measures considered within the topic-specific chapters in order to avoid impacts or reduce them to acceptable levels. • Primary mitigation – measures that are an inherent part of the design of the Project which reduce or avoid

TERM	DEFINITION
	the likelihood or magnitude of an adverse environmental effect, including location or design; • Secondary mitigation – additional measures implemented to further reduce environmental effects to 'not significant' levels (where appropriate) and do not form part of the fundamental design of the Project; and • Tertiary mitigation – measures that are implemented in accordance with industry standard practice or to meet legislative requirements and are independent of the EIA (i.e. they would be implemented regardless of the findings of the EIA). Primary and tertiary mitigation are referred to as embedded mitigation. Secondary mitigation is referred to as additional mitigation.
Mooring System	Comprising the mooring lines and anchors, the mooring system connects the floating substructure to the seabed, provides station-keeping capability for the floating substructure and contributes to the stability of the floating substructure and WTG.
Nature Conservation Marine Protected Area (NCMPA)	MPA designated by Scottish Ministers in the interests of nature conservation under the Marine (Scotland) Act 2010.
Offshore Substation Converter Platforms (OSCPs)	An offshore platform on a fixed jacket substructure, containing electrical equipment to aggregate the power from the WTGs and convert power between HVAC and HVDC for export/import via the export / import cable to / from the shore. The OSCPs will also act as power distribution stations for the Oil & Gas platforms.
Onward Development	Transmission projects which are anticipated to be brought forward for development by 3rd party oil and gas operators to enable electrification of assets via electricity generated by the Project. All Onward Development will subject to separate marine licensing and permitting requirements.
Onward Development Area	The area within which oil and gas assets would have the potential to be electrified by the Project.
Onward Development Connections	Oil and gas assets located in the waters surrounding the Array Area will be electrified via transmission infrastructure which will connect to the Project's OSCPs. These transmission cables are referred to as Onward Development Connections.
Project Area	The area that encompasses both the Array Area and EICC.
Project Design Envelope	A description of the range of possible elements that make up the Project design options under consideration and that are assessed as part of the EIA for the Project.
Study Area	Receptor specific area where potential impacts from the Project could occur.

TERM	DEFINITION
Transboundary Assessment	The consideration of impacts from the Project which have the potential to have a significant effect on another European Economic Area (EEA) state's environment. Where there is a potential for a transboundary effect, as a result of the Project, these are assessed within the relevant EIA chapter.
Transmission Infrastructure	The infrastructure responsible for moving electricity from generating stations to substations, load areas, assets and the electrical grid, comprising the OSCPs, and associated substructure, and the Export / Import Cable.
Vårgrønn As (Vårgrønn)	Joint venture partner in Cenos Offshore Windfarm Ltd.
Wind Turbine Generator (WTG)	The equipment associated with electricity generation from available wind resource, comprising the surface components located above the supporting substructure (e.g., tower, nacelle, hub, blades, and any necessary power transformation equipment, generators, and switchgears).
Worst-Case Scenario	The worst-case scenario based on the Project Design Envelope which varies by receptor and / or impact pathway identified.

Executive Summary

This document provides evidence to satisfy the Scottish Ministers that the Cenos Offshore Windfarm (the Project) meets the conditions set out in Section 126(7) of the Marine and Coastal Access Act 2009 and Section 83(4) of the Marine (Scotland) Act 2010. These sections allow for a project to proceed with consent where it cannot be guaranteed that the project does not present any significant risk to the conservation objectives of a Nature Conservation Marine Protected Area (ncMPA). For the purpose of this document, these sections would apply to the East of Gannet and Montrose Fields (EGMF) ncMPA, which the Project overlaps.

The relevant legislation and guidance pertaining to the requirement for an assessment of potential impact on ncMPAs and their protected features is described alongside a Project description and detailed discussion of the conditions that must be met. These discussions accompany and follow on from the results of **the Marine Protected Areas (MPA) Assessment** carried out by the Cenos Offshore Windfarm Ltd (from hereon referred to as 'the Applicant') in support of the application. As the Applicant's conclusions of the MPA Assessment provide a clear case that the Project does not significantly affect the objectives or protected features of any MPA, this document presents a without prejudice derogation case.

The derogation case demonstrates that there is an urgent need for the Project to proceed at this time and in this location. At the core of the Project is a rare opportunity to address the climate and biodiversity crisis through the provision of much needed renewable energy to Scotland and the UK. Significantly, this Project will also make possible the decarbonisation and electrification of oil and gas production in the Central North Sea (CNS) meeting a key Scottish and UK policy objective and directly contributing to the delivery of the North Sea Transition Deal (NSTD). The Project's contribution to decarbonisation efforts is demonstrated to be the only option currently available to meet these pressing needs ahead of any other oil and gas decarbonisation project. It is also evidenced that the Project is of significant public benefit and that this benefit clearly outweighs any potential harm to the environment that may be caused.

In addition to the discussion of requirement for the project and public benefit, this document also describes the process for consideration of Measures of Equivalent Environmental Benefit (MEEB) that may be required following the conclusion of the derogation case. The MEEB are discussed in full in the separate **MPA Assessment: Measures of Equivalent Environmental Benefit and Implementation Strategy**.

In the event that the Scottish Ministers are not satisfied that the Project can proceed without risk to the objectives of the EGMF ncMPA, then the information presented here demonstrates an urgent need for the Project and clear public benefit that would allow the Project to proceed.

1 Introduction

1.1 Background to the project

Established in March 2021, the North Sea Transition Deal (NSTD), is a sector deal between the United Kingdom (UK) Government and the oil and gas industry, with the aim to facilitate the decarbonisation of the oil and gas sector. A key commitment set out in the NSTD includes setting early emission reduction targets and investing up to £16 billion by 2030 in order to reduce oil and gas carbon emissions (Department for Energy Security and Net Zero (DESNZ), 2021). The aligns with the aims of the NSTD by facilitating the electrification of offshore oil and gas installations, thereby contributing to decarbonisation efforts. Additionally, the Project will provide the UK Grid with surplus electricity, thus contributing to the UK climate and renewable energy targets. The Project will also facilitate the upscaling of the floating offshore wind supply chain and contribute to the Offshore Wind Sector Dead target to deliver 60% UK content by 2030.

Crown Estate Scotland (CES) announced the Innovation and Targeted Oil & Gas (INTOG) leasing round in 2022, which aimed to help enable this sector-wide commitment to oil and gas decarbonisation through the use of offshore wind. The Targeted Oil and Gas (TOG) portion of the INTOG leasing round allows developers to apply for the rights to construct offshore windfarms for the purpose of providing low carbon electricity to power oil and gas installations. These projects will consequently contribute to decarbonising Scotland and the UK.

In November 2022, the Applicant submitted a leasing application under the INTOG leasing round and was subsequently awarded an Exclusivity Agreement to develop the Project. The Project is entirely located within the area INTOG 'E-a' as defined in the INTOG Sectoral Marine Plan Initial Plan Framework (INTOG SMP IPF) (Scottish Government 2022), which was published to deliver the planning framework and the areas of seabed that will form the spatial footprint for the CES leasing process.

1.2 Summary of the project

The Project is a floating offshore windfarm, located approximately 200 kilometres (km) offshore east of Aberdeen, from the closest edge of the Project Array Area, in the Central North Sea (CNS). The Project, which will be composed of up to 95 Wind Turbine Generators (WTGs), shall enable efficient electrification of offshore oil and gas assets in the surrounding area. This will be delivered through HVAC transmission cabling which will connect those assets to the Project's Offshore Substation Convertor Platforms (OSCPs). In addition, the Project will also generate renewable electricity to the UK Grid. Connections to oil and gas assets will be developed separately to the Project and are referred to by the Applicant as Onward Development Connections. When wind speeds are insufficient to generate the required electrical power for the oil and gas assets directly, additional electricity would be imported from the UK grid through the Export/Import Cable connection (EICC).

The Project's lifetime is expected to exceed that of the oil and gas assets and, therefore, would continue to produce renewable electricity to the UK Grid after those assets are decommissioned. Additionally, new oil and gas projects may also seek to electrify infrastructure through the Project. Overall, the requested operational lifetime consent duration of the Project is 35 years. The offshore construction phase is expected to commence in 2030, with pre-construction and site preparation activities, and would continue for approximately six years, with the aim to complete the windfarm construction by 2035.

As detailed in the accompanying **Environmental Impact Assessment Report** (**EIAR) Vol. 2, Chapter 5: Project Description**, the Project will comprise up to 95 Floating Turbine Units (FTUs).

Each FTU will have a wind turbine generator (WTG) and a floating substructure which will be moored to the seabed to ensure station-keeping within the Array Area. Inter-Array Cables (IACs) will be used to gather electricity from the FTUs to up to two centralised OSCPs. The IACs will have dynamic portions of cable within the water column between the seabed and substructure, and static portions will be buried in the seabed. The final layout for the Project will be determined post-consent and is dependent on environmental, technical, maritime, commercial and safety factors, such as seabed and metocean characteristics, and consideration of relevant stakeholder feedback. Included in the transmission assets are the OSCPs and the offshore Export/Import Cable (EIC). The IACs will connect to the OSCPs to transmit power from the WTGs to a centralised electricity hub before onward transmission to oil and gas assets and the UK grid.

The inshore section of the EICC (from 12 NM to MHWS) overlaps with the NorthConnect cable corridor. The Project and the NorthConnect interconnector will only require one set of infrastructure and therefore one Marine Licence within this inshore area. This inshore section of the EICC already has consent for cable infrastructure as part of the NorthConnect EIA and associated Marine Licences. Nonetheless, this EIAR assesses the EICC from the OSCPs within the Array Area to MHWS.

The Applicant has entered into a binding agreement to acquire NorthConnect Limited (the "Acquisition"), an interconnector project. Completion of the Acquisition is subject to receipt of customary regulatory approvals. Once this acquisition is complete, the Project will hold the benefit of the Marine Licences granted in respect of the NorthConnect project as well as the planning permissions that have been granted for the onshore substation and cable infrastructure. Discussions remain ongoing as to whether the Applicant will utilise the full NorthConnect route to develop a multi-purpose interconnector that connects the Project (as well as future oil and gas Onward Development Connections) to Scotland and Norway. The Applicant intends to utilise the shoreward part of the NorthConnect cable corridor for its offshore transmission infrastructure, although it is applying for new marine licences to reflect the fact that its transmission infrastructure would not be part of an exempt interconnector cable and instead connected to an offshore generating station. For the avoidance of doubt, only one set of infrastructure will be placed within the consented cable corridor.

The onshore elements for ongoing grid connection (above MHWS), including the landward exit point and cable pull through, has previously been consented through the NorthConnect High Voltage Direct Current (HVDC) Cable Planning Consent (Planning Application Reference Number APP/2015/1121 and APP/2018/1831).

The Onward Development and Onward Development Connections for oil and gas decarbonisation will be defined and brought forward by 3rd party oil and gas operators, subject to separate marine licensing and permitting requirements. At this very early stage in the process, information regarding these onward connections is limited and cannot be confirmed by the Project. In accordance with standard practice and relevant industry guidance, the level of information available means there is insufficient detail to enable inclusion within a cumulative effects assessment. However, recognising industry feedback and a keen interest in this topic from stakeholders, the Applicant has voluntarily provided an assessment of the combined impact of the Project and the potential onward connection. Please refer to **EIAR Vol. 3, Chapter 22: Statement of Combined Effect** for further details.

The Applicant submitted an Environmental Impact Assessment (EIA) Scoping Report (the '2023 Scoping Report') (Cenos, 2023) to Scottish Ministers in February 2023 to support the request for a Scoping Opinion for the Project. After receiving the 2023 Scoping Opinion, the Applicant submitted a new Scoping Report ('2024 Scoping Report') (Cenos, 2024) to reflect the feedback provided in the 2023 Scoping Opinion and to provide further detail on the Project. The 2024 Scoping Report provided a more thorough review of impacts and a robust and refined Project Design to enable impacts to be

scoped in and out of the impact assessment methodology. This ensured that the EIA process would be conducted thoroughly and to the highest standard.

Recognising MD-LOT's regulatory obligations under the Marine and Coastal Access Act 2009 for inshore waters (within 12 nm of the coast), and the Marine (Scotland) Act 2010 for offshore waters (outside 12 nm), the Applicant has also prepared a Marine Protected Areas (MPA) Assessment that provides sufficient information for the determining authority, MD-LOT, to reach a conclusion under Section 83 of the 2010 Act and Section 126 of the 2009 Act as to whether the project can proceed.

That **MPA Assessment** presents the existing environmental baseline established from desk-based studies, the EIAR, public data, site-specific surveys, and feedback obtained on the proposed scope of the MPA Assessment during EIA Scoping and stakeholder engagement. The assessment also outlines the potential impact pathways to and conclusions as to whether hinderance of the conservation objectives for each relevant ncMPA may occur.

As the conclusions presented in the MPA Assessment clearly demonstrate that the potential impact of the Project is insignificant and does not hinder the objectives of the relevant ncMPAs, this derogation case document is based on the assumption that the determining authority agrees with the assessment results but still concludes that those levels of impact are not insignificant. Under those circumstances, this document sets out the need for the Project, the lack of any other means by which the Project can be delivered, the clear public benefit of the Project, and describes MEEB, which can be implemented to offset the potential impact of the Project.

1.3 Structure of the document

This document builds on the conclusions of the **MPA assessment** and discusses the various requirements of the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010. In these Acts, where the determining authority cannot conclude there is no significant risk of the project hindering the objectives of the ncMPA, a project may still be allowed to proceed as long as the requirements set out in Section 83 (4) and Section 126 (7) of the 2010 and 2009 Acts, respectively, are met.

This structure is as follows:

- **Executive Summary**
- **Section 1: Introduction** - providing background for the Project, supporting information, descriptions of consultation undertaken by the Applicant;
- **Section 2: Legal Framework and Relevant Guidance** – describes the legislation under which the MPA Assessment is required and the steps necessary to conclude a project can proceed where non-insignificant harm is identified;
- **Section 3:** Error! Reference source not found. – describes the conclusions of the Applicant's MPA Assessment and the impact for which compensation may be required;
- **Section 4: Need for the Project** – Establishes why the Project is required in the context of environmental, social and political factors;
- **Section 5: No Other Means/Alternatives**
- – explains why there are no other means of proceeding with the Project that would result in a substantially lower risk of hindering the objectives of the ncMPA
- **Section 6: Public Benefit** – Describes the public benefit of proceeding with the Project and that the Project benefit clearly outweighs the risk of damage.
- **Section 7: Measures of Equivalent Environmental Benefit** – describes the applicants proposed Measures of Equal Environmental benefit.
- **Section 8:** Error! Reference source not found. – Summarises the information presented in this document and sets out the Applicant's position relating to the requirement for a

derogation and that the Project can proceed without risk of significant harm to the ncMPA conservation objectives.

- **Section 9: Conclusions**

The Project has carried out a detailed MPA Assessment to support the application process and provide the necessary information for Scottish Ministers to conclude that the Project will not affect (other than insignificantly) the conservation objectives of the EGMF ncMPA. Accordingly, it is the Applicant's position that a favourable determination of consent for the project can made.

However, should Scottish Ministers conclude that significant impact will occur as a result of the project, the information presented above provides a clear argument for a derogation to be made in accordance with the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010.

The Project is urgent, necessary and the only Targeted Oil and Gas project sufficiently advanced to deliver the Scottish, UK and oil and gas sector decarbonisation objectives. Other means to deliver the project have been shown to fail to meet the Project objectives and wider legally binding Scottish and UK net zero commitments. No alternative locations allow the achievement of these objectives and alternative technology is either incorporated into the project design or would not significantly lower the risk of achieving the objectives of the ncMPA.

Similarly, the public benefit of the Project has been demonstrated to clearly outweigh the minimal damage the Project will create within the ncMPA. In terms of the environmental public benefit, the Project represents a net gain in terms of further reducing the negative impact of fishing effort in the protected area.

Accordingly, the Project firmly establishes the case to proceed with a derogation as it passes the "no other means" and "public benefit" sections of the 2009 and 2010 Acts.

Scottish Ministers can therefore authorise the Project, provided that they are satisfied that the MEEB, discussed in Marine Protected Area: Measures of Equivalent Environmental Benefit and Implementation Plan, are sufficient.

- References

1.4 Supporting information

This document follows on from and is intrinsically linked to the MPA Assessment provided by the Applicant. In turn, the MPA Assessment has been constructed alongside the EIA report, where the individual topic assessments have been undertaken and potential impact pathways identified, and quantified where possible. The conclusions of the MPA Assessment are presented here, but not all of the other information has been repeated below. As such, this document should be read in conjunction with the **MPA Assessment** and the following primary supporting documents listed below:

- **EIAR Vol. 2 Chapter 02: Need for the Project**
- **EIAR Vol. 2, Chapter 03: Policy and Legislative Context**
- **EIAR Vol. 2, Chapter 05: Project Description**
- **EIAR Vol. 3. Chapter 08: Marine geology, Oceanography and Coastal Processes**
- **EIAR Vol. 3, Chapter 09: Marine Water and Sediment Quality**
- **EIAR Vol. 3, Chapter 10: Benthic Ecology**
- **EIAR Vol. 3, Chapter 14: Commercial Fisheries**
- **EIAR Vol. 3, Chapter 19: Socio-economics, Tourism and Recreation**
- **Marine Protected Areas Assessment**
- **Habitats Regulations Assessment – Derogation Case**

1.5 Summary of consultation to date

Consultation with relevant stakeholders is a primary focus of the Project and a key component of the MPA Assessment the EIAR. In the case of the MPA Assessment, this includes constructive engagement with the Statutory Nature Conservation Bodies (SNCB) which in this instance includes NatureScot and the Joint Nature conservation Committee (JNCC).

In addition to the consultation undertaken for the project as a whole, described in **EIAR Vol. 2 Chapter 06: Stakeholder Engagement** there has been specific consultation on the MPA Assessment and potential need for a derogation and MEEB with JNCC and NatureScot.

Key discussion and engagement relating to the MPA Assessment and derogation are recorded in Table 1-1.

Table 1-1 - MPA specific consultation

DATE	CONSULTEE STAKEHOLDER(S)	MEETING/TOPIC
29/02/2024	MD-LOT, JNCC, NatureScot	Pre-Scoping Workshop
10/09/2024, as amended 19/09/2024	Official response	Scoping Opinion and responses
07/10/2024	MD-LOT, JNCC, NatureScot	MPA assessment and HRA derogation
21/10/2024	MD-LOT, JNCC, NatureScot	MPA and HRA derogations
26/11/2024	NSTA, JNCC, NatureScot, MD-LOT	Onward connections to oil and gas assets

2 Legal Framework and Relevant Guidance

2.1 Scotland and UK legislation

Delivery of the Project requires consideration and adherence to a wide range of legislation and regulation. The wider planning, policy and guidance applicable to the Project is discussed in the **EIAR Vol, 2, Chapter 3: Policy and Legislative Context**. The legislation and guidance related to MPA Assessment and requirements for progressing a project where significant impact on the conservation objectives of a ncMPA cannot be ruled out is described below.

Table 2-1 - Relevant legislation, policy and guidance

RELEVANT LEGISLATION, POLICY, AND GUIDANCE	SUMMARY
Energy Act 2004 as amended by the Scotland Act 2016	Sections 105 to 114 of the Energy Act 2004 as amended by the Scotland Act 2016 contain statutory requirements in relation to the decommissioning of offshore renewable energy installations (OREI) and their related electricity lines. Under the terms of the Energy Act 2004, Scottish Ministers may require a person who is responsible for these installations or lines in Scottish waters or in a Scottish part of a renewable energy zone (REZ) to prepare (and carry out) a costed Decommissioning Programme for submission to and approval by Scottish Ministers (Scottish Government, 2022b). Responsibilities and powers associated with decommissioning for OREI within Scottish Waters transferred from the Secretary of State to Scottish Ministers in 2017. Before this the Department for Business, Energy and Industrial Strategy (BEIS) (Now Department for Energy Security and Net Zero.(DESNZ)) was responsible for requiring decommissioning programmes (BEIS, 2019). Marine Directorate are seeking to establish robust policies and procedures covering decommissioning. The Guidance Note for Decommissioning of Offshore Renewable Energy Installation in Scottish waters (Scottish Government, 2022b) or in the Scottish Part of the Renewable Energy Zone, under the Energy Act 2004 (Scottish Government, 2022b), was finalised in August 2022.
Marine and Coastal Access Act 2009	The 2009 Act established provisions for the management and protection of the marine environment. In relation to Scotland, the Act applies to the offshore marine region (12-200 nautical miles (NM)). It sets out requirements for a UK MPS, a marine licensing regime, powers to designate marine protected areas, a duty to contribute to a UK network of marine sites, and associated enforcement powers. Under the Marine and Coastal Access Act 2009 Scottish Ministers have responsibility for marine licensing and enforcement in the Scottish offshore marine region.

RELEVANT LEGISLATION, POLICY, AND GUIDANCE	SUMMARY
	The 2009 Act also established the duties of public authorities with relation to decision regarding acts that are capable of affecting (other than insignificantly) the protected features of a MPA. Additionally, where a project may negatively affect an MPA, the 2009 Act provides conditions that, if met, would allow an act or project to be authorised.
Marine (Scotland) Act 2010	The Marine (Scotland) Act 2010 applies to the Scottish inshore region (0 – 12 NM) and came into force in March 2010 in response to demands for improved management of the marine environment and its resources. The Act introduced provisions for marine planning, marine licensing, marine conservation, seal conservation and enforcement. Under the Marine (Scotland) Act 2010 the Scottish Ministers are responsible for marine licensing and enforcement in the Scottish inshore region (out to 12 NM) and it is an offence to carry on, or cause or permit another person to carry on, a 'licensable marine activity' without a Marine Licence. Under Part 3, Section 5 of the Marine (Scotland) Act 2010, a National Marine Plan must be produced for the Scottish inshore region and must include policies for the sustainable development of Scotland's seas and set objectives for economic, social and marine ecosystems and mitigation of and adaptation to climate change. This legislation also facilitated the designation of 11 Scottish Marine Regions under the Scottish Marine Regions Order 2015 for which regional marine plans will be developed. Additionally, the 2010 Act, similarly to the 2009 Act, sets out the duties of public authorities in relation to certain decisions. With respect to MPA, the public authority must determine whether an application is capable of affecting (other than insignificantly) a protected feature in a ncMPA. Where significant effect cannot be ruled out a project cannot be granted authorisation unless a series of conditions are met.
UK MPS 2011	The UK MPS (HM Government, 2011), which was created and adopted by the UK Government and devolved administrations, facilitates an integrated approach to marine planning across the UK and sets out the high-level framework for preparing marine plans and taking decisions affecting the marine environment. Importantly, the UK MPS outlines the requirement for marine plans within UK waters to be developed taking into account environmental, social, and economic objectives.
East of Gannet and Montrose Fields	The East of Gannet and Montrose Fields Marine Protected Area (MPA) Order 2014 designates an area in the North Sea as a Marine Protected Area. This MPA aims to conserve a range of marine

RELEVANT LEGISLATION, POLICY, AND GUIDANCE	SUMMARY
Marine Protected Area Order 2014	habitats and species, including offshore deep-sea mud habitats and ocean quahogs. The designation helps ensure sustainable use of marine resources while protecting biodiversity
Turbot Bank Marine Protected Area Order 2014	The Turbot Bank Marine Protected Area (MPA) Order 2014 establishes a protected area off the east coast of Scotland. This MPA focuses on safeguarding the habitat of the sandeel, a key species in the marine food web. The protection measures aim to maintain the ecological balance and support the health of the marine ecosystem
The Southern Trench Nature Conservation Marine Protected Area Order 2020	The Southern Trench Nature Conservation Marine Protected Area (MPA) Order 2020 designates a significant marine area off the northeast coast of Scotland. This MPA is notable for its diverse habitats, including burrowed mud and deep-sea trenches, which are important for species such as minke whales and various fish species. The order aims to protect these habitats and species, contributing to the overall health and resilience of the marine environment
Policy	
National Policy Statements 2011	UK Government guidelines and policies relating in part to the development, safety, sustainability, environment, and energy demand of national energy infrastructure. The Overarching NPS for Energy (EN1) notes the critical need for the UK to develop and secure electricity supplies and sets out the relationship between the NPS and marine licensing decisions undertaken by the MMO. In particular, the NPS for Electricity Networks (EN-5) details policies regarding proposed cable projects. These policies were revised in 2023 and came into effect in January 2024.
Scotland's National Marine Plan 2015	In March 2015, the Scottish Government published 'Scotland's National Marine Plan – a Single Framework for Managing our Seas' (the NMP) (Scottish Government, 2015). The National Marine Plan 2015 sets out strategic policies for the sustainable development of Scotland's marine resources out to 200 NM (370 km). It is required to be compatible with the UK MPS (see above) and existing marine plans across the UK. The strategic objectives of the SNMP integrate the ecosystem approach through the adoption of the eleven descriptors of Good Environmental Status (GES) from the Marine Strategy Framework Directive (MSFD) (EU Directive 2014/89/EU)), and integrate the guiding principles to sustainable development through the adoption of the UK High Level Marine Objectives: • Achieving a sustainable marine economy;

RELEVANT LEGISLATION, POLICY, AND GUIDANCE	SUMMARY
	• Ensuring a strong, healthy and just society; • Living within environmental limits; • Promoting good governance; and • Using sound science responsibly. Following the most recent review of the National Marine Plan in 2021, the Scottish Ministers announced, in 2022, their intention to update the National Marine Plan. This update is underway but has not yet reached a draft consultation stage. A stakeholder engagement strategy and statement of public participation was published in August 2024 (Scottish Government 2024b).
Guidance	
Draft Fisheries Assessment – Turbot Bank ncMPA: Fisheries management measures within Scottish Offshore Marine Protected Areas (MPAs)	The Scottish Government released the draft fisheries assessment in August 2024. This assessment evaluates the current fishing activities from demersal trawls and seines in relation to the conservation objectives of the ncMPA. The assessment outlines mitigation measures in relation to fisheries activities and how these will support the conservation of the protected features. This document additionally has conducted an in-combination assessment considering the implications of fishing activities and activities which occur within the ncMPA. This document will be used to support the base case of the fisheries activities within the ncMPA.
Draft Fisheries Assessment – East of Gannet and Montrose Fields ncMPA: Fisheries management measures within Scottish Offshore MPAs	The Scottish Government released the draft fisheries assessment on the 19th August 2024. This assessment evaluates the current fishing activities from demersal trawls and seines in relation to the conservation objectives of the ncMPA. The assessment outlines mitigation measures in relation to fisheries activities and how these will support the conservation of the protected features. This document will be used to support the base case of the fisheries activities within the ncMPA.
Nature Conservation Marine Protected Areas: Draft Management Handbook	The Nature Conservation Marine Protected Areas: Draft Management Handbook (Marine Scotland, 2014a) provides comprehensive guidance on the establishment and management of Marine Protected Areas (MPAs) in Scotland. It outlines the processes for identifying, designating, and managing MPAs to ensure the protection of marine biodiversity and ecosystems. The handbook emphasizes an integrated approach, balancing environmental, social, and economic objectives. It also details the roles and responsibilities of various stakeholders, including government

RELEVANT LEGISLATION, POLICY, AND GUIDANCE	SUMMARY
	agencies, local communities, and industry, in the effective management of MPAs.
Conservation Objectives for East of Gannet and Montrose Fields NCMPA	In August 2024, JNCC published updated conservation objectives for the East of Gannet and Montrose Fields ncMPA. These objectives describe the desired outcome for the protected features.
Supplementary Advice on Conservation Objectives for East of Gannet and Montrose Fields Nature Conservation MPA	In August 2024, JNCC also published new supplementary advice on conservation objectives for the East of Gannet and Montrose Fields MPA. This new advice downgraded the status of the ncMPA and JNCC accordingly advise a "recover" objective for all attributes of the ncMPA, excluding offshore deep-sea muds – supporting processes, which JNCC advise a conserve objective.

2.2 Overview of MPA assessment and derogation

The Project's Array Area is located in Scottish offshore waters and the EICC is located in both Scottish offshore and inshore waters. As described above in Section 2.1, the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 require the authority, in this case the Scottish Ministers acting through MD-LOT, to consider whether the licensable activity applied for is capable of affecting (other than insignificantly) a protected feature in a ncMPA or any ecological or geomorphological process on which the conservation of any protected feature in a ncMPA is dependent.

Provided that authority is satisfied that the project will not affect (other than insignificantly) the protected features in a ncMPA, the Project may be authorised. The MPA Assessment provided by the Applicant follows a staged approach and assesses the potential for the Project impact negatively upon the conservation objectives of the site. The MPA assessment methodology and results are described in detail in the **MPA Assessment Section 2** and **Section 3** onwards and are, therefore, not repeated here.

However, should the authority, Scottish Ministers (with MD-LOT acting as the administrative arm), conclude that it cannot be satisfied that the Project will not affect (other than insignificantly) the protected features in a ncMPA or may otherwise hinder the objectives of the ncMPA, Scottish Ministers must consider whether or not the Project can still be authorised. In this circumstance, the project could only be authorised if certain additional conditions have been satisfied, as detailed in the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010.

The Maritime and Coastal Access Act 2009 (Section 126 (7)) sets out:

7) *The condition in this subsection is that, although the person seeking the authorisation is not able to satisfy the authority that there is no significant risk of the act hindering the achievement of the conservation objectives stated for the MCZ, that person satisfies the authority that—*
   a) *there is no other means of proceeding with the act which would create a substantially lower risk of hindering the achievement of those objectives,*
   b) *the benefit to the public of proceeding with the act clearly outweighs the risk of damage to the environment that will be created by proceeding with it, and*
   c) *the person seeking the authorisation will undertake, or make arrangements for the undertaking of, measures of equivalent environmental benefit to the damage which the act will or is likely to have in or on the MCZ.*

Similarly, the Marine (Scotland) Act 2010 (section 83(4)) sets out that:

The authority must not grant authorisation for the doing of the act unless either—

a) *the person applying for the authorisation satisfies the authority that there is no significant risk of the act hindering the achievement of (as the case may be)—*
   i. *the stated conservation objectives for the Nature Conservation MPA,*
   ii. *the stated purpose for the Demonstration and Research MPA,*
   iii. *the stated preservation objectives for the Historic MPA,*
b) *that person is not able to satisfy the authority as mentioned in paragraph (a) but—*
   i. *satisfies it that there is no other means of proceeding with the act which would create a substantially lower risk of hindering the achievement of those objectives or (as the case may be) that purpose,*
   ii. *satisfies it that the benefit to the public of proceeding with the act clearly outweighs the risk of damage to the environment (or the marine historic asset) that will be created by proceeding with it, and*
   iii. *in relation to a Nature Conservation MPA or a Demonstration and Research MPA, satisfies it and the Scottish Ministers that the person will undertake, or make arrangements for the undertaking of, measures of equivalent environmental benefit to the damage which the act will or is likely to have in or on the marine protected area concerned.*

Despite the Applicant's clear position that the Project does not affect, other than insignificantly, the objectives or features of the ncMPA, this document assumes that, following their own MPA Assessment, MD-LOT cannot satisfy themselves that the Project will not significantly affect the ncMPA. Under that assumption, this document provides a clear case that the required derogation conditions provided above have been met by the Project and, therefore, that the Project can proceed.

2.3 Relevant guidance

In addition to the guidance described above, this document is informed by the *Nature Conservation Marine Protected Areas: Draft Management Handbook* (Marine Scotland, 2014a). Although this document was a draft and a final version was not published at the time of the Applicant's submission, the Draft Management Handbook provides a clear interpretation of the roles and responsibilities of each party in the Marine Protected Areas Assessment process.

More recently, the UK Government has consulted on *Policies to inform updated guidance for Marine Protected Area Assessment* (Defra, 2024). This consultation paper builds on the earlier consultation on the *Best practice guidance for developing compensatory measures in relation to Marine Protected Areas* (Defra, 2021). The most recent Defra consultation closed in February 2024. Whilst no final version of the guidance has been published, the consultation draft and the earlier 2021 consultation

both helpfully outline some of the key definitions and characteristics of the derogation process and MEEB. The guidance also elaborates on the compensation hierarchy that should be considered when developing and, ultimately, implementing compensation or MEEB.

These draft documents and consultations have helped inform this report and the process described below.

2.4 Examples and precedent

In addition to available guidance, there are numerous examples of Marine Protected Area Assessments for projects in Scottish waters available. Those examples have helped shape the MPA Assessment on which this report is based.

Useful examples are those that have considered similar applications and protected features. Relevant examples include:

- Green Volt offshore windfarm (consented 2024; Scottish Government, 2024c)
- Eastern Green Link 2 (consented 2023; MMO, 2023a)
- Cambois Connection (on hold 2023; MMO, 2023b)
- Seagreen Alpha and Bravo (consented 2014; Scottish Government, 2014b)

Though more distant, the Seagreen Alpha and Bravo example is relevant to the Project, as the Firth of Forth Bank Complex ncMPA includes protection for ocean quahogs, a feature which is also protected by the EGMF ncMPA. In this case, the total area of lost habitat was 1.03km² which accounts for 0.05% of the ncMPA. This project was granted consent with JNCC advising that the impacts on the protected features would not be significant.

The recent Berwick Bank Offshore Wind Farm application is currently awaiting determination from Scottish Ministers (Scottish Government 2024). However, this project will also impact the Firth of Forth Bank Complex ncMPA and has conducted a Marine Protected Areas Assessment to support that application (Berwick Bank, 2024). The Berwick Bank assessment indicates a long-term habitat loss of 1.95km² and concludes that the Berwick Bank Offshore Wind farm would not significantly impact the MPA.

In addition, this document has also closely considered the applications and consent determinations for offshore wind projects where a derogation from the Habitats Regulations[1] has been proposed and accepted, in both Scotland and the UK. This precedent helps inform discussion around alternatives to, and public benefit of, the Project.

[1] A term that refers to the collective legislation that translate the Habitats Directive into specific legal obligations. The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) – applicable to projects within the 12 NM limit; The Conservation of Offshore Marine Habitats and Species Regulations 2017 – applicable to projects between the 12 and 200 NM limits; and The Conservation of Habitats and Species Regulations 2017 (as amended) – applicable to Section 36 Consent applications

3 MPA Assessment and Conclusions

3.1 MPA assessment and Applicant's position

The Applicant has carried out a detailed assessment of the potential negative impact of the Project on the conservation objectives and protected features of the East of Gannet and Montrose Fields (EGMF) ncMPA and the Southern Trench ncMPA.

The MPA Assessment concludes that, for the impacts assessed, the Project will not lead to a significant risk of hindering the achievement of the conservation objectives of any of the three ncMPA assessed.

The cumulative assessments also concludes that there will be no significant risk of hindering the achievement of the conservation objectives of any of the three ncMPA assessed.

A summary of the impacts is presented below in Section 3.2. As set out in the **MPA Assessment**, these impacts equate to temporary and long-term effects within the Southern Trench ncMPA and the EGMF ncMPA.

The impact estimated inside the Southern Trench ncMPA is in line with the already consented NorthConnect consent (Planning Application Reference Number APP/2015/1121, APP/2018/1831 and Marine Licence 06771 and 06870). NorthConnect has already been consented and the Project is coordinating with NorthConnect such that a single set of infrastructure will be installed within the co-located EICC, in line with the activities and infrastructure covered by the aforementioned consent. As such, the impact within the Southern Trench is assumed to be acceptable and MD-LOT can satisfactorily conclude that the Project will not affect (other than insignificantly) the achievement of the conservation objectives of the Southern Trench ncMPA. Therefore, the impact of the Project on the Southern Trench ncMPA is not discussed further in this report. This is in line with feedback received in the 2024 Scoping Opinion.

Noting the conclusions of the MPA Assessment carried out for the Project, it is the Applicant's position that the minor effects identified are insignificant and acceptable, such that Scottish Ministers can be satisfied that the Project can proceed without the need to progress beyond the MPA Assessment. It is therefore the case that this derogation case and the MPA Assessment Measures of Equivalent Environmental Benefit and Implementation Strategy are not required.

The rest of this document, however, has been developed under the assumption that Scottish Ministers cannot be satisfy themselves that the Project will not significantly affect the EGMF ncMPA. It thus presents on a without prejudice basis the required information to satisfy the other conditions set out in the Marine and Coastal Access Act 2009 and the Marine (Scotland Act) 2010 (see also Section 2.2).

3.2 Key impacts

The EGMF ncMPA was designated in 2014 to protect offshore deep-sea muds and ocean quahogs (and the supporting offshore subtidal sands and gravels habitat). The conservation objectives and the additional advice for the EGMF ncMPA was updated in August 2024. The designated features, their approximate spatial area and the conservation objectives are described in Table 3-1.

Table 3-1 - Summary of the EGMF ncMPA designated features and conservation objectives

PROTECTED FEATURE	SPATIAL EXTENT (KM^2)	CONSERVATION OBJECTIVES (JNCC 2024)
Offshore deep-sea muds	900	• Attribute: Extent and distribution Conservation Objective: Recover • Attribute: Structure and function Conservation Objective: Recover • Attribute: Supporting processes Conservation Objective: Conserve
Ocean quahog aggregations (including offshore subtidal sands and gravels as their supporting habitat)	939	• Attribute: Extent and distribution Conservation Objective: Recover • Attribute: Structure and function Conservation Objective: Recover • Attribute: Supporting processes Conservation Objective: Recover

The key impacts identified during the Scoping Report (Cenos, 2024) stage have been updated in the MPA Assessment and include:

- Temporary impacts to the seabed and benthic habitats;
- Long-term impacts to the seabed and benthic habitats;
- Potential changes to suspended sediment concentrations and deposition;
- Mobilisation of sediment contaminants;
- Introduction of hard substrates in a predominantly sedimentary environment / Increased predation; and
- Removal of hard structures during decommissioning resulting in loss of colonised surfaces.

For the purposes of the EIAR and the MPA Assessment, a realistic worst-case scenario has been developed. This means that the greatest effect on the EGMF ncMPA designated features has been assessed although the actual impact is very likely to be lower. From this worst-case scenario, the nature of the effects of the project can be categorised. In this case, because the features of the EGMF ncMPA are divided into distinct regions within the EGMF ncMPA, the effects can be described spatially and whether they are temporary or long-term effects.

As shown in **Error! Reference source not found.**, the total footprint of disturbance to the designated features of the EGMF ncMPA is minimal and accounts for a very small percentage of the total area of the site.

Table 3-2 - Approximate area of each protected feature within the EGMF ncMPA and the area impacted by temporary and long-term disturbance

PROTECTED FEATURE	OFFSHORE DEEP-SEA MUDS	OFFSHORE SUBTIDAL SANDS AND GRAVELS HABITAT (SUPPORTING OCEAN QUAHOG AGGREGATIONS)	ENTIRE NCMPA
AREA OF DESIGNATED FEATURE INSIDE NCMPA (KM^2)	900	939	1839
AREA IMPACTED DUE TO TEMPORARY DISTURBANCE (KM^2)	6.38	0.35	6.73
TEMPORARY IMPACT AS % OF DESIGNATED FEATURE	0.71	0.04	0.37
AREA IMPACTED DUE TO LONG-TERM DISTURBANCE (KM^2)	1.56	0.009	1.569
LONG-TERM IMPACT AS % OF DESIGNATED FEATURE	0.17	0.0009	0.08

Included within the long-term disturbance is 0.25 KM^2 of hard substrata that may be introduced to a predominantly sedimentary environment. These impacts are associated with anchoring tethers, OSCPs foundations, hub, mooring chains, etc. (full details are found in the **MPA Assessment**). Although a different nature of impact, many of these substrates overlap with the other long-term impacts. As such they are considered within the calculations above. To quantify these separately or in total with the other long-term impacts would artificially increase the footprint. To provide a similar context as presented in the table above, if all of the hard substrata was assumed to be placed on deep sea mud habitat, this would equate to approximately 0.064% of the designated mud habitat in the NCMPA. Similarly, if the same principle was applied to sands and gravels as a supporting habitat for ocean quahog aggregations, the proportion affected would be 0.026%.

Considering each of the impact pathways and designated features in turn, the MPA Assessment has demonstrated that the Project will not lead to a risk of hindering the achievement of the conservation objectives of the EGMF ncMPA.

More specifically:

“The impacts assessed for the construction, operation & maintenance and decommissioning phases will not lead to a significant risk of hindering the achievement of the Conservation Objective of ‘Recover’ for the attributes ‘Extent and distribution’ and ‘Structure and function’ and the Conservation Objective ‘Conserve’ for the attribute ‘Supporting processes’ for the ‘Offshore deep-sea muds’.

The impacts assessed for the construction, operation & maintenance and decommissioning phases will not lead to a significant risk of hindering the achievement of the Conservation Objective of ‘Recover’ for the attributes ‘Extent and distribution’, ‘Structure and function’ and ‘Supporting processes’ for the ocean quahog aggregations (including offshore subtidal sands and gravels as their supporting habitat)” (MPA Assessment).

These minimal impacts are used in the discussions below to determine if there are any other means of delivering the Project that would “substantially lower the risk of hindering the achievement” of the objectives of the EGMF ncMPA and whether the public benefit “clearly outweighs the risk of damage to the environment.”

4 Need for the Project

In order for a project to proceed wherein the public body (i.e. MD-LOT) cannot be satisfied that the project will not affect (other than insignificantly) the ncMPA, the need for the project must be fully established.

This section describes the urgent need for the Project in the context of the local, national and international climate emergency and biodiversity crisis, legally binding decarbonisation commitments, Scottish and UK policy, and the governments' industrialisation and supply chain ambitions. As the Project will directly contribute to the decarbonisation of the oil and gas production efforts in the North Sea, the Project is uniquely positioned, and required, to help the oil and gas sector meet its own targets, as set out in the NSTD. Other than the Green Volt Offshore Windfarm that was consented in early 2024, there are no other TOG decarbonisation projects sufficiently advanced to allow the maximum decarbonisation opportunity to be realised.

As a floating offshore wind project, the need to develop and establish a nascent technology with supporting supply chain development and address the pressing need for energy security within the UK is also established.

The Project's own objectives demonstrate this need:

I. To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply;

II. To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply;

III. To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters;

IV. To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure;

V. To lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland;

VI. To contribute towards the meeting of Scottish and UK Government targets relating to climate change and net zero and help address the global climate emergency by delivering a significant volume of offshore wind in Scottish waters in the 2030s; and

VII. To ensure that, in the long term, energy is available to consumers at the lowest possible cost to ensure the highest quality of life.

4.1 Key legislation and policy

4.1.1 Overview

Given the globally recognised threat that is climate change, there is a significant volume of legislation and policy that has been established of relevance to low carbon electricity generation. This is true at an international, UK and Scottish context.

At a more local level, within the UK and Scotland, there is additional emphasis in legislation and policy supporting the need for renewables, and in particular offshore wind, to ensure future energy needs are met and they are secure and affordable. Key commitments have been made independently by the UK and Scottish Governments regarding the need to achieve these imperative objectives.

This section presents, in chronological order, the primary legislation, policy and international agreement which underpins the need for offshore wind and, in particular, the Project.

4.1.2 Climate Change Act 2008

The Climate Change Act 2008 (CCA) was passed by the UK Government in November 2008, and is the key legislation underpinning all subsequent climate change legislation, including that introduced by the Scottish Government. The CCA defined legally binding targets for reducing greenhouse gas (GHG) emissions and was the first legally binding climate change mitigation target set by any independent state.

The CCA established a system of carbon budgeting, where the UK Secretary of State was required to set a limit for the net production of carbon by the UK in five-year cycles. This resulted in two primary targets of reducing GHG (in the UK, including Scotland) by 34% before 2020 and 80% before 2050, compared to the baseline level as set in 1990.

The Committee on Climate Change (CCC) was established under the CCA, as an independent body using the most appropriate and up to date evidence available to provide advice to the UK Governments on emissions targets, report on progress regarding GHG emissions, and generally prepare the UK (and therefore Scotland) against the impacts of climate change.

Under the CCA, the relevant national authority may make provision by regulations for trading schemes relating to GHG emissions, with trading schemes defined as:

- *"a scheme that operates by—*
- *(a) limiting or encouraging the limitation of activities that consist of the emission of greenhouse gas or that cause or contribute, directly or indirectly, to such emissions, or*
- *(b) encouraging activities that consist of, or that cause or contribute, directly or indirectly, to reductions in greenhouse gas emissions or the removal of greenhouse gas from the atmosphere."*

This includes the development of clean energy technologies such as renewables, nuclear and carbon capture and storage through increased investment in energy efficiency.

The CCA also included a requirement for the UK Government to develop a National Adaptation Programme to manage the effects of unavoidable climate change within five-year cycles similar to the carbon budgets.

A review of the CCA in 2018 by the Grantham Research Institute (2018) found that the carbon budgets introduced had helped to reduce emissions in the UK, particularly in the power sector, while the economy had continued to grow.

4.1.3 Climate Change (Scotland) Act 2009

The Climate Change (Scotland) Act 2009 was built on the CCA and set out the statutory framework for greenhouse gas emissions reduction in Scotland by setting additional targets for emission

reductions. The Climate Change (Scotland) Act 2009 also enabled interim targets to be adjusted and required the Scottish Ministers to set annual targets for annual emissions reductions up to 2050.

The adjusted interim targets established under this Act (as amended) were:

- 48.5% by 2020;
- 75% by 2030; and
- 90% by 2040.

This Act also established Scotland's Climate Assembly, which informs the Scottish Government's decision-making with regards to the current climate crisis, and the Scottish Nitrogen Balance Sheet, which tracks how efficiently nitrogen is used across Scotland.

4.1.4 The Scottish Government's Climate Change Adaptation Programme

The Scottish Government's Climate Change Adaptation (CCA) Programme (Scottish Government, 2013) was introduced in 2013. The CCA programme focussed on the assessment of climate change risks to the environment, economy, infrastructure and local communities, and the development of adaptation strategies and action plans for a range of sectors. The programme also focussed on increasing engagement and collaboration between stakeholders. The CCA Programme process concluded that critical infrastructure (including transport networks, energy systems, water supply and communications) needed enhancements in order to better handle the increased frequency of climate related hazards, including natural ecosystem-based approaches to improve the overall biodiversity of Scotland.

4.1.5 Scotland's National Marine Plan

Section 11 (Offshore Wind and Marine Renewable Energy) of Scotland's National Marine Plan (NMP) (Scottish Government, 2015) set out the Scottish Government's commitment to building a globally competitive offshore wind and marine renewables industry based in Scotland to take forward the transition to a low carbon economy while ensuring security of energy supply.

The NMP set ambitious targets for renewable energy by aiming to generate the equivalent of 100% of Scotland's own electricity demand from renewable resources by 2020 and to deliver an 80% reduction in greenhouse gas emissions by 2050.

The NMP further set out the part that offshore wind and marine renewables will play in meeting these targets, with the expectation that the role of offshore generation would increase further into the 2020s and beyond (Scottish Government, 2015):

> *"As the global wind industry expands further offshore, Scotland is well placed to become a key hub for the design, development and deployment of the next generation of offshore wind technologies. In addition to the planned development sites detailed above for offshore wind, Scotland is also becoming a key location for test and demonstration facilities in renewable energy development".*

4.1.6 The Paris Agreement

While the CCA, Climate Change (Scotland) Act 2009 and Scottish Government's Climate Change Adaptation Programme provided a strong foundation for Scotland and the UK's national climate change goals, the international community also established targets through The Paris Agreement, as adopted in 2015 by 196 UN member states (including the UK and Scotland) (United Nations

Framework Convention on Climate Change, 2016). The Paris Agreement was the first international legally binding treaty on climate change.

4.1.7 Scottish Energy Strategy

The Scottish Energy Strategy (Scottish Government, 2017) was the driver for Scotland's renewable energy ambitions. As published in December 2017, the Scottish Energy Strategy was designed to provide a long-term vision to guide Scotland's detailed energy policy decisions over the coming decades.

The Scottish Energy Strategy proposed a new 2030 'all-energy' target for the equivalent of 50% of Scotland's heat, transport and electricity consumption to be supplied from renewable sources (Scottish Government, 2017):

> *"While this level of renewables will be challenging, a 50% target represents an ambitious but achievable goal. Setting this target demonstrates the Scottish Government's commitment to a renewable future – and to the continued growth of a successful renewable energy sector in Scotland".*

4.1.8 Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 was passed by Scottish Parliament in September 2019 and received Royal Assent in October 2019. This Act amends the Climate Change (Scotland) Act 2009, enshrines updates to the greenhouse reduction targets set out in the Climate Change (Scotland) Act 2009, while also making provisions for advice, plans and reports in relation to those targets, with the objective of Scotland contributing to the world's efforts to deliver on the Paris Agreement.

New targets were set, including the following GHG emission reductions:

- 55% by 2019;
- 56% by 2020;
- 75% by 2030; and
- 90% by 2040.

Scotland's Climate Assembly (as established in the 2009 Climate Change Act) operated independently of the Scottish Government, bringing together a group of over 100 people who were broadly representative of the Scottish population. Members of Children's Parliament were also invited to support the participation and engagement of younger children across Scotland, to ensure their views, experiences and ideas informed the discussions and recommendations going forward.

Scotland's Climate Assembly published recommendations on Scotland's approach to climate change in June 2021 (Scottish Government, 2021b), with the Scottish Government including relevant actions within their future policy updates and have included consultation and advice to the UK Government to ensure a more wide-reaching benefit of the process.

The CCC published the "Net Zero: The UK's contribution to stopping global warming" document in 2019 (CCC, 2019), where it was recognised that Scotland has a "greater relative capacity to remove emissions than the UK as a whole". Further, the report recommended that there be a 2045 target for net zero in Scotland compared to the 2050 net zero target for the UK. The CCC further assessed

Scotland's performance up to 2019, and it was determined that Scotland's emissions were 51.5% below the 1990 levels, concluding that the 2019 target of a 55% reduction had not been met. The most recent Progress in Reducing Emissions: 2024 Report to Parliament indicates that 2022 target was also missed (CCC, 2024a). In April 2024, the Scottish Cabinet Secretary for Wellbeing Economy, Net Zero and Energy confirmed that the 2030 emissions reduction target was out of reach and future UK carbon budgets will "require sustained increase in the pace and breadth of decarbonisation," (Scottish Government, 2024c).

The CCC recommended that "The UK should set and vigorously pursue an ambitious target to reduce GHGs to net zero by 2050, ending the UK's contribution to global warming within 30 years". It was recognised by the CCC that low carbon infrastructure is essential to accomplishing net zero and an increased deployment of such infrastructure is urgent.

4.1.9 Climate Change Plan

Scottish Government's updated Climate Change Plan (2018) sets out the Scottish Government's pathway from 2018–2032 to achieve new and ambitious targets set by the Climate Change Act 2019 and is a key strategic document on Scotland's green recovery from the COVID-19 pandemic.

4.1.10 Scottish Governments Offshore Wind Policy Statement

The Offshore Wind Policy Statement (Scottish Government, 2020a) demonstrated that the Scottish Government supports and promoted a positive policy landscape for renewables and was willing to commit to a long and positive association with renewables that continues to go from strength to strength and is central to Scotland's green recovery.

Through the Offshore Wind Policy Statement, Scottish Government also suggested a predicted growth of renewable capacity to 11.9 GW.

4.1.11 Scotland's Sectoral Marine Plan for Offshore Wind Energy

Scotland's Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020b), which builds on Section 11 of the 2015 National Marine Plan, identified sustainable plan options for the future development of commercial-scale offshore wind energy in Scotland, including deep water wind technologies, and covers both Scottish inshore (Scottish territorial waters or within 12 NM from shore) and offshore waters (extending out to the Exclusive Economic Zone limit). This is being updated to provide the planning framework for both the Scotwind and INTOG leasing rounds. The Plan is due to be published in Autumn 2024.

The SMP identified 15 Plan Options, split across four regions which can generate several GWs of renewable energy:

> *"This Plan seeks to contribute to the achievement of Scottish and UK energy and climate change policy objectives and targets, through the provision of a spatial strategy to inform the seabed leasing process for commercial offshore wind energy in Scottish waters, which:*
>
> - *Minimises the potential adverse effects on other marine users, economic sectors and the environment resulting from further commercial-scale offshore wind development; and*
> - *Maximises opportunities for economic development, investment and employment in Scotland, by identifying new opportunities for commercial scale offshore wind development, including deeper water wind technologies. This Plan was developed to ensure consistency with the objectives and principles set out within Scotland's National Marine Plan."*

4.1.12 Scotland's Sectoral Marine Plan for INTOG sites- Initial Plan Framework

The Scottish Government has developed the SMP for Offshore Wind Energy for INTOG sites – Initial Plan Framework which provides unique opportunities to further deliver a Just Transition and assist the oil and gas sector in meeting the commitments of the North Sea Transition Deal. It set the planning framework and the areas of seabed that formed the spatial footprint for the CES leasing process.

The INTOG leasing round was established to allow future OWFs to provide low carbon electricity to power oil and gas infrastructure. Two types of project were included:

- 'IN' – small scale innovative projects of less than 100 MW; and
- 'TOG' – Targeted Oil & Gas projects connected directly to oil and gas infrastructure, to provide electricity and reduce the carbon emissions associated with production.
- For IN projects, the planning and leasing process will allow a number of projects to proceed up to a total 500 MW generating capacity. Individual projects under this category should not exceed 100 MW potential generation capacity.

For TOG projects, the IPF identified 9 areas with the core objective to electrify oil and gas assets. Accordingly, up to a total of 4 GW generating capacity is allowed under the planning process, the 4 GW capacity limit at the planning stage does not account for possible attrition of projects. With the maximum potential capacity under the Lease agreements being 5.7 GW.

4.1.13 British Energy Security Strategy

The primary policy responsible for ensuring the security of supply throughout the UK is the British Energy Security Strategy (BESS) (HM Government 2022). This policy paper focuses not only on the need for decarbonisation but the route to energy security and how it can be achieved throughout the UK (including Scotland).

One of the primary outcomes of the BESS for offshore wind, was the establishment of a target of 50 GW of offshore wind power by 2030 (with the potential for further increase to 60 GW as proposed by the new UK Government), building on the initial 40 GW target established within the 2020 UK Energy White Paper Powering our Net Zero Future (HM Government, 2020), which also established that offshore wind is the most critical technology required to deliver the required electrification for mitigating climate change.

4.1.14 North Sea Transition Deal

The North Sea Transition Deal (NSTD), established in March 2021 is a sector wide deal between the UK Government and the oil and gas industry which aims to facilitate the decarbonisation of the oil and gas sector. Key commitments of the deal include setting early emissions reductions targets and investing up to £16 billion by 2030 to reduce sector carbon emissions, a commitment to secure up to 40,000 energy jobs, reduce emissions by up to 60 million metric tonnes and ensure that local content accounts for half the inputs into new energy projects (BEIS, 2021).

4.1.15 Intergovernmental Panel on Climate Change (IPCC) Assessment Reports

The IPCC's 6th assessment cycle took place between October 2015 and July 2023, during which time the 6th Assessment Report (AR6) was produced (IPCC, 2022), resulting in the publishing of three working group documents in August 2021, February 2022, and April 2022 respectively, with a Synthesis Report published in March 2023 (IPCC, 2023). The headline statements from that report are:

- Between 2011 and 2020 the global surface temperature raised by 1.1°C compared to 1990 levels due to increasing GHG emissions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals;
- Based on Nationally Determined Contributions as of October 2021, it is clear that the amount of global GHG emissions in 2030 make it likely that warming will exceed 1.5°C during the 21st century, which will make it difficult to limit warming below 2°C;
- There are gaps between projected emissions from implemented policies and those from Nationally Determined Contributions and finance flows fall short of the levels needed to meet climate goals across all sectors and regions.
- Every increment of global warming will intensify multiple and concurrent hazards, and deep, rapid, and sustained reductions in GHG emissions would lead to a discernible slowdown in global warming within around two decades, and also to discernible changes in atmospheric composition within a few years;
- Projected CO2 emissions from existing fossil fuel infrastructure will exceed the remaining carbon budget for 1.5°C;
- Rapid, deep and immediate reductions in GHG emissions across all sectors is required this decade to meet any of the modelled scenarios keeping warming below 1.5°C and 2°C; and
- If warming exceeds 1.5°C, then the only way of reducing warming is to achieve and sustain net negative global CO2 emissions, relying on the removal of CO2 from the environment which has additional feasibility concerns.

It is considered within the IPCC assessment report that Global GHG emissions must peak before 2025 and be reduced by 43% by 2030 in order to limit warming to around 1.5°C. Major changes in the energy sector are required to lead this reduction, primarily a reduction in fossil fuel usage, widespread electrification, improved energy efficiency and the adoption of alternative fuels.

4.1.16 National Policy Statements (NPS)

The UK has published NPS', which are statements explaining, justifying and accounting for UK Government policy in relation to the mitigation of and adaptation to climate change. The NPS' are primarily applied to England and Wales, however as all energy policy is a reserved matter for UK ministers, the content of the NPS' is still relevant for consideration in Scottish planning decisions.

4.1.16.1 Overarching National Policy Statement for Energy (EN-1)

The UK Government's Overarching National Policy Statement (NPS) for Energy (EN-1), as issued by DESNZ, sets out national policy for energy infrastructure and is part of a suite of NPSs issued by the Secretary of State for Energy Security and Net Zero (HM Government 2024).

EN-1 sets out the UK Government's policy for the delivery of major energy infrastructure which includes renewable electricity generation (both onshore and offshore) as covered in the NPS for Renewable Energy Infrastructure (EN-3) (HM Government 2024). Of particular relevance to the derogation provisions for the Project, EN-1 concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure, which includes offshore renewable generation such as offshore wind. It is important to note that while the CNP status of offshore wind generation does not generate an additional need atop that already established for renewable energy infrastructure, is an important aspect of the planning balance to be considered by the Scottish Ministers.

4.1.16.2 National Policy Statement for Renewable Energy Infrastructure (EN-3)

EN-3, taken together with EN-1, provides the primary policy for decisions on applications received for significant renewable energy infrastructure.

NPS EN-3 provides a mechanism for delivery of the BESS (HM Government 2023a), which sets out a series of bold commitments to deliver a more independent, secure, and affordable energy system.

Section 2.8 of NPS EN-3 reiterates the UK Governments expectations, as set out in the BESS, that offshore wind (including floating wind) will play a significant role in meeting demand and decarbonising the energy system, and the ambition to deploy up to 50 GW (potentially 60 GW under the new UK Government) of offshore wind capacity (including up to 5 GW floating wind) by 2030, with an expectation that there will be a need for substantially more installed offshore capacity beyond this to achieve net zero carbon emissions by 2050.

To meet these objectives, the UK Government considers that all offshore wind developments are likely to need to maximise their capacity within the technological, environmental, and other constraints of the development.

4.1.17 Emerging Legislation and Policy

4.1.17.1 Scotland's National Marine Plan 2 (NMP2)

Scotland's NMP2 will provide a replacement of the original NMP published in 2015, as reviewed in 2018 and 2021. Previous reviews concluded that there is an urgent need to tackle the twin crises of climate change and biodiversity loss, as well as a need to reflect significant emerging matters, which have become core drivers for developing a new national marine plan.

The decision to update and replace the existing NMP was formally announced by Ministers in Parliament in October 2022 and in the Programme for Government 2022-23. The Marine Directorate are currently preparing the updated NMP2, which, as with the first NMP, will cover Scottish territorial waters (0-12 nautical miles) and Scottish offshore waters (12-200 nautical miles) (Scottish Government, 2022c):

> *"Effectively managing how we use our marine space is critical in our transition to net zero by 2045, the achievement of our national and international biodiversity commitments and to maximise the opportunities a blue economy approach can deliver for our environment and communities".*

"In Programme for Government 2022-2023, we announced our intention to start the process of developing a new National Marine Plan (NMP), to "address the global climate and nature crises by carefully managing increased competition for space and resources in the marine environment".

NMP2 is expected to be adopted in late 2024/2025 following detailed assessment and extensive stakeholder engagement.

4.1.17.2 Energy Strategy and Just Transition Plan

The draft Energy Strategy and Just Transition Plan (Scottish Government, 2023) provides clarity on how Scotland will prepare for a just energy transition and sets a vision for Scotland's energy system to 2045 and a route map of ambitions and actions that, coupled with detailed sectoral plans and the forthcoming Climate Change Plan, will guide decision-making and policy support over the course of this decade.

The Energy Strategy and Just Transition Plan is expected to be adopted by Scottish Government in early in 2025.

4.1.17.3 The (Updated) Sectoral Marine Plan (SMP)

The updated SMP will provide the planning framework for both the ScotWind and Innovation and Targeted Oil & Gas leasing rounds.

It is expected that consultation on a draft updated plan will commence in Autumn 2024 and a final plan will be adopted by Spring 2025.

4.1.17.4 Great British Energy Bill

On 25th July 2024, the UK Government introduced the Great British Energy Bill to Parliament. The Bill aims to deliver on one of the new government's first steps for change by setting up Great British Energy (GBE), a publicly owned company headquartered in Scotland to invest in clean, home-grown energy (UK Government's Department for Energy Security and Net Zero (DESNZ), 2024).

According to DESNZ, GBE will be backed by a capitalisation of £8.3 billion and will own, manage and operate clean power projects. It will be a company that will generate energy in its own right, working in partnership with the private sector for the good of the country. GBE will work closely with industry, local authorities, communities and other public sector organisations to help accelerate Britain's pathway to energy independence.

That means installing thousands of clean power projects across the country, crowding in investment for next-generation technologies, and providing vital support to accelerate large-scale projects, with the intention of getting windfarm projects that could generate between 20GW and 30GW of offshore power to lease stage by 2030.

In a forwarding statement, the DESNZ Secretary said:

"Great British Energy comes from a simple idea - that the British people should own and benefit from our natural resources. Investing in clean power is the route to end the UK's energy insecurity, and Great British Energy will be essential in this mission." Ed Miliband, July 2024.

4.2 Climate change, net zero and decarbonisation

4.2.1 The climate emergency

Climate change is affecting nature, people's lives and infrastructure everywhere. It's dangerous and pervasive impacts are increasingly evident in every region of our world. These impacts are hindering efforts to meet basic human needs, and they threaten sustainable development across the globe (IPCC 2023). Climate change is not a recent phenomenon, with international summits and agreements being held and established for several decades (listed in Section **Error! Reference source not found.**). These are organised by the United Nations (UN). The first piece of legally binding international policy reflecting the climate change emergency was The Paris Agreement, as adopted in 2015 by 196 UN Member States, including the UK and, therefore, Scotland.

The Member States signed up to the Paris Agreement agreed to the following:

- A long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels;
- An aim to limit the increase to 1.5°C since this would significantly reduce risks and the impacts of climate change;
- The need for global greenhouse gas (GHG) emissions to peak as soon as possible; and
- Undertake rapid reductions thereafter in accordance with the best scientific guidance available.

Given the significance of this agreement, all subsequent Scottish and UK policies and legislation relating to the mitigation of climate change are based on The Paris Agreement.

The Sixth Assessment Report (AR6) was published by the Intergovernmental Panel on Climate Change (IPCC), in parts between August 2021 and March 2023. It is the latest set of IPCC reports that assess the scientific knowledge on climate change including our past present and future climate, its impacts and future risks, and options for adaptation and mitigation. The reports inform policymakers about climate change. They are an important resource for society, domestic policy making and global climate negotiations. The key messages from AR6 include the following:

- Without urgent and large-scale reductions in GHG, limiting warming close to 1.5°C or even 2°C will be unattainable;
- Any delay in concerted global action will result in the loss of a liveable future;
- Global GHG emissions must peak before 2025 and be reduced by 43% by 2030 in order to limit warming to around 1.5°C; and
- Major changes in the energy sector are required to lead this reduction, primarily a reduction in fossil fuel usage, widespread electrification, improved energy efficiency and the adoption of alternative fuels.

The main conclusion of the AR6 report is that there is a chance humanity can combat climate change in the timescale required, however as of the time of the report, it was increasingly unlikely. A rapid and immediate transition to non-fossil fuel energy sources is considered the best way to counter climate change within the timescales required.

4.2.2 Decarbonisation

Decarbonisation in this context refers to the act of reducing the carbon footprint of energy use throughout Scotland and the UK. Reducing the amount of GHG produced will greatly help to minimise the warming effect caused by anthropogenic activities. It is considered that the only way to truly achieve net zero, is by urgently increasing the use of renewable energy and removing the release of GHG as a byproduct from other hydrocarbon-based energy sources.

However, given the nature of the large scale of the infrastructure required for renewable energy projects (nuclear power stations, OWFs, solar farms, etc.), it takes a significant amount of time for projects to be developed, often up to a decade for the full process from inception to generation. Therefore, it is considered that given the current and increasing significant threat of climate change and the 2045 net zero target in Scotland, there is an urgent need to develop as many operational renewable energy projects as possible, in as short a period of time as possible. The scale of decarbonisation within Scotland is established through the draft Energy and Just Transition Plan (Scottish Government, 2023). This document sets out clear strategies, policy positions and a route map of actions to provide focus towards the government targets. There is a significant focus on the transition to net zero, including key considerations of affordability, community benefits and ownership for local communities. While this transition can be led by the Scottish Government, there are several key aspects that the UK Government is responsible for and action is required, including the following general points:

- Increasing support for households who rely on alternative fuels and struggle to pay current bills;
- Introducing a windfall tax on all companies benefiting from significant higher profits; and
- Maximising community benefits from renewable energy developments to encourage shared ownership.

Furthermore, the following points relate specifically to offshore wind energy:

- Improvements to the licensing and consenting system to allow an increased pace of development in Scottish waters; and
- A reform to the existing Environmental Impact Assessment (EIA) and HRA processes to reduce the time it takes for projects to achieve consent.

Given the nature of the large-scale infrastructure required for renewable energy projects (nuclear power stations, OWFs, solar farms, etc.), it takes a significant amount of time for projects to be developed, often up to a decade for the full process from inception to generation. Therefore, it is considered that given the current and increasing significant threat of climate change and the 2045 net zero target in Scotland, there is an urgent need to develop as many operational renewable energy projects as possible, in as short a period of time as possible.

4.2.2.1 Net zero

The urgency of climate action has been recognised on a national level as well as international, with the Scottish Government officially declaring a ‘Climate Emergency’ in April 2019 (Climate Emergency Declaration, 2019). Scotland’s ambitious climate change legislation sets a target date for net zero emissions of all greenhouse gases by 2045.

The legal obligations to achieve net zero for Scotland and the UK have been enforced through additional legislation, namely:

- Climate Change (Scotland) Act 2009, as amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019; and
- The Climate Change Act 2008, as amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019.

The targets for net zero are set to 2045 and 2050 in Scotland and the UK respectively. Additional interim targets are also in place, including a 75% reduction target by 2030 and 90% by 2040 within Scotland. However, the Climate Change Committee (CCC) concluded in 2024, that the 2030 target of 75% emission reduction is no longer credible (CCC, 2024b), and following this assessment the Scottish Government abandoned this target, solely focusing on the 2045 net zero target (Scottish Government, 2024)

Furthermore, the need for the Project is greater than just the established targets, it is widely accepted that countries must go above and beyond their own national targets to try and counter climate change as quickly as possible, for the sake of the global population.

4.2.2.2 Oil and gas industry emissions

The fuel supply sector contributed 7% of total UK emissions in 2022 (CCC, 2023). Emissions came predominantly from fossil fuel supply, with small contributions from hydrogen production and bio energy supply. The UK's fuel supply emissions increased by 6% in 2022 to 33 MtCO2e. This was due to an increase in oil and gas production in 2022 following a period of low production in 2021, due to the pandemic and maintenance periods. In 2021, approximately 70% of all offshore upstream oil and gas industry emissions were the result of the combustion of either natural gas or diesel for fuel.

Historically, emissions in fossil fuel supply have decreased steadily by 3% per year on average since 1990. However, these reductions have been primarily due to the decline of fossil fuel extraction, rather than direct measures taken to decarbonise the sector.

As part of the North Sea Transition Deal, the Government committed to reduce emissions in the oil and gas industry to 50% below 2018 levels by 2030, and reaffirmed its commitment to the target in its Carbon Budget Delivery Plan (HM Government 2023b). The North Sea Transition Authority (NSTA) has confirmed that it views this as representing a minimum level of ambition, which industry should aim to surpass (NSTA 2022). The oil and gas sector is not on track to meet the 2030 target on the current trajectory.

The electrification of oil and gas platforms, the role that this Project will have in that, will be key to meeting this target and the NSTA announced its ambitions to have at least two electrification projects commissioned by 2027.

4.2.2.3 INTOG

Targeted Oil & Gas decarbonisation projects are critical and beneficial for the Governments net zero commitments and are essential to develop the floating offshore wind supply chain. By providing electricity to the oil and gas assets, they will remove the direct pollution component of these activities for the remaining lifetime of the asset and facilitate green decommissioning activity.

The development of offshore wind is driven by the need to limit the magnitude and impacts of climate change. The earlier that steps towards decarbonisation are introduced, as established in Section **Error! Reference source not found.**, the greater their contribution to limiting climate change will be. Following on from the consented Green Volt offshore windfarm, the Project is the most

progressed INTOG site capable of supporting the decarbonisation of the oil and gas industry's North Sea operations.

Furthermore, the timeframe available for securing the benefits from decarbonising the operation of O&G platforms is limited and reducing due to the diminishing life remaining for the extraction of oil and gas from Scottish waters. Therefore, a key aim of the Project is to be operational at the earliest date possible in terms of decarbonising oil and gas infrastructure and the Scottish electricity supply. Many of the oil and gas platforms that this Project may serve may also have a limited operational life. Therefore, to meet the pressing need for the decarbonisation of the oil and gas industry, it is important for rapid consent and construction of INTOG projects such as Cenos Offshore Windfarm.

Furthermore, The British Energy Security Strategy (HM Government, 2022) committed to an increase in North Sea oil and gas production to reduce the UK's dependency on imports and with a view to reducing prices to consumers. In line with this commitment, the North Sea Transition Authority launched a new licensing round for oil and gas projects which includes the central North Sea region. The Project would be available to power future oil and gas platforms should any be consented within the vicinity of the OSCPs.

The Project will generate up to 1.35 GW of electricity which will be used to electrify oil and gas assets for their remaining lifetime, with any spare capacity going to the grid. The Project, when in place, will also provide the opportunity for additional renewable electricity capacity for electrification of future oil and gas platforms resulting from any new licensing round. This strongly aligns with NSTA's position on platform electrification.

4.2.2.4 How decarbonisation has been achieved to date

GHG emissions within the UK had decreased by 52.7% in 2023 when compared to 1990 (**Error! Reference source not found.**, DESNZ, 2024). This change was driven by a reduction in gas demand from the electricity supply. Greenhouse gas emissions from UK electricity generation fell by 19.6% (10.8 million tonnes of carbon dioxide equivalent (MtCO2e)) in 2023, primarily due to higher electricity imports from France, unlike 2022 when the UK had higher than usual exports, meaning less gas was needed to meet the electricity demand, which has also been continuously declining (DESNZ, 2024).

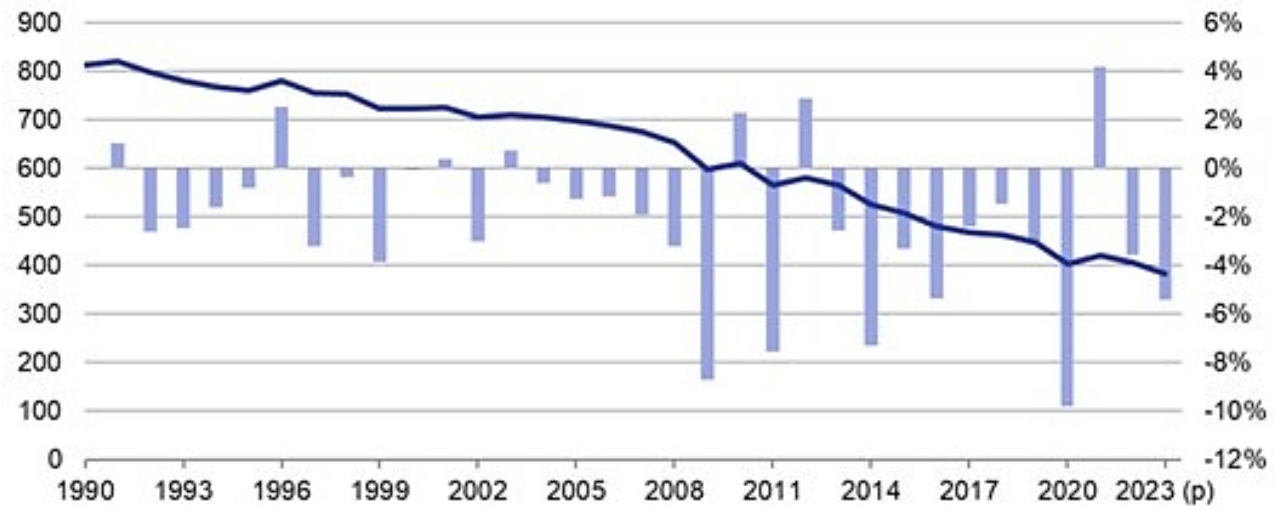

Figure 4-1 UK GHG emissions between 1990 and 2023 (DESNZ, 2024) NOTE: L axis: Total GHG emissions MtCO2e (dark blue line), R axis: Year on Year change (light blue bars) X Axis: Year).

The change is primarily caused by a reduction in the amount of power that has been produced from coal and gas-powered power stations, for example the Large Combustible Plant Directive (as updated in 2010 to Version 3, Defra, 2010) was introduced to manage the emissions from large combustion plants to help minimise environmental damage and has led to a significant amount of decommissioning of older coal and gas plants throughout the UK. Scotland's last coal fuelled power station closed in 2016, alongside the 11.5 GW of coal fired power stations that were decommissioned between 2012 and 2015. The UK's last coal-fired power station, Uniper's Ratcliffe-on-Soar near Nottingham, closed in September 2024 ending 140 years of coal-fired generation in the UK marking a key milestone in the UK's journey to cleaner power.

Other sectors also reduced emissions, with emissions from buildings and carbon generating products having fallen by 6.2% (5.1 MtCO2e) in 2016, with high energy prices likely to have been a factor in reduced gas use for heating buildings. Industry sector emissions also fell by 8% (4.6 MtCO2e), largely due to reduced fuel consumption in the iron and steel industry.

There was also a 1.4% (1.6 MtCO2e) fall in greenhouse gas emissions from domestic transport. Compared to 2019, the most recent pre-pandemic (COVID-19) year, domestic transport emissions are down 11.1%. Domestic transport remains the largest source of emissions in the UK, accounting for 29.1% in 2023 (DESNZ, 2024).

In addition to sectors reducing their GHG emissions through decreased gas use, the electricity supply from other sources has increased. In 2020, 97% of Scotland's gross electricity consumption was provided from renewables (

Figure 4-2; Scottish Renewables, 2024).

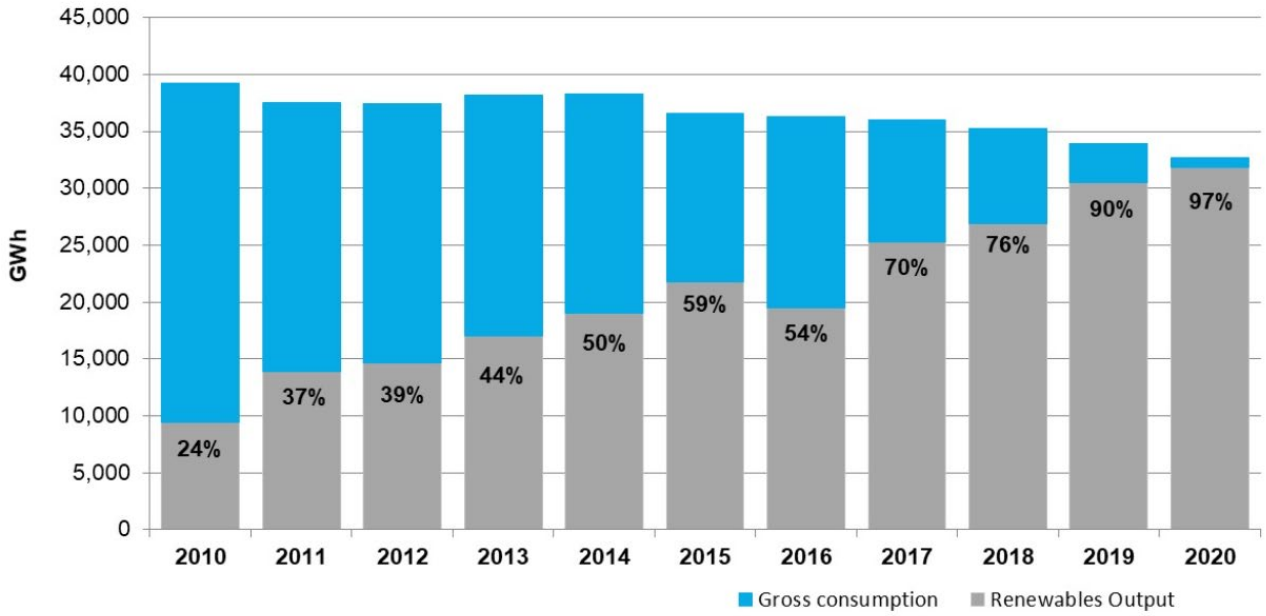

Figure 4-2 Scottish gross electricity consumption (GWh) and percentage renewables output (Scottish Renewables, 2024)

The energy mix has changed significantly since 2010, from nuclear power, coal and gas dominating in 2010, to renewables dominating as of 2018, with nuclear power in a close second (

Figure 4-3, Scottish Renewables, 2024).

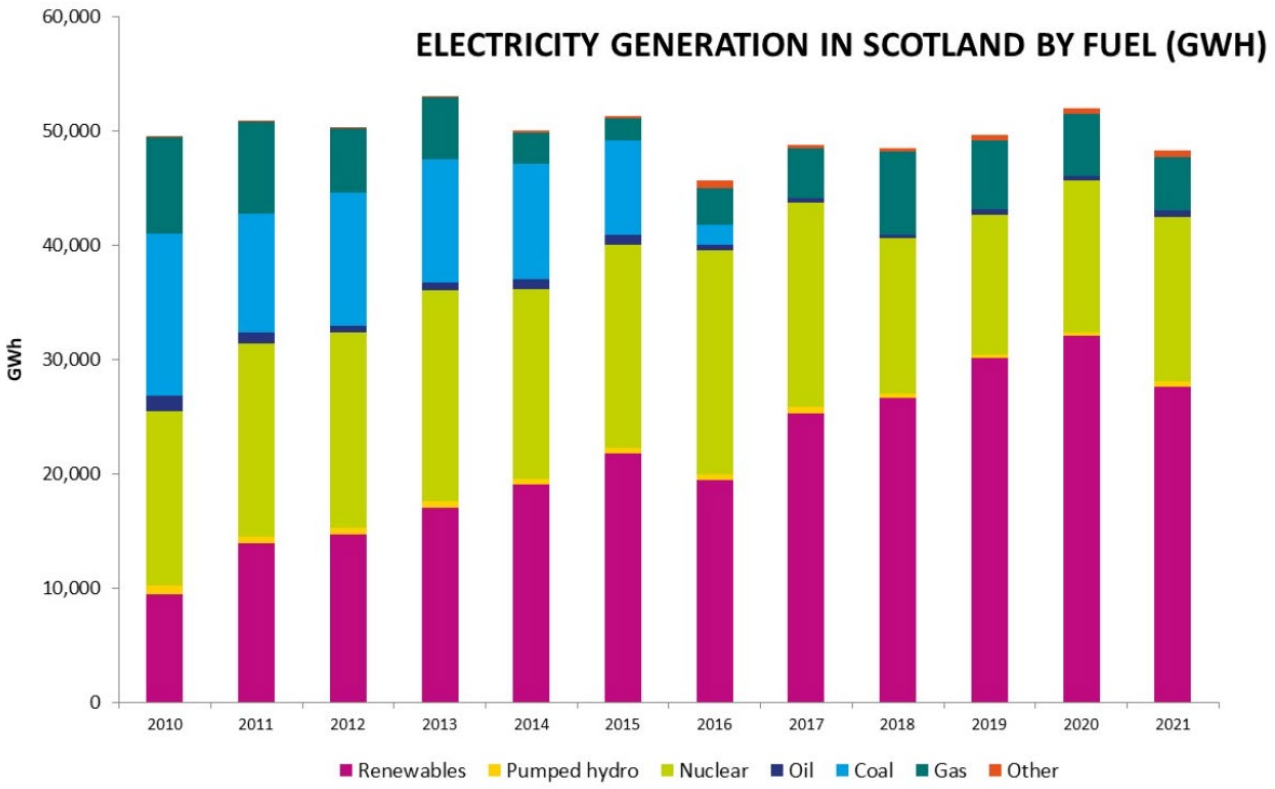

Figure 4-3 Electricity generation in Scotland by fuel (Gwh) (Scottish Renewables, 2024)

4.2.2.5 Offshore wind and decarbonisation

Offshore wind is a critical and essential part of future renewable energy generation throughout the UK and Scotland. The need for electrification to achieve decarbonisation will only grow to meet Scotland's legislative net zero targets, and the need for growth is clear. Offshore wind is a proven low-carbon generation asset that can be deployed at scale and is anticipated to become a significant source of decarbonisation throughout Scotland and the UK.

The National Grid Electricity System Operator (NGESO) has produced reports on the predicted energy supply throughout the UK (NGESO, 2023) and all of the scenarios presented in that report that would enable the UK to meet net zero (all aside from the 'Falling Short scenario', where net zero emissions are not achieved by 2050) demonstrate a significant increase in renewables, and specifically offshore wind. With 39% of the UK's wind resource (Scottish Government, 2023), Scotland is uniquely placed to provide a significant amount of the offshore wind generation capacity required to support future energy demand.

Whilst it is acknowledged that other technologies will be necessary to supplement offshore wind capacity (including nuclear, solar and tidal energy, as well as hydrogen fuels), the commercial, technical and legal feasibility of these technologies suggest that they are not reliable enough to be the basis of the UKs energy mix through to 2050. .With the infrastructure that is already in place and the technological advancements made within the field of offshore wind farms, it is considered that offshore wind farms such as the Project are the renewable energy source which will lead the way to achieving the UK and Scotland's legislative targets.

Therefore, it is considered that offshore wind developments should be prioritised and progressed with urgency to ensure the best possible future for Scotland and the UK with respect to decarbonisation and overall increases in energy supply.

4.2.2.6 Floating offshore wind farms

Bottom-fixed foundations are currently the main technology used within offshore wind farms. However, they are limited in where they can be constructed as they require relatively shallow waters for installation to be successfully undertaken. Floating offshore wind farms, however, can overcome this limitation and be deployed in deeper waters, providing more opportunities for development. Floating substructures (owing to being able to be deployed in deeper water depths further from shore) can eliminate visual impacts from shore and can offer benefits over conventional fixed foundations in terms of reduced construction and installation costs.

With the Scottish Government targeting net zero by 2045 (Scottish Government, 2023) and 11 GW of offshore wind by 2030 (Scottish Government, 2020) and the UK Government targeting net zero by 2050 and aiming to generate 50 GW of offshore wind generating capacity by 2030 (potentially 60 GW under the new UK Government), including up to 5GW of floating wind (HM Government, 2022). Floating wind will be key in accelerating the rate of decarbonisation throughout the UK and Scotland, as it allows access to a significantly greater amount of wind resource than would be available if limited to shallow waters. This enables wider regions of seabed to be exploited, providing many advantages to different areas of Scotland, including additional areas within the ScotWind and INTOG lease options.

Many trials of floating projects have been undertaken, which demonstrates the potential of the technology. This includes the world's first floating windfarm, the 30 MW Hywind Scotland Pilot Park, which has been operational since 2017 and Kincardine Offshore Wind Farm operational in 2021 and currently the world's largest floating offshore wind farm, with a capacity of 50 MW . It is considered that not only will the use of floating technologies allow access to an increased quantity of available sites, but it may also increase the capacity of existing sites, where floating wind technology can be combined with fixed foundation technology to utilise parts of the seabed that are not suitable for fixed foundations.

The Offshore Renewable Energy Catapult anticipate that the first large-scale and commercially viable floating offshore project within the UK will be deployed around 2030, which aligns with the timescales of the Project.

4.2.2.7 Scotland's energy requirements

The UK has an exceptional amount of potential wind resource, and Scotland itself has 39% of the UK's wind resource capacity, and approximately 5% of European and 1% of global installed wind capacity (Scottish Government, 2023). Therefore, it is considered that Scotland has an exceptional resource to generate an abundance of affordable electricity. Due to this significant volume, it is considered that capitalising on this resource would add a significant amount of energy to the system, therefore increasing the overall resilience and security of Scotland's energy supply.

Scotland's focus on renewable energy sources has the potential to increase Scotland's annual generation of electricity beyond its current and predicted usage, with it being anticipated to be more than three times greater by 2045. The CCC state that to accomplish the doubling of supply using low-carbon sources, a total of around 15 GW of offshore wind will be required in Scotland, and around 75 GW will be required to triple supply by 2045.

The INTOG leasing round, of which the Project is a part of, combined has proposed up to 6.2 GW of additional capacity (5.7 GW cap in total for TOG projects and 500MW cap for IN projects). Figure 4-4 shows the predicted electricity generation capacity of Scotland in time for net zero by 2045, and the significant expected contribution from renewable energy sources.

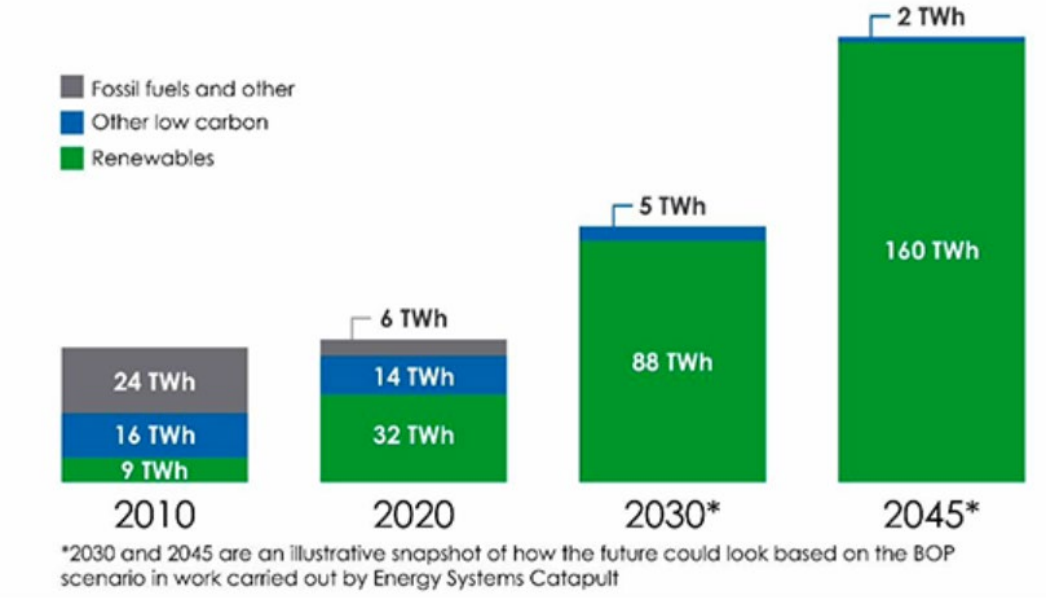

Figure 4-4 Predicted electricity generation capacity in Scotland (Scottish Government, 2023)

The NGESO Future Energy Scenarios (National Grid ESO, 2023) present different possible options for how the future energy supply will look for Scotland based on the demand, and any changes in government policies. However, they are not the only metric and are not completely flawless themselves as they do not factor in consented capacity, only operational. Further, they do not discuss the capacity for delivery of supply from the various sources, as they only consider the functional and operational capacity within Scotland. However, even with those limitations, they provide a good understanding of the potential pathways leading to different outcomes regarding climate change and net zero.

The Future Energy Scenarios reports have consistently highlighted the need for increased capacity within the UK, and the more reports that are published, the more the need for offshore wind is emphasised. They have consistently reported that the amount of energy fed into the UK grid from offshore wind farms is consistently high/ stable. This provides a strong evidence base to the reliability of offshore wind going forward on top of evidencing the high reliability of large-scale offshore wind projects in the long-term.

Within the Future Energy Scenarios report, the UK will reach it's 2050 net zero target in three of the four modelled scenarios, one scenario reaching net zero in 2046, and two in 2050. The report considers that moving away from fossil fuels is key to achieving the successful future scenarios, with offshore wind making up 24.6% of the capacity even in the failing scenario (Falling Short), and 29.2% in the most successful scenario (Leading the Way) (Figure 4-5).

It is also concluded that the UK's installed electrical generation capacity needs to reach between 156 and 209 GW by 2030 to meet the anticipated demand. Not only does the capacity need to increase, but 70% of it needs to be from the UK's own renewable/low-carbon sources to meet the UK's net zero targets. The NGESO predicts that a further 7-9% will come from low-carbon imported sources, leaving between 9 and 17% of the required energy supply to be from traditional, high-carbon sources.

Regardless of the scenario and how it has been modelled, there is a significant increase in offshore wind required in the immediate future, with it providing the majority of energy supply not just to Scotland, but to the whole UK by 2045/2050 to meet the net zero targets.

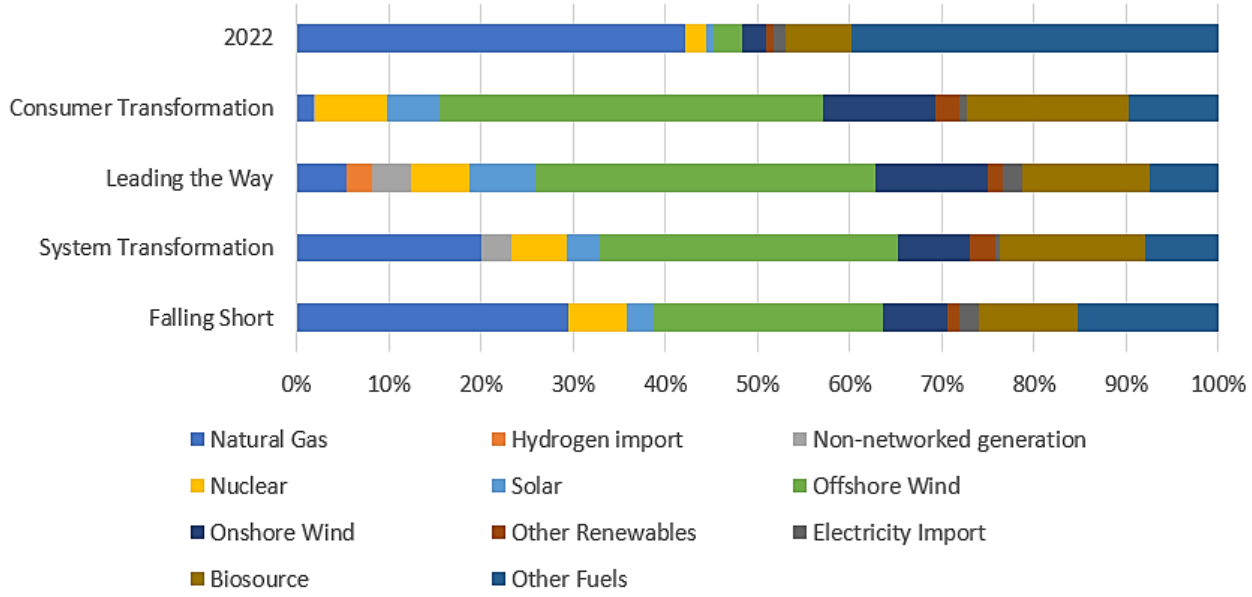

Figure 4-5 Generation sources for UK energy supply (adapted from NGESO, 2023)

4.2.3 The energy gap

There is currently a gap between the decarbonisation policies in place, and the pathway required to limit warming to 1.5°C, as illustrated in Figure 4-6 (Climate Action Tracker, 2023). The current policies do not appear to be sufficient to meet the required targets and, although renewable energy projects are being deployed at scale, there is still no guarantee of achieving the established net zero targets. Furthermore, considering the global threat of climate change, it is considered that there is no upper limit to the amount of renewable energy projects that should be considered for Scotland, or the UK. It is also considered that all nations should contribute as much as they can to combatting the climate emergency regardless of individual nation policies.

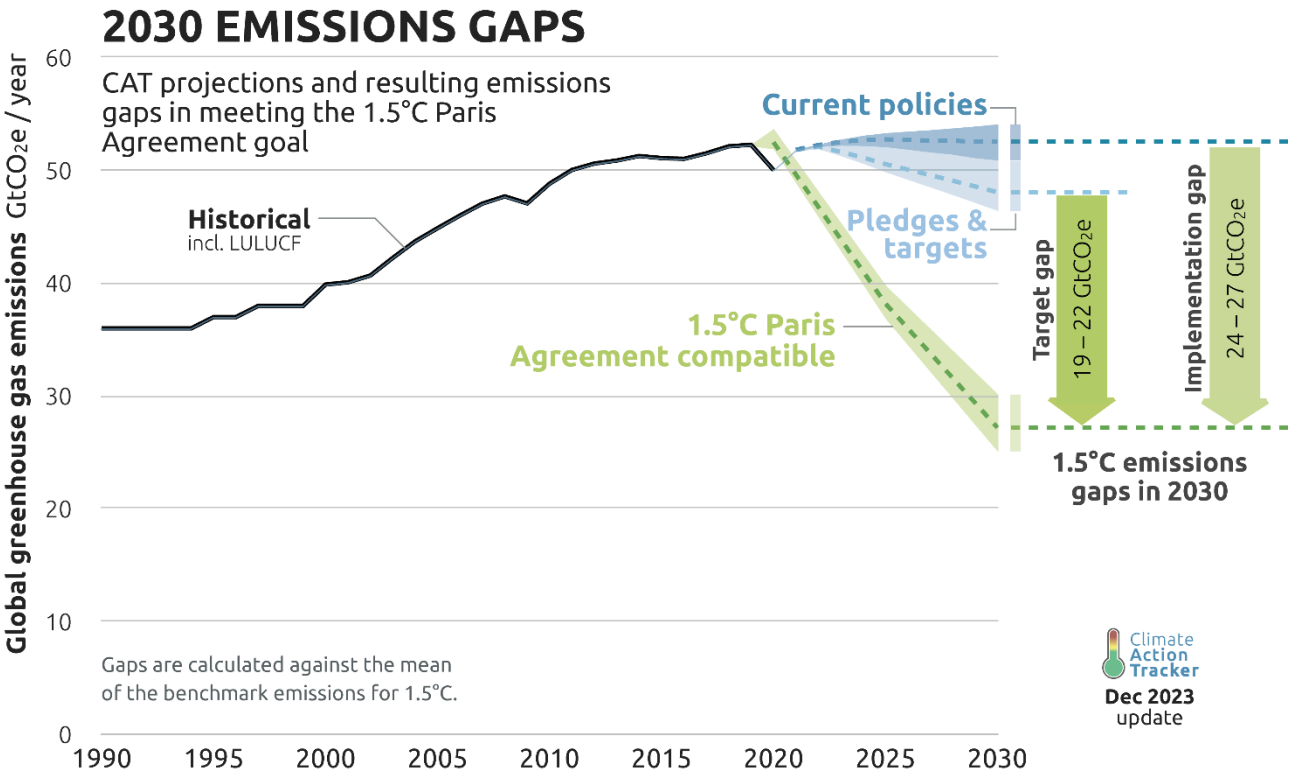

Figure 4-6 The Emission Gap between current policies and the Paris Agreement compliant targets

4.2.4 Need for additional offshore wind deployment

The Crown Estate (TCE) and Crown Estate Scotland (CES) have access to a significant amount of offshore seabed which has the potential for developments. Associated with this, comes a significant amount of offshore wind resource. As the deployment of offshore renewable energy accelerates around the world, floating wind farms are expected to play an increasingly significant role in the global energy mix, with the ability to be anchored in deeper waters than familiar fixed-base turbines. This means that new areas of the seabed can be used for the generation of renewable energy, where wind patterns are stronger and more reliable. The UK is well-placed to take advantage of this exciting new technology, with generations of expertise and experience in the energy market and – more recently – its leading role in offshore renewables. In its Autumn Statement in November 2023 (HM Treasury, 2023), the UK Government confirmed its intention to unlock space for a further 12GW of capacity in the Celtic Sea.

There is a significant amount of Scottish and UK Government policy setting out the need for large scale offshore wind, including:

- Energy White Paper (HM Government, 2020) – evidences the need for renewable energy and specifically offshore wind with respect to climate change and legislative targets;
- British Energy Security Strategy (HM Government, 2022) – setting a target of 50 GW of offshore wind by 2030;
- Overarching National Policy Statement for Energy (EN-1) – sets out the UK Government policy on the need for large scale projects to deliver the UK's energy targets;
- National Policy Statement for renewable energy infrastructure (EN-3) – sets out the imperative need for electricity generation from renewable sources, with specific reference to

the key role of offshore wind, as an essential element for the transition to net zero and meeting statutory targets;

- Offshore Wind Policy Statement (Scottish Government, 2020) - targeting 11GW of offshore wind capacity by 2030;
- Scotland's National Marine Plan (Scottish Government, 2015) - includes the objectives of developing more offshore wind, including contributing to the 2030 decarbonisation target of 50g CO2/kWh;
- SMP – offshore wind for innovation and targeted oil & gas decarbonisation: initial plan framework (Scottish Government, 2022a) - identifies nine Targeted Oil & Gas Decarbonisation Plan Option areas split across three regions in Scottish waters (East, West of Shetland and North East), with a potential generation capacity of 4 GW of renewable energy. Using previous industry benchmarking, a 30% rate of attrition during development, 5.7GW is applied as a cap to the amount of seabed available under the CES Option Agreement to ensure development potential is proportionate for INTOG objectives;
- Scotland's Energy Strategy Position Statement (Scottish Government, 2021c) – considers offshore wind as a key part of the Scottish Energy Strategy in the future, with particular respect given to offshore wind being a priority area for international engagement;
- Net Zero Strategy for the UK (DESNZ, 2022) – Build Back Greener, setting a target that the UK's electricity will come from low carbon sources, including offshore wind by 2035 and net zero by 2050;
- UK Offshore Wind Sector Deal (BEIS, 2020) – deepens the integration between the UK Government and the offshore wind industry, committing to support, guidance and financial systems;
- Electricity System Operator National Grid ESO: Future Energy Scenarios (National Grid ESO, 2023) requirement for 38 – 47 GW offshore wind in 2030, 68 – 83 GW in 2040, and 87 – 113 GW by 2050; and
- Great British Energy Bill (DESNZ, 2024b) - The Bill aims to deliver on one of the new government's first steps for change by setting up Great British Energy (GBE), a publicly owned company headquartered in Scotland to invest in clean, home-grown energy.

It is clear through the wide range of policy regarding offshore wind developments that the deployment of further offshore wind is critical in delivering climate change policy going forward into 2030 and beyond.

Currently, the UK has 14.7 GW of operational offshore wind developments. However, as shown in Figure 4-7 (National Grid ESO, 2023), a significant increase in the amount of offshore wind is required to meet any of the modelled scenarios, even the 'Falling Short' model which still fails to meet the necessary targets. The target for 60 GW of offshore wind to be installed by 2030 is met only in the 'Leading the Way' scenario, including non-networked and networked wind. Therefore, it is considered that there is a significant need to develop offshore wind at scale as soon as possible to ensure that relevant targets are met.

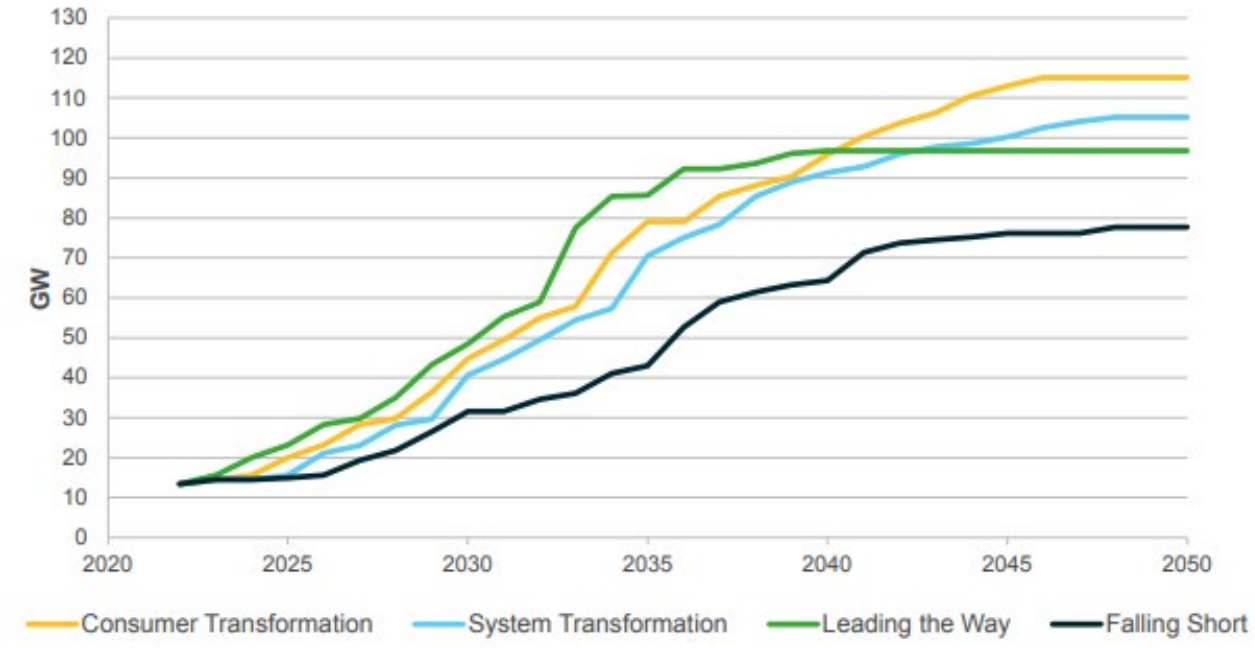

Figure 4-7 Offshore wind capacity in GW, excluding non-networked wind.

Additionally, it is worth noting that while many OWF projects are proposed, not all will be developed through to commercial operation, and several of those that do are likely to be at reduced capacities than initially proposed. Therefore, it is imperative that as many OWF projects are consented as possible, to ensure that Scotland and the UK has the best chance possible to meet relevant policy targets.

It is clear that a significant increase in offshore wind is required to decarbonise Scotland and the UK's energy supply, and it must be done with great urgency to achieve all the relevant targets, both international and national.

4.3 Security of supply

Energy security is an important issue for both the UK and Scotland, and it is considered essential for the health and safety for citizens, on top of increasing prosperity and commercial growth within the country. Energy security has become of much greater concern in the last few years due to both the COVID-19 pandemic and Russia's illegal invasion of Ukraine, which has resulted in a significant increase in the price of imported gas and coal (over 200% and 100% in 2021, respectively).

The Project will primarily decarbonise offshore oil and gas platforms in the first instance with spare capacity going directly to the grid and, following decommissioning of oil and gas platforms, the Project will continue to supply energy to the GB grid. Therefore, this Project forms an important part of the energy security solution.

Given the nature of the UK grid, the energy sourced from Scottish Waters will be exported to other parts of the UK and vice versa. Therefore, while Scotland has its own decarbonisation and development targets, a wider UK context must be considered when assessing availability and security of energy.

The most imperative aspect of energy security is ensuring that there is enough electricity within the UK-wide system to cover the peak demand, including any unexpected increases in usage, with adequate additional energy to account for any losses in input (e.g., closure of a power station). While currently there is technology able to store the generated energy during times of low usage/ over-

production so that it may be released when usage is higher than anticipated, with the increasing electricity demand across both the UK and Scotland, increases in the number of sources is key to improving the resilience of the system.

In addition to increasing the supply of electricity, the type of energy is an important aspect to consider for security. Recent world events (e.g., COVID-19 pandemic and Russia's invasion of Ukraine) have demonstrated the significance of the UK's reliance on imported hydrocarbons specifically. Given the renewable energy resource within the UK, it is considered that the move to renewable sources within the UK is urgent for climate change, decarbonisation, political stability and a reduction in dependence on foreign states.

It is therefore considered that having a diverse range of sources is imperative to energy security, with a variety of sources adding resilience to the system, ensuring that if there is a loss of one source, there are enough alternatives to fill the gap. Given the current reliance on fossil fuels within the UK, it is considered that the increased development of alternative sources, including renewable electricity, is key to increasing the diversity of UK supply. Given the resources available in Scotland and the UK, the infrastructure already in place and the ability to deploy at scale, it is considered that solar and wind will make up the majority of the renewable sources to be used to achieve net zero.

With offshore wind generation already well established in Scotland and an existing transmission system able to input this capacity into the grid, increasing Scottish offshore wind generation would be a logical method of reducing Scotland's reliance on imported sources. Scotland is also focusing on decarbonisation to achieve net zero by 2045, which is faster than the UK Government targets of net zero by 2050 and this increase in offshore wind generation would only benefit this.

4.4 Affordability of supply

It is stated within the Offshore Wind Policy Statement (Scottish Government, 2020) that:

> *'Offshore wind is one of the lowest cost forms of electricity generation at scale, offering cheap, green electricity for consumers, with latest projects capable of generating power at below wholesale electricity prices.'*

Whilst NPS EN-1 also states;

> *'Wind and solar are the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply (as they are not reliant on fuel for generation)'.*

Analysis provided in NPS-EN1 shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar. The UK has a world leading offshore wind sector and is ideally placed to benefit from continued investment in renewables innovation. Scotland is considered to have a significant amount of seabed resource available for exploitation, which makes the large-scale development of offshore wind an achievable way to increase the supply of low-cost energy.

OWFs have also been proven to be affordable at scale for consumers, unlike other low-carbon energy sources (e.g., tidal or nuclear) which have not been developed to the same scale and are less technically and commercially feasible with more questions around their deliverability at the scale required. While any, and all, low-carbon-based projects will be essential to reach Scotland's decarbonisation targets, only offshore wind is considered established enough to produce a significant amount of affordable energy in the required short-term timescales.

It is therefore considered that increasing the supply of offshore wind electricity will work to improve the affordability of supply. This is especially relevant in the current economic climate with the recent

cost of living crisis, especially in relation to energy (e.g., increase in the price of imported gas and coal (over 200% and 100% in 2021 respectively).

The average cost of energy in the UK has increased significantly since 2013, costing approximately £73.34 per megawatt hour (MWh) in January 2024 compared to £49.96 per MWh in January 2013 (an increase of 68.12%).

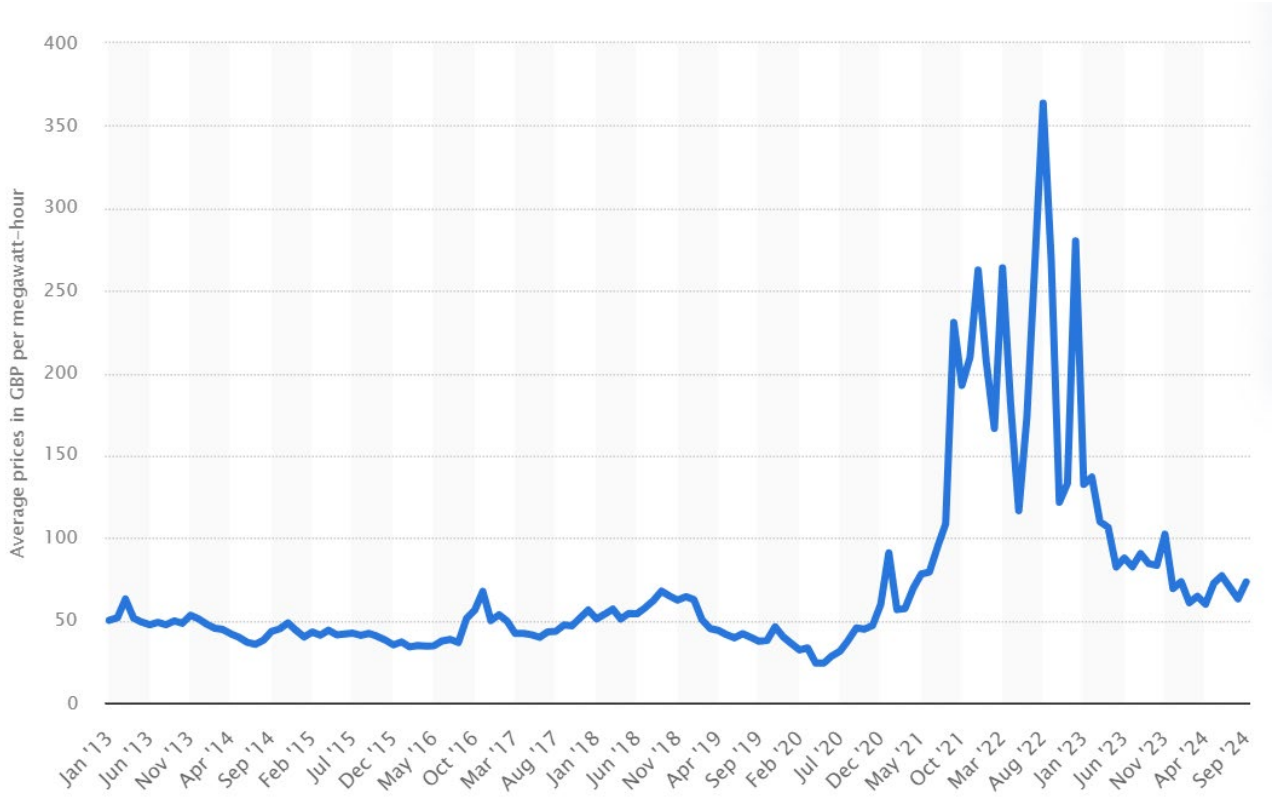

Figure 4-8 Average Price of energy per megawatt-hour since January 2013 (Statista Research Department, 2024)

During the COVID-19 pandemic, the price of energy reached an all-time low of £24.01 per MWh in April 2020, a 44% decrease from January 2013 (Statista Research Department, 2024). This was due to a mix of a reduction in the need for fossil fuels and falling international gas prices. Furthermore, reduced generation costs meant that approximately £1.3 billion was saved in supply costs over Q2 2020 (Staffell *et al.,* 2020).

However, in January 2021 prices began to rise again, reaching £90.94 per MWh, a 112% increase from January 2013. As a COVID-19 lockdown was still in place across the UK at this time, it is considered that this increase was due to outages of conventional power plants rather than changes in demand (Matson and Gogna, 2021).

The large economic recovery in 2021 was responsible for the increasing price throughout 2021, with Russia's invasion of Ukraine causing a dramatic increase in energy prices across all of Europe, not just the UK, eventually reaching the peak in August 2022, where the price was £363.71 per MWh (an increase of 746.6% from January 2013; Figure 4-8) (Statista Research Department, 2024). Although it is worth noting the high rates throughout 2022 rather than the August peak in isolation.

In 2023, the price of electricity in the UK began to fall and has resulted in a price of £63 per MWh in August 2024 and £73.25 in September 2024, the lowest price is still a rise of 141% since January

2013. Although prices have decreased, noting the significant spike between May 2021 and May 2023, price instability and uncertainty will remain while prices are subject to external influences beyond the UK's control. This risk of price instability reiterates the need for security of supply that offshore wind energy brings.

There are additional ways the Project may increase affordability to the consumer through floating offshore wind technology and supply chain development by providing an alternative renewable energy source to the oil and gas platforms and through the competitive tender CfD process following consent these are discussed below. .

Most commercial wind farms in the UK to date have been using traditional bottom-fixed monopiles; however, the Project is proposing to use floating wind turbine generators. Floating wind turbine generators are anticipated to start at a higher cost than traditional bottom-fixed monopiles as these are new to the commercial market; however, it is anticipated that the price will fall rapidly once commercial operation begins as each commercial deployment will reduce subsequent costs. This is because projects will be able to learn from bottom-fixed foundation projects and share in a lot of the resource heavy aspects of developments, including a more efficient turbine design from years of development, sharing operation and maintenance resources with existing projects, and utilising the same supply chain and existing skills within the region.

The Project aims to assist in decarbonising the oil and gas industry through providing an alternative renewable energy source to power oil and gas platforms, therefore moving away from using fossil fuels, surplus energy generated by the Project will be fed back into the UK grid. The price of this renewable energy will not be as susceptible to global impacts, such as instability caused by wars, and thus the price to the utilities companies will be more stable. Not only will the excess energy that goes to the grid bring the cost of energy down for the consumer, but the powering of oil and gas platforms from renewable energy is likely to reduce the cost of traditional oil and gas supplies, further increasing affordability.

Additionally, policy is already in place for offshore wind projects to ensure that the price of energy produced is affordable for customers through the Contract for Difference (CfD) auction process for generation assets and the offshore transmission owner regime for transmission assets. These policies work to increase investment in the industry by providing a longer-term fiscal framework which also promotes competitive pressures which benefits customers. As the offshore wind industry has continued to develop and technology improves, the efficiency of infrastructure (e.g., foundations, WTGs) has continued to increase, which has enabled offshore wind to remain competitive when compared to other energy generation technologies.

It is noted the global rise in inflation impacted supply chains and presented financial challenges to projects culminating in the CfD Round 5 auction being unsuccessful in attracting offshore wind investment. The higher project costs have since been reflected in higher Strike Prices (the maximum price the government will pay for each technology) for Auction Round 6 which procured 5 GW of offshore wind including 400 MW of floating offshore wind for Green Volt Offshore Windfarm. This auction process still acts to minimise cost to the consumer through the competitive auctioning process.

4.5 Supply chain development for large scale floating offshore wind.

As part of the just transition to a net zero system, the Scottish Government recognises that factors that may shape the pace or scale of development include the time required for developments to be connected to the grid and the capacity of the supply chain to service a major step change in construction. The Scottish Energy Strategy (Scottish Government 2017) details how the Scottish

Government aims to boost the Scottish supply chain and reach the scale required to meet Scotland's energy needs stating:

> *'our offshore wind supply chain is strengthening and expanding – building on Scotland's established oil and gas expertise and experience. Scotland has the necessary competitive advantage and the building blocks – a skilled, committed workforce, excellent port infrastructure and a strong innovation hub, the aim is to create more opportunities for Scottish manufacturers and supply chain from the developments taking place'.*

The Scottish Government Draft Energy Strategy and Just Transition Plan (Scottish Government 2023) states ;

> *'Maximising opportunities for growing net zero energy sectors and businesses, driving investment and increasing trade opportunities will be critical to delivering a just transition. Through government investment in the net zero energy economy and by providing a stable policy environment and clear market signals, our aim is to attract increased levels of private and inward investment into Scotland's energy sector. Boosting our skills base and domestic supply chain will support the creation of vital jobs across the economy.'*

Having a pipeline of projects in the Scottish planning system and early development of large floating offshore wind projects like the Project OWF are essential for creating the investment opportunity and building blocks for local supply chain expansion. In order to act as a catalyst and a launching pad for market confidence, large projects are required to increase demand and investment in the supply chain.

4.6 Role of and need for the Project

Through the established need for offshore wind generated renewable energy, as set out in the sections above, it is considered that there is a clear and urgent need for the Project, with the primary reasons being:

- Decarbonisation is urgent, with as much renewable energy as possible required to mitigate climate change. Decarbonising the oil and gas industry will make significant contributions to offsetting millions of tonnes of CO^2 every year. The Project will deliver of up to 1.35 GW of renewable energy, providing a substantial contribution to decarbonisation and net zero targets and will provide a significant contribution to the decarbonisation of oil and gas platforms in Scottish waters.

- The loss of renewable energy generation by not progressing the Project would need to be produced from other renewable sources, of which options are limited. It is considered that all potential renewable energy sources are required to combat climate change, if the Project is not progressed 1.35 GW of generating capacity will be lost;;

- Energy security is more important than ever, and a diversity of supply is essential to avoid repeating the recent impacts of the Covid-19 pandemic and Russia's illegal invasion of Ukraine. The Project will help achieve energy security through contributing up to 1.35 GW of UK sourced energy to the UK grid, thus reducing risks of instability from external influences;

- Increasing the supply of offshore wind electricity will work to improve the affordability of supply to the UK consumer, the Project will generate a substantial 1.35 GW of renewable electricity to oil and gas platforms with the surplus going to the UK grid;

- The Project will contribute to the Just Transition away from non-renewable energy sources by providing a contribution to the supply chain development for floating offshore wind,

particularly relevant to those people who rely on the fossil fuel industry within the Northeast of Scotland;

- The Project is considered to be highly important for the development of large-scale floating wind farm technology, the technological advances this Project will accelerate will benefit future floating offshore wind farms; and

- Development of early large scale floating offshore wind projects is required to attract investment into the supply chain to build up capacity to service the potential future pipeline of floating offshore wind projects in the UK, as one of the first large-scale Scottish projects to use floating foundations, the Project will provide the springboard for future investment and technology development.

For the above reasons, the Project is vital to Scotland's energy supply through the 2030's and beyond. If the Project is not undertaken, not only would the Scottish decarbonisation targets (namely the 2045 target) potentially be placed at risk of not being met, but Scotland would struggle to deliver the outputs as per the SMP for INTOG (Scottish Government, 2022a[Error! Bookmark not defined.]), North Sea Transition Deal (DESNZ 2021), Scottish Energy Strategy (Scottish Government, 2017), UK Net Zero Strategy (DESNZ, 2022) and UK Offshore Wind Sector Deal (BEIS, 2020), as well as the targets set by the Climate Change (Scotland) Act 2009, Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, and the (UK) Climate Change Act 2008 (as amended).

5 No Other Means/Alternatives

5.1 Overview

This section establishes that there are no other means of proceeding with the Project which would create a **substantially** lower risk of hindering the achievement of the objectives of the ncMPA. As discussed above in Section 2, there are limited examples or available guidance from Scotland to guide this discussion. However, given the similarities between this requirement and the need to demonstrate the absence of alternatives when considering a derogation from the Habitats Regulations, available HRA derogation cases and guidance have been considered. This includes:

- Managing Natura 2000 Sites: The provisions of Article 6(3) of the 'Habitats' Directive 92/43/EEC (2000) published by the EC in 2000 but updated in November 2018 (MN 2000);
- EC Methodological Guidance: Assessment of plans and projects significantly affecting Natura 2000 sites (the Methodological Guidance) (European Commission 2002);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (Article 6(4) Guidance) (DEFRA 2012); and
- Habitats Regulations Appraisal (HRA) Derogations for Offshore Wind Projects in Scotland - Legal Framework for Decisions (CMS, 2021).

The draft *Policies to inform updated guidance for Marine Protected Area Assessment* (Defra, 2024) and the *Best practice guidance for developing compensatory measures in relation to Marine Protected Areas* (Defra 2021) also provides relevant direction albeit in a UK waters context.

The Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 both clarify that “other means” of proceeding with the project includes consideration of “in another manner, or (b) at another location.” (Section 126 8 and Section 83 5 respectively). Both of these options are discussed below.

5.2 Approach

In order to establish that there are no other means of proceeding with the Project, the following approach has been utilised:

- Step 1: Identification of the Project objectives in the context of the need for the project;
- Step 2: Consideration of the “do nothing” scenario;
- Step 3: Identify feasible other means to deliver the Project, including in another manner and in another location; and
- Step 4: Assess the other means against the estimated risk of affecting (other than insignificantly) the objectives of the ncMPA.

5.2.1 Step 1: Objectives of the Project

The need for the Project has been discussed above in Section 4. For other means of delivering the Project to be considered as a valid alternative, the alternative proposal must also fulfil the objectives and purpose of the Project. It can then be established if the alternative, which meets those objectives, could be delivered with a substantially lower risk to the ncMPA.

The Defra (2021) consultation guidance document sets out that the responsible authority must:

> *“demonstrate they have looked at all feasible, less harmful and reasonable options and, the applicant should be asked to justify its reasoning for discounting alternatives. This could include looking at whether the proposal could happen at a different location, using different routes across a site or making changes to scale, method, size or timing. These are not exhaustive, and the responsible authority should consider what is appropriate for the*

application on a case-by-case basis, including both operational and decommissioning aspects" (Defra 2021). It further states that the alternative proposals should be limited to "those which would deliver the same overall outcome for the activity" (Defra, 2021).

Accordingly, and in keeping with the consideration of alternatives under the Habitats Regulations derogation process, alternatives that cannot meet these objectives can be discounted. Thus, the objectives of the Project must be considered as integral to any alternative proposal. For example, the Scottish Ministers, in the Green Volt Offshore Windfarm Decision letter stated (Scottish Government, 2024c):

'The Scottish Ministers do not consider alternative forms of renewable technologies or onshore wind farms to be "alternatives" to offshore wind given the policy objectives identified for the Project. It follows that identification of reasonable alternative solutions will consist of either a 'Do Nothing' approach, or consideration of an alternative project location, scale or design. Any alternative identified must be capable of meeting the identified policy objectives, be legally, technically and financially feasible, and have a lower impact on the designated sites.'

5.2.2 Step 2: Do nothing scenario

The next stage in assessing other means of delivering the project is to consider the "do nothing" scenario. This scenario investigates the outcome of the Project not progressing at all. The Defra (2021) guidance and more recent derogation examples indicate that the "do nothing" scenario is unlikely to be considered an acceptable scenario as "it would not deliver the same overall objective as the activity" which is being proposed (Defra 2021).

The "do nothing" scenario will be examined against the project objectives.

5.2.3 Step 3: Identify feasible other means/alternatives

Provided that the "do nothing" scenario is ruled out as an acceptable alternative means of delivering the Project objectives, other options should be identified and assessed to determine if they can meet all Project objectives whilst creating a substantially lower risk of hindering the objectives of the ncMPA.

Again, the Defra guidance offers an interpretation of "alternatives" which clarifies that alternatives should be technically and legally feasible, and should not be discounted for purely financial reasons. "Alternatives should be limited to those which deliver the same overall outcome… whilst creating a **substantially** lower risk of impact to the MPA." (Defra, 2021) (emphasis added).

An alternative's overall feasibility can be determined through three categories: financial, legal and technical. Financial feasibility means that the proposed alternative can be more expensive than the original proposal, but not prohibitively so. The alternative solution must still be economically viable for the developer, otherwise it is not considered financially feasible. Legal feasibility means that there are no legal impediments to the potential alternative proceeding, such as developing a project without relevant consents or licences. Technical feasibility refers to the ability to implement the alternative through proven means, without relying on untested or unsafe technologies and/or methods that do not meet industry safety and regulatory requirements (CMS, 2021).

As described in the key legislation discussed in Section 2.1, alternatives should consider delivery of the Project in "another manner" and "another location". This means that viable alternatives could include different locations for the project, modifications to the size and design of the project, or different methodologies for various phases of the Project. Alternatives would not, however, include altogether different technology, such as onshore wind or wave power technology.

5.2.4 Step 4: Assess the other means/alternatives

Once feasible alternatives are identified, they must then be assessed to determine if they meet the Project objectives whilst creating a "**substantially** lower risk of hindering" the conservation objectives of the ncMPA.

It is useful to clarify that an alternative proposal that produces an impact that is estimated to be lower than that of the Project does not automatically mean the alternative requirement has been met. An alternative must demonstrate a "substantially lower risk" to the ncMPA in order to qualify, as set out in the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010.

5.3 No other means case

5.3.1 Step 1: Objectives of the Project

The need for the Project establishes the requirement for the consent application and the urgent need for new floating offshore wind projects in Scotland and the UK to enable an effective transition away from fossil fuel and carbon-producing energy systems. The Project will help mitigate the effects of climate change and will allow Scotland and the UK to meet their legally binding net zero commitments by 2045 and 2050, respectively. The need for the Project is set out in Section 4 above and in the **EIAR Vol 2, Chapter 2: the Need for the Project**. The objectives of the Project are designed to meet this overall "need" and are presented below.

Table 5-1 - Project objectives

OBJECTIVE		BASIS OF THE OBJECTIVE
I.	To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply;	Contribute to Scotland's commitment to address global climate change and achieve net zero by 2045. Urgent action is needed to deliver decarbonisation and limit global warming to less than 1.5 degrees. Scottish First Minister declared a climate emergency in April 2019 and Scotland has legally binding targets to reduce greenhouse gas emissions to 'net zero' by 2045. Recent UK legislation (e.g. EN-1 and EN-3) specify the importance of offshore wind in meeting these targets Great British Energy Bill aims to speed up the deployment of mature and new technologies, as well as local energy projects to support the government's aim of delivering clean power by 2030 whilst ensuring future demands of decarbonising the economy can be met. Delivery at scale is needed to make this change in the time available.
II.	To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply;	Energy security is a fundamental requirement which keeps the general public safe and healthy and increases prosperity through supporting commercial and industrial growth. Energy security has come into sharp focus in recent times as a result

OBJECTIVE		BASIS OF THE OBJECTIVE
		of supply shocks following Covid-19 pandemic and more recently due to Russia's illegal invasion of Ukraine. The development and deployment of low-carbon generation capacity additional to that procured in the existing Capacity Market mechanism would increase the likelihood that the Scotland and the UK would achieve security of supply. Increasing the renewable capacity within the UK will reduce the reliance on imported sources and therefore increase the Uk's security with respect to both quantity and cost of energy
III.	To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters;	As part of the North Sea Transition Deal, the Government committed to reduce emissions in the oil and gas industry to 50% below 2018 levels by 2030, and reaffirmed its commitment to the target in its Carbon Budget Delivery Plan (HM Government 2023b). The oil and gas sector is not on track to meet the 2030 target on the current trajectory. Large-scale TOG projects are required to support the North Sea Transition Deal decarbonisation targets and the Scottish Government's INTOG leasing round. The Project location has been specifically selected to maximise the number of oil and gas installations that can connect. As the largest TOG project identified, the Project can a decarbonise a large proportion of projects in this region.
IV.	To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure;	There is limited suitable seabed available for OWFs in Scotland and, therefore, generation capacity should be maximised within the available suitable seabed to maximise the ability to meet the decarbonisation targets. The Project location has been selected to provide the maximum opportunity to decarbonise a large number of oil and gas installations. Maximising capacity supports the diversity of generation technologies within Scotland and the wider UK and contributes towards security of supply.
V.	To lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland;	A significant amount of large-scale complex offshore infrastructure including floating wind specific infrastructure must be procured, supplied, built, maintained and operated to deliver on the Scottish Government commitments. Legally, technically and commercially viable large-scale floating offshore wind projects are needed in the planning system and, if consented, will encourage investment in the supply chain system.
VI.	To contribute towards the meeting of Scottish and UK Government targets relating to climate change and net zero and help address the global climate emergency by	Contribute to UK and Scotland's commitment to address global climate change and achieve net zero by 2050 and 2045 respectively.

OBJECTIVE		BASIS OF THE OBJECTIVE
	delivering a significant volume of offshore wind in Scottish waters in the 2030s;	Recent UK policy (e.g. EN-1 and EN-3) specify the importance of offshore wind in meeting these targets. Great British Energy Bill aims to speed up the deployment of mature and new technologies, as well as local energy projects to support the government's aim of delivering clean power by 2030 whilst ensuring future demands of decarbonising the economy can be met. Delivery at scale is needed to make this change in the time available.
VII.	To ensure that, in the long term, energy is available to consumers at the lowest possible cost to ensure the highest quality of life.	Low carbon renewable energy will help with energy transition away from fossil fuels. Increasing UK energy sources will reduce the impact of external price fluctuations and reduce the end cost for the consumer. Delivery of floating technologies at a large scale will drive efficiencies through the construction, operation and maintenance and decommissioning phases of floating offshore wind projects leading to lowest possible cost to the consumer.

5.3.2 Step 2: Do nothing scenario

The 'do nothing' scenario presents the option of not proceeding with the project in any way. As established in Section 5.2.2 the 'do nothing' scenario is unlikely to present a viable option as this scenario cannot meet any of the Project objectives nor fulfil the need for the Project.

The 'do nothing' scenario is always legally, technically and financially feasible. However, if the Project does not proceed a significant area of seabed, identified for offshore wind development in the INTOG SMP IPF and in line with the Scottish government's national and sectoral marine planning processes would not be developed. In order to meet the 2045 net zero commitments, all offshore wind projects are considered necessary. This was confirmed by the Scottish Ministers in the Green Volt Derogation Case (Scottish Government, 2024e). Not developing the Project would also set back floating offshore wind development in Scotland and the UK, further hindering government ambitions to maximise this sector's national and regional supply chain opportunities.

Further, if the Project does not progress at all, the significant removal of carbon emissions from the oil and gas production sector in the surrounding area will be unattainable within the timeline for decarbonisation agreed in the NSTD. This would directly jeopardise delivery of the NSTD and would mean continued carbon emissions from one of the sectors that produces the most carbon emissions in the UK for many years to come.

The Project will also contribute to Scottish and UK energy security by providing a renewable energy source to feed electricity to the national grid, and addresses the clear and urgent need for large scale offshore wind as set out in the British Energy Security Strategy (UK Government, 2022), the draft

Energy Strategy and Just Transition Plan (Scottish Government 2023). It is not appropriate to ‘do nothing’ when faced with a climate emergency and energy crisis.

Therefore, whist technically, legally and financially feasible, the ‘do nothing’ scenario is discounted as an alternative as it meets none of the identified objectives or policies. A summarised assessment of the ‘do nothing’ scenario is provided in Table 5-2 below.

Table 5-2 - Assessment of the 'do nothing' scenario against the Project objectives

ALTERNATIVE SCENARIO	DOES THE ALTERNATIVE MEET THE PROJECT OBJECTIVES							FINANCIALLY FEASIBLE	TECHNICALLY FEASIBLE	LEGALLY FEASIBLE	CONCLUSION
	TO GENERATE LOW CARBON ELECTRICITY FROM OFFSHORE WIND FARMS IN SUPPORT OF THE DECARBONISATION OF THE SCOTTISH ELECTRICITY SUPPLY;	TO EXPORT ELECTRICITY TO THE SCOTTISH ELECTRICITY GRID TO SUPPORT SCOTTISH COMMITMENTS FOR OFFSHORE WIND GENERATION AND SECURITY OF SUPPLY;	TO GENERATE AND DELIVER SIGNIFICANT CAPACITY OF LOW CARBON ELECTRICITY TO EXISTING OIL AND GAS INFRASTRUCTURE TO MAXIMISE THE DECARBONISATION OPPORTUNITY IN SCOTTISH WATERS;	TO OPTIMISE GENERATION AND EXPORT CAPACITY WITHIN THE CONSTRAINTS OF AVAILABLE SCOTTISH SITES AND ONSHORE TRANSMISSION INFRASTRUCTURE	TO LEAD THE SCALING UP OF FLOATING OFFSHORE WIND SUPPLY CHAIN IN SCOTLAND, WITH THE ASSOCIATED ECONOMIC DEVELOPMENT BENEFITS FOR SCOTLAND;	TO CONTRIBUTE TOWARDS THE MEETING OF SCOTTISH AND UK GOVERNMENT TARGETS RELATING TO CLIMATE CHANGE AND NET ZERO AND HELP ADDRESS THE GLOBAL CLIMATE EMERGENCY BY DELIVERING A SIGNIFICANT VOLUME OF OFFSHORE WIND IN SCOTTISH WATERS IN THE 2030S; AND	TO ENSURE THAT, IN THE LONG TERM, ENERGY IS AVAILABLE TO CONSUMERS AT THE LOWEST POSSIBLE COST TO ENSURE THE HIGHEST QUALITY OF LIFE.				
Do nothing scenario	No - Provides no contribution towards any decarbonisation targets	No - Produces no contribution to energy security or providing energy	No - Would waste the opportunity to decarbonise a significant amount of oil and gas infrastructure within the limited timeframe remaining for these structures	No - Would waste a part of or most of the E-a INTOG lease area of Scottish seabed. The project would not utilise existing consented onshore connections (through the NorthConnect Project). Therefore, would fail to optimise the use of onshore infrastructure.	No - Would hinder the ability of the floating offshore wind supply chain to scale up and would not develop the Scottish supply chain or have any residual local benefit.	No - Would make no contribution to Scottish or UK targets to reach net zero and delivers no offshore wind in Scotland.	No - Would not contribute to the provision of energy at low cost and may delay reaching that objective by hindering floating offshore wind development in Scotland	Yes	Yes	Yes	The 'do nothing' scenario does not meet any of the Project objectives and therefore is not considered a feasible alternative.

5.3.3 Step 3: Identify feasible other means/alternatives

Considering the relevant legislation and guidance provided in Section 2, a list of categories of suitable alternatives can be created. This list includes specific consideration of “another location” and “another manner.”

Alternative locations which are considered:

- Locations outside the UK
- Locations within the UK, excluding Scottish waters; and
- Locations within Scottish waters.

Alternative project design options which are considered (as ‘another manner’):

- Size of the project area
- Alternative foundations and mooring system
- Mooring and anchor options
- Number of export/import cables
- Cable burial or protection methods
- Alternative timing

5.3.3.1 Alternative Locations

5.3.3.1.1 Locations outside the UK

This section considers the potential of progressing the Project in a location outside of the UK.

There are relevant examples from recent consent applications in the UK and Scotland that demonstrate that locating the Project outside of the UK cannot be considered a viable alternative. Most specifically, the Scottish Ministers stated in the derogation case for the Green Volt Offshore Windfarm that:

“*The Scottish Ministers consider that offshore wind farm projects located either outside Scottish territorial waters, i.e. within UK territorial waters or in other countries, are not an alternative to the Project since this would not meet the identified objectives which are specific to Scottish waters with a view to achieving Scotland’s offshore wind and net zero ambitions and decarbonising O & G platforms.” (Scottish Government 2024)*

Locating the project outside of the UK would not meet the national binding net zero commitments nor the wider decarbonisation ambitions of the UK. Additionally, whilst other countries have their own net zero targets, these countries will need to maximise their available seabed space for offshore wind in order to meet those commitments. As such, locating the project outside of the UK would actively hinder those opportunities.

The Project objectives, therefore, cannot be met as there would be limited contribution to Scottish and UK offshore wind capacity, energy security or supply chain objectives. Additionally, due to the limitations of export of electricity over HVAC cable, a project located outside of the UK could not contribute to the large-scale decarbonisation of oil and gas production within UK and Scottish waters.

5.3.3.1.2 Locations within the UK, excluding Scottish waters

This section considers the potential of delivering the Project in alternative locations throughout the UK, excluding Scottish waters.

As described above, the Scottish Minister stated within the Derogation Case for Green Volt Offshore Windfarm that offshore wind farm projects located either outside Scottish territorial waters (i.e. within

UK territorial waters), or in other countries, are not an alternative to the Project. This is due to the fact that these would not meet the identified objectives that are specific to Scottish waters and with a view to achieving Scotland's offshore wind net zero commitments and decarbonising oil and gas platforms in Scottish waters.

Locations in other devolved nations within the UK do not deliver on any of the Scottish-specific Project objectives in relation to net zero commitments, decarbonisation of Scottish oil and gas infrastructure and renewable energy generation (objectives, 1-5). The Project site has been chosen to maximise the potential for decarbonisation of oil and gas platforms within the North Sea (objective 3), no other site outside of Scottish waters would be able to meet this objective

Locations identified by The Crown Estate in prior leasing rounds (for areas within England's offshore region) are already under exclusivity to other offshore wind developers. These locations are not legally available to the Project and do not constitute feasible alternatives.

Future leasing rounds in the UK EEZ are also not an alternative to the Project. CES has recently concluded the Scotwind leasing round and INTOG leasing rounds, TCE is currently implementing the Celtic Sea leasing round. Outside of the Celtic Sea leasing round any future alternative location to replace the Project would depend on a fresh site leasing process being initiated by TCE and CES. There is no sign of this in the short-term, therefore any future leasing rounds are not currently feasible alternative solutions and are not legally available to the Applicant. The huge scale of Scottish and UK targets for decarbonisation by 2045 and 2050 respectively and the current operational capacity achieved to date mean that any lost capacity cannot necessarily be offset by any future leasing rounds.

Furthermore, sites outside of Scottish waters would fail to meet all the Objectives of the Project as they all refer specifically to Scottish benefits

5.3.3.1.3 Locations within Scottish waters

As the above arguments explain that projects outside of Scottish waters do not constitute feasible alternatives for the Project, this section considers other locations within Scottish waters.

The Scottish Government and Crown Estate Scotland have organised two offshore wind seabed planning and leasing rounds, with the latter INTOG Sectoral Marine Plan still to be formally adopted. These rounds have been progressed to enable new offshore wind projects to proceed in Scottish waters. In addition, the INTOG leasing process was specifically accelerated to allow offshore wind projects to lease seabed as early as possible to help meet the oil and gas decarbonisation objectives in the NSTD.

The ScotWind offshore wind projects would not meet the specific objectives of the Project as they were designed around different goals and delivered under a planning framework [the Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020) that specifically excluded seabed from areas with proximity to oil and gas infrastructure. Though these ScotWind projects will be delivered in Scotland and will contribute to the net zero and wider Scottish decarbonisation strategies, they would not make any contribution to the oil and gas electrification objectives of the Project. Additionally, the closest ScotWind project is located roughly 60 km west of the Project, meaning potential connections to oil and gas infrastructure would be limited compared to the Project, which was located to maximise the number of assets located within a 100 km radius (the transmission 'limit' for HVAC cables). The design and development of transmission infrastructure connecting to a windfarm over great distances would be increasingly difficult and may require additional infrastructure (e.g. the addition of one or more 'step-up' sub-stations). This may also require the use of an entirely different transmission and convertor system, or may completely rule out a number of assets the Project aims to electrify.

Noting environmental and socio-economic constraints, the INTOG SMP IPF and leasing round restricted seabed availability to a maximum area of 2,067 km² and 6.2 GW. Of the total area and capacity, 1,900 km² and 5.7 GW were reserved for INTOG projects. Eight Targeted Oil and Gas (TOG) projects were successful in the leasing round. Three of these projects are small (15 MW or below) and target individual platforms. None of the remaining TOG projects (excluding Green Volt, which was consented earlier in 2024) are sufficiently progressed or of sufficient scale to enable electrification of oil and gas assets in the timeline required to meet the NSTD objectives or contribute to the development of floating offshore wind supply chain. Additionally, the Project location was selected to enable and maximise electrification to the oil and gas assets in the vicinity of the Project. The same limitations, such as the effective distance for HVAC cables and socio-economic constraints, will mean that other TOG projects could not deliver on the same decarbonisation opportunity as the Project

Other 'TOG' are not legally available to the Applicant and so cannot be considered as a feasible alternative. There are also no other INTOG projects that are similarly progressed that are of the same size or generating capacity as the Project (Green Volt OWF consented 2024 has a generating capacity of 490-560 MW),

Other INTOG areas that fall outside of E-a Lease Plan Option area would need to be of a suitable size and location and be in proximity to the oil and gas platforms surrounding E-a Lease Plan Option area and possess the environmental, geotechnical and geophysical datasets to allow acceleration of the site development activities to meet the Project's 2031 first power timeline and it would need to have suitable connection to the UK grid. There are no other feasible options at this time.

The process to gain access to seabed for offshore wind development in Scotland is plan-led and seabed leasing is managed by Crown Estate Scotland in accordance with the planning process. As the INTOG Sectoral Marine Plan is not yet finalised, all INTOG projects are still subject to the outcome of the Sectoral Marine Plan Iterative Plan Review (excluding where projects may already have achieved consent). Without a new plan and leasing process, there are no other seabed locations that can be brought forward to deliver the Project and wider Scottish and UK offshore wind objectives, as no further seabed is currently available or expected to be released in the near future. It is also useful to clarify that the areas identified through the INTOG planning process and made available for leasing by Crown Estate Scotland were consulted on and modified based on feedback. The Project location was agreed by Scottish Ministers to progress to the leasing stage.

In the Scottish Government's (2021) *INTOG Planning Specification and Context Report*, it is made clear that the INTOG programme is firmly set in the context and constraints of the recently announced ScotWind projects. As such, space and capacity for INTOG projects would be restricted. This was confirmed in the INTOG SMP IPF with the spatial and capacity limitations as set out as above. Additionally, the Crown Estate Scotland leasing rules require a development density of 3 MW/km² at the early project development phase, which is a notable increase from the 1 MW/km² requirement imposed on ScotWind developers. Noting the **EIAR Vol. 2, Chapter 04: Site Selection and Consideration of Alternatives**, the Project location was chosen to maximise the decarbonisation opportunity and to use the limited seabed available efficiently.

Delivering the Project from another location (if available) would mean the current Project location, which was identified to maximise the decarbonisation opportunity and to make efficient use of the limited space available via leasing, would be wasted. If legally permitted, moving the Project would result in a change to the Project's ability to provide electrification to assets in the region of the Project. The maximum electrification opportunity, particularly within the INTOG E-a area, would be diluted and as such, the objective to deliver electrification and to also optimise generation would be unfulfilled.

In addition, the NSTD and the wider Scottish net zero decarbonisation commitments are highly dependent on accelerated electrification options. Beyond the lack of available seabed and legal means to access alternative locations, there are no seabed locations available for offshore wind development with the same level of data and detailed project design work to allow a project to progress within the proposed timeframe. Therefore, the NSTD and net zero commitments could not be achieved through alternative means. The same argument can also be applied to available grid connections, as no other project or seabed location would be given a suitable grid connection date.

As described in detail in the **EIAR Vol. 2, Chapter 04: Site Selection and Consideration of Alternatives**, there are numerous constraints and other marine users that prohibit the selection of another location for the Project. Most notably, the Project has selected its location in order to maximise the decarbonisation options available to oil and gas infrastructure in the CNS. Other seabed locations nearby that could accommodate a project would either not fulfil the same decarbonisation opportunity or would be too heavily constrained to deliver efficient use of the seabed.

Consultation and stakeholder engagement has helped inform the development of the Project, including the selection of the Array Area and the EICC. Relevant pre-application stakeholder engagement is shown in **EIAR Vol. 2, Chapter 6 Stakeholder Engagement.**

Key considerations for site selection were:

- Proximity to oil and gas infrastructure which have a long time period before Cease Of Production (COP) occurs, if they had an operation life of 2035 and beyond;
- Proximity to oil and gas assets where transmission via High Voltage Alternating Current (HVAC) remains possible (limited to 100 km radius);
- Prioritising decarbonisation opportunity;
- Avoidance of existing infrastructure and obstructions;
- Helicopter safety zones;
- Areas of shipping activity;
- Technical criteria such as water depth, sediment type and significant wave height;
- Commercial fisheries activities; and
- Potential for significant environmental impact.

Data relating to ecological constraints, such as seabirds, marine mammals and priority marine features were also considered.

This initial exercise resulted in a 440 km^2 area being taken forward for initial survey works. Optimisation was then carried out for wind energy yield to minimise IAC length and distances to oil and gas assets. This along with a review of more specific potential environmental constraints and the maximum lease area of 333 Km^2, led to the identification of the current Array Area taken forward for more detailed assessment in the final EIAR (**EIAR Vol. 2, Site Selection and Consideration of Alternatives**).

Consideration has also been given to the potential for impact to commercial fishing activity, with the array area being refined to reduce overlap with fishing activity whilst still avoiding other sensitivities.

The array area was also refined to reduce potential interactions to identified features within the East of Gannet and Montrose Fields NCMPA. Potential negative effects to seabirds also played a role in the initial site selection, noting that the RSPB produced seabird utilisation data that was used in the Scottish Government's planning process. Additionally, the Array Area aligns with RSPB's own 'Indicative Area of Opportunity' for floating wind outlined in the 2050 Energy Vision report (RSPB, 2016).

Monitoring requirements, helicopter access and wider safety concerns are considered when examining areas for development, especially those in proximity to oil and gas infrastructure. This can be seen in the changes between the Areas of Search identified in the Scottish Government's INTOG Project Specification and Context Report (Scottish Government, 2021) and the INTOG SMP IPF published a year later in 2022. The Area of Search, E-b, was reduced to avoid a spatial conflict with the Acorn Carbon Capture Usage and Storage (CCUS) project. This was not due to a legal or leasing overlap, but rather due to the monitoring requirements of the Acorn CCUS project (Scottish Government, 2022). As such, alternative locations with surrounding oil and gas infrastructure are not available, excluding those already utilised by other TOG projects. This is further evidenced by the fact that no TOG project sought to utilise any space east of Cenos Offshore Windfarm due to the existing constraints.

As stated in the 'do nothing' scenario, there is an urgent need to deliver offshore wind to meet the needs of the Scottish and UK people, the net zero commitments, the wider NSTD decarbonisation objectives and Scottish and UK policy goals. The loss of an offshore wind project is therefore not acceptable. There are also no alternative projects or locations within Scottish waters that can meet these targets and deliver the Project objectives, including the Project timeline. Even if seabed was made available immediately to facilitate a new TOG project, there would be no possibility of meeting any of the indicated timelines that are required. Noting the lack of feasible legal or feasible means of delivering the Project in any other location, this scenario can be discounted.

5.3.3.1.4 Conclusions

A summary of alternative location options is presented below in Table 5-3 below:

Table 5-3 - Assessment of 'other locations' to deliver the Project

ALTERNATIVE SCENARIO	DOES THE ALTERNATIVE MEET THE PROJECT OBJECTIVES							FINANCIALLY FEASIBLE	TECHNICALLY FEASIBLE	LEGALLY FEASIBLE	CONCLUSION
	TO GENERATE LOW CARBON ELECTRICITY FROM OFFSHORE WIND FARMS IN SUPPORT OF THE DECARBONISATION OF THE SCOTTISH ELECTRICITY SUPPLY;	TO EXPORT ELECTRICITY TO THE SCOTTISH ELECTRICITY GRID TO SUPPORT SCOTTISH COMMITMENTS FOR OFFSHORE WIND GENERATION AND SECURITY OF SUPPLY;	TO GENERATE AND DELIVER SIGNIFICANT CAPACITY OF LOW CARBON ELECTRICITY TO EXISTING OIL AND GAS INFRASTRUCTURE TO MAXIMISE THE DECARBONISATION OPPORTUNITY IN SCOTTISH WATERS;	TO OPTIMISE GENERATION AND EXPORT CAPACITY WITHIN THE CONSTRAINTS OF AVAILABLE SCOTTISH SITES AND ONSHORE TRANSMISSION INFRASTRUCTURE	TO LEAD THE SCALING UP OF FLOATING OFFSHORE WIND SUPPLY CHAIN IN SCOTLAND, WITH THE ASSOCIATED ECONOMIC DEVELOPMENT BENEFITS FOR SCOTLAND;	TO CONTRIBUTE TOWARDS THE MEETING OF SCOTTISH AND UK GOVERNMENT TARGETS RELATING TO CLIMATE CHANGE AND NET ZERO AND HELP ADDRESS THE GLOBAL CLIMATE EMERGENCY BY DELIVERING A SIGNIFICANT VOLUME OF OFFSHORE WIND IN SCOTTISH WATERS IN THE 2030S; AND	TO ENSURE THAT, IN THE LONG TERM, ENERGY IS AVAILABLE TO CONSUMERS AT THE LOWEST POSSIBLE COST TO ENSURE THE HIGHEST QUALITY OF LIFE.				
Alternative locations outside of the UK	No - Provides no contribution to Scottish targets to decarbonise	No - Provides no contribution to increasing Scottish energy security and targets for offshore wind generation.	No - Provides no contribution to decarbonising oil and gas platforms in Scottish waters.	No - Would not utilise any appropriate or available Scottish seabed.	No - Would be unlikely to develop the local Scottish supply chain if developing in other territories.	No - Would not contribute to any Scottish or UK Government targets relating to climate change and net zero.	No - Would not provide any energy to UK consumers or reduce energy costs.	Not assessed as not a feasible alternative.	No	Not assessed as not a feasible alternative.	Locations outside of the UK are not feasible alternatives as it does not meet any of the Project objectives and it is not legally feasible, and therefore not considered as a feasible alternative.
Locations within the UK, excluding Scottish waters	No - Provides no contribution to Scottish targets to decarbonise	No - Provides no contribution to increasing Scottish energy security and targets for offshore wind generation.	No - Provides no contribution to decarbonising oil and gas platforms in Scottish waters.	No - Would not utilise any appropriate or available Scottish seabed.	No - Would be unlikely to maximally develop the local Scottish supply chain if developing in other parts of the UK.	Yes - Would provide some contribution to UK Government targets relating to climate change and net zero but not to Scottish Government targets.	Yes - Would provide energy to the UK market and has the potential to deliver at equivalent lower cost. However, has the potential to increase costs for oil and gas decarbonisation.	Not assessed as not a feasible alternative.	No	Not assessed as not a feasible alternative.	Locations outside of the UK are not feasible alternatives as it does not meet any of the Project objectives and it is not legally feasible, and therefore not considered as a feasible alternative.
Locations within Scottish waters	Possibly - Meets objective however not considered a feasible alternative to the Project as would result in loss of essential	Yes - meets objective however not considered a feasible alternative to the Project as would result in loss of essential	Possibly - Only INTOG sites are capable of meeting the Scottish aims for decarbonising oil and gas platforms in Scottish waters, and	No - Not utilising the E-a Lease Plan Option area would result in the use of seabed not being optimised. No other project is	Yes - Meets objective however the scaling up of floating offshore wind supply chain and associated economic benefit is likely to be	Yes - Meets objective would provide a contribution towards meeting Scottish and UK Government targets relating to	Yes - Meets objectives, would provide energy to the UK consumers, and has the potential to deliver at equivalent lower cost. However,	Not assessed as not a feasible alternative.	No	Not assessed as not a feasible alternative.	While locations within Scottish waters may meet the Project objectives, it is not legally

ALTERNATIVE SCENARIO	DOES THE ALTERNATIVE MEET THE PROJECT OBJECTIVES							FINANCIALLY FEASIBLE	TECHNICALLY FEASIBLE	LEGALLY FEASIBLE	CONCLUSION
	TO GENERATE LOW CARBON ELECTRICITY FROM OFFSHORE WIND FARMS IN SUPPORT OF THE DECARBONISATION OF THE SCOTTISH ELECTRICITY SUPPLY;	TO EXPORT ELECTRICITY TO THE SCOTTISH ELECTRICITY GRID TO SUPPORT SCOTTISH COMMITMENTS FOR OFFSHORE WIND GENERATION AND SECURITY OF SUPPLY;	TO GENERATE AND DELIVER SIGNIFICANT CAPACITY OF LOW CARBON ELECTRICITY TO EXISTING OIL AND GAS INFRASTRUCTURE TO MAXIMISE THE DECARBONISATION OPPORTUNITY IN SCOTTISH WATERS;	TO OPTIMISE GENERATION AND EXPORT CAPACITY WITHIN THE CONSTRAINTS OF AVAILABLE SCOTTISH SITES AND ONSHORE TRANSMISSION INFRASTRUCTURE	TO LEAD THE SCALING UP OF FLOATING OFFSHORE WIND SUPPLY CHAIN IN SCOTLAND, WITH THE ASSOCIATED ECONOMIC DEVELOPMENT BENEFITS FOR SCOTLAND;	TO CONTRIBUTE TOWARDS THE MEETING OF SCOTTISH AND UK GOVERNMENT TARGETS RELATING TO CLIMATE CHANGE AND NET ZERO AND HELP ADDRESS THE GLOBAL CLIMATE EMERGENCY BY DELIVERING A SIGNIFICANT VOLUME OF OFFSHORE WIND IN SCOTTISH WATERS IN THE 2030S; AND	TO ENSURE THAT, IN THE LONG TERM, ENERGY IS AVAILABLE TO CONSUMERS AT THE LOWEST POSSIBLE COST TO ENSURE THE HIGHEST QUALITY OF LIFE.				
	generating capacity and all projects are required to meet targets	generating capacity and would impinge on objective to provide security of supply.	all INTOG projects are needed. Other Scotwind sites would not meet this objective. This would also remove the decarbonisation opportunity within the E-a INTOG area of search.	utilising the E-a Lease Plan Option area or the consented onshore transmission infrastructure so the use of onshore infrastructure would not be optimised either.	diminished without the inclusion of the Project.	climate change and net zero. However the loss of the Project that may become operational in early 2030, would mean a loss of significant contribution to this objective.	the loss of this Project would limit the ability to drive down cost to the consumer through economies of scale and volume of OWF delivery in Scotland.				feasible, and therefore is not considered a feasible alternative.

Having established that the Project cannot be delivered in another location, the design (or manner) for the project can be considered for alternative solutions that would "substantially lower risk of hindering the achievement" of the ncMPA objectives.

5.3.3.2 Alternative options

5.3.3.2.1 Size of the Project Area

The size of the Project has been driven by several factors. Most significantly, the INTOG leasing process, which was based on the INTOG SMP IPF (discussed in Section 1.1), set the limits for applications to lease a portion of seabed from Crown Estate Scotland. A key limitation is that the Project must fit within one of the INTOG Areas of Search defined in the INTOG SMP IPF. The Project's installed capacity must also be constrained by "not exceeding five times the annual electricity demand of the Oil and Gas Installation." Finally, the minimum density of development must be at least 3 MW/km². These collective constraints establish a design framework in which the location, capacity and array layout are largely pre-determined, with limited flexibility once an Area of Search and prospective assets have been identified by a developer.

As the aim of the Project was to enable the decarbonisation of oil and gas infrastructure, the site selection process, which is described in detail in the **EIAR Vol. 2, Chapter 04: Site selection and Consideration of Alternatives,** was driven by the need to maximise this opportunity. The Project location allows for numerous connections within 100 km maximum distance (the transmission limit for HVAC cables) to suitable oil and gas infrastructure with the required remaining lifetime (at least 5 years) to qualify under the INTOG leasing rules.

During the Project's early phase site selection, an area of 400 km² was selected for initial investigation. This area was surveyed for ornithology and marine mammal species for two years and through refinement, consideration of the INTOG leasing rules and to minimise impact on the environment and other sea users, the Project Area Array was reduced to 333 km². This optimisation also encompasses effective co-existence between the Project's Array Area and the Madoes oil field and reduces the lengths and distances of the future Onward Development Cables which will connect the oil and gas assets to the Cenos Offshore Windarm 'electricity hub' (i.e. up to two centralised OSCPs).

An increase to the Project area would not be feasible without significant changes to the INTOG leasing process and would not comply with the limitations set out in the INTOG SMP IPF. A reduction of the Project Area would also not be feasible as it would reduce the generation capacity of the Project, limiting the decarbonisation opportunity and supply of electricity to the grid, thereby reducing the Project's contribution to the net zero commitments. As discussed above, any capacity reduction would not be acceptable in the face of the urgent need for offshore wind to help tackle the climate emergency.

Additionally, due to the distance offshore, a High Voltage Direct Current (HVDC) connection is required for the Project to transmit electricity to its onshore connection point at landfall. This type of transmission system is based on 320 kV (or 540 kV) and the available 320 kV system will provide capacity for up to 1.4 GW of generated electricity to be added to the onshore grid. If the Project area and capacity were reduced, this would result in a less than efficient use of the available connection and grid capacity. Consequently, the Project would not meet its objective to optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.

Reducing the size of the project area is also not feasible due to the requirement to deliver a minimum of 3 MW/km² density of development within the Project. Whilst various layouts are being considered under the Project Envelope (see **EIAR Vol. 2, Chapter 5: Project Description** for details on

indicative layouts), the area must be efficiently managed to minimise the potential for environmental impact and maintain safe and efficient operation of the Project. Reducing the Array Area would require increasing density of assets and would have counterproductive impacts on other environmental receptors, namely seabirds, as well as potentially compromising the Project's ability to adhere to navigational safety guidance and regulation.

For these reasons, reducing the area of the Project is not a feasible alternative, as it will hinder the achievement of the Project and wider net zero objectives. As will be discussed below, reducing the capacity and area does not also ensure a reduction of the physical footprint of the project.

5.3.3.2.2 Alternative foundations and mooring system

Given the depth of water exceeding the current design limitations of fixed foundation structures, and the need to progress floating offshore wind technology, the Project has been developed using floating offshore wind foundation and mooring options. The use of fixed offshore wind foundations would not be feasible based on current or projected near-term technology. Similarly, floating OSCPs are not yet feasible for use in this Project timeline. More critically, fixed foundations have the potential to increase the negative environmental effects within the MPA due to increased footprint (compared to the tension leg Platform mooring design) and would introduce a much greater impact on marine mammals, fish and shellfish due to the much louder percussive piling requirements. Piling has been reported to negatively impact giant scallops, for example (Jézéquel et al, 2022). Fixed foundation options can therefore be discounted as an alternative means of delivering the Project.

The Project has extensively considered and assessed the options to deliver the 1,350 MW capacity using different combinations of turbines and capacities which will be available from manufacturers within the Project timeline, as shaped by the driving planning and policy laid out in **EIAR Vol. 2, Chapter 3: Policy and Legislative Context**. For the purposes of the EIAR, an envelope of design options has been identified and assessed and a worst-case scenario for each design component has been used to estimate impacts and effects on relevant environmental and socio-economic receptors. Due to the increase in foundation size required for larger capacity turbines, the overall footprint from the mooring anchors or piles is also shown to increase. That is to say, the use of fewer, larger turbines actually creates a greater negative impact on the protected features of the ncMPA than the use of a greater number of smaller turbines. The worst-case scenario for seabed interactions assessed within the relevant technical chapters of the EIAR (i.e. Marine Water and Sediment Quality, Benthic Ecology, Fish and Shellfish Ecology, etc.) and the MPA Assessment is for the largest turbine option, which has the largest foundation design and mooring and anchor footprint. However, the difference between the turbine scenarios, in terms of mooring and anchor footprint, is only 0.002 km², which does not represent a substantially lower risk to the EGMF ncMPA

Alternative mooring and anchor solutions, such as catenary designs, were considered earlier on in the project development and discounted due to the potential increase in negative impact on the ncMPA. Any similar alternative that would increase the risk to the ncMPA achieving its objectives and can therefore be discounted from this process.

Novel mooring and anchor solutions, which may further reduce the impact within the ncMPA will be considered as the Project progresses. This has already been identified within the EIAR and the project envelope through the inclusion of semi-taut and taut mooring configurations. The taut designs under consideration by the Project include those which would aid a semi-submersible or Tension Leg Platform (TLP) foundation design in station keeping. The TLP design utilises a completely taut tendon-based mooring system, whilst the semi-submersible could include a combination of taut wires or ropes. Neither of these mooring systems make contact with the seabed beyond the anchors.

Additionally, the worst-case scenario for temporary seabed disturbance during construction assumes that the mooring system will be pre-laid and fully placed on the seabed temporarily until the floating

substructures are towed to site and ready for hook-up, enabling them to be installed immediately on arrival at the Array Area. A Jack up vessel will be used in support of OSCPs commissioning while DP vessels will be used in support of other activities e.g. IAC installation and FTU installation (mooring hook-up). The project is also considering alternative options for mooring installation methods that would minimise the mooring line length that is pre-laid and placed on the seabed and would reduce the area of temporary seabed disturbance.

Alternative technologies which achieve the same or similar results in terms of seabed impacts could include those which support a spar or barge foundation design. However, the spar foundation type cannot be delivered using any Scottish or UK ports and would not support the objective to support upscaling the floating offshore wind supply chain in Scotland. Similarly, the barge sub-structure design is highly reliant on concrete as a primary material (which the Project has ruled out for environmental reasons) and there are limited design options and construction facilities in the UK, making this option less technically or commercially viable for the Project.

For this reason, delivery of the project through alternative foundations and mooring systems are not considered to be feasible alternatives. Either the Project already considers them in the project envelope, and they present no significant change to the potential level of impact from the Project, or they are not feasible whilst meeting the Project's environmental and supply chain objectives.

5.3.3.2.3 Number of export/import cables

Beyond the potential impact associated with the Array Area, the EICC represents another pathway for disturbance of the seabed and impact to the protected features of the ncMPA. The Project originally considered the potential for two EICC routes, as detailed in the 2023 Scoping Report (Cenos, 2023). This has since been refined through detailed route optioneering which considered environmental and socio-economic factors, and feedback from stakeholders, and has been reduced to a single, well-defined EICC.

As the Project is being developed to deliver electrification to oil and gas infrastructure, an alternative design where an EICC is not required could be proposed. However, the oil and gas production facilities require a constant supply of power, including when there is no wind resource available to generate electricity. The EICC is therefore required to enable the oil and gas facilities to receive power from the grid when the wind turbines cannot generate sufficient electricity to keep the facilities running. Without the EICC, there would also be no option to export excess electricity back to the grid during times of high yield and low use, as well as following the decommissioning of the oil and gas assets.

Between Mean High Water Springs (MHWS) and the 12 NM Scottish inshore waters boundary, the Project will utilise the consented inshore section of the NorthConnect cable route (Marine Licence 06771 and 06870) For the offshore waters between the 12 NM boundary and the Array Area, the EICC follows the route as set out in Section 5.3 of **EIAR Vol. 2, Chapter 5: Project Description**. The offshore portion of the EICC which falls within the EGMF ncMPA has been routed to minimise potential impacts to the protected features (i.e. through avoidance of known quahog aggregations, etc.) of the site. As such any other routes or alternative means of locating and protecting the cable would still have to go through the ncMPA, whilst still considering impacts to surrounding infrastructure and other receptors (as has been done with the Project EICC), and therefore would not substantially lower the risk of harm to the ncMPA objectives.

An alternative route for the EICC can also be ruled out of the feasible options for delivering the Project.

5.3.3.2.4 Cable burial or protection methods

Within the Array Area, there are a number of IACs that connect the FTUs to the OSCP(s) which will interact with the seabed and may have to cross other infrastructure on the seabed, such as pipelines or other cables. The Project has yet to finalise the layout of its turbine locations and IACs. However, as a worst-case, the **EIAR** and **MPA Assessment** provide an assessment of impacts resulting from 350 km total IAC lengths, with 280 km of cable buried in the seabed sediment.

In line with the Scottish Government's National Marine Plan and best practice, these cables will be buried to ensure their integrity and protect other sea users from incidents (e.g. snagging by fishing gears or anchors, etc.). Although the final array design and IAC layout is still to be defined, the selected design will be implemented to include burial of the IACs in line with the Project Design Envelope detailed in **EIAR Vol. 2, Chapter 5: Project Description**.

As such, there are no feasible IAC alternatives that would substantially reduce the impact on the designated features of the EGMF ncMPA and this alternative component of the Project can be discounted

5.3.3.2.5 Alternative timing

The urgency of the Scottish and UK offshore wind, net zero and oil and gas decarbonisation targets establishes a clear need for the Project to be delivered as soon as possible. As indicated in Section 5.3.3.1.3, there are no other offshore wind projects in Scottish waters sufficiently progressed to meet the NSTD decarbonisation targets.

Delivery of the Project at a later point in time cannot be considered a feasible alternative.

5.3.3.2.6 Conclusions

A summary of the alternative options by "other means" is presented below in Table 5-4.

Table 5-4 – Assessment of 'other means' to deliver the Project

ALTERNATIVE SCENARIO	DOES THE ALTERNATIVE MEET THE PROJECT OBJECTIVES							FINANCIALLY FEASIBLE	TECHNICALLY FEASIBLE	LEGALLY FEASIBLE	CONCLUSION
	TO GENERATE LOW CARBON ELECTRICITY FROM OFFSHORE WIND FARMS IN SUPPORT OF THE DECARBONISATION OF THE SCOTTISH ELECTRICITY SUPPLY;	TO EXPORT ELECTRICITY TO THE SCOTTISH ELECTRICITY GRID TO SUPPORT SCOTTISH COMMITMENTS FOR OFFSHORE WIND GENERATION AND SECURITY OF SUPPLY;	TO GENERATE AND DELIVER SIGNIFICANT CAPACITY OF LOW CARBON ELECTRICITY TO EXISTING OIL AND GAS INFRASTRUCTURE TO MAXIMISE THE DECARBONISATION OPPORTUNITY IN SCOTTISH WATERS;	TO OPTIMISE GENERATION AND EXPORT CAPACITY WITHIN THE CONSTRAINTS OF AVAILABLE SCOTTISH SITES AND ONSHORE TRANSMISSION INFRASTRUCTURE	TO LEAD THE SCALING UP OF FLOATING OFFSHORE WIND SUPPLY CHAIN IN SCOTLAND, WITH THE ASSOCIATED ECONOMIC DEVELOPMENT BENEFITS FOR SCOTLAND;	TO CONTRIBUTE TOWARDS THE MEETING OF SCOTTISH AND UK GOVERNMENT TARGETS RELATING TO CLIMATE CHANGE AND NET ZERO AND HELP ADDRESS THE GLOBAL CLIMATE EMERGENCY BY DELIVERING A SIGNIFICANT VOLUME OF OFFSHORE WIND IN SCOTTISH WATERS IN THE 2030S; AND	TO ENSURE THAT, IN THE LONG TERM, ENERGY IS AVAILABLE TO CONSUMERS AT THE LOWEST POSSIBLE COST TO ENSURE THE HIGHEST QUALITY OF LIFE.				
Size of the project area	Possibly - Would deliver low carbon energy but would not maximise the opportunity nor fully meet the Scottish decarbonisation target	Possibly - Would meet the objective but would fail to the maximum benefit available	No - Would lower the Project's ability to contribute to the decarbonisation of oil and gas infrastructure in Scottish water	No - A smaller Project area would reduce the ability to optimise the Project lease are and maximise the limited space available	No - Reduction of the Project location would hinder the Project's contribution to scaling up the floating offshore wind supply chain in Scotland.	No - Would not deliver the full opportunity to contribute to the UK and Scottish targets.	No - Reduces the ability of the Project to utilise the allocated seabed lease and scale of the project to lower costs	Not assessed as not a feasible alternative.	Yes	Yes	Reductions or changes to the area of the Project would reduce or remove its ability to meet the Project objectives.
Alternative foundations and mooring system	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	No - Fixed offshore wind is not feasible in the Project location and alternative foundations and moorings are already incorporated in the project envelope thus there would be no substantial change	Not assessed as not a feasible alternative	No	Not assessed as not a feasible alternative	Fixed foundation would not be technically feasible in the Project location. Alternative mooring and floating foundations are already considered in the project envelope, therefore there would be no substantial change in impact.
Number of export/import cables	No - Would not contribute any low carbon energy to the Scotland without the Project EICC	No - Would not contribute to this objective	No - Would meet this objective but is not considered feasible as the oil and gas infrastructure requires constant supply of electricity which cannot be achieved	No - Would not contribute to this objective as no electricity would be supplied to shore	Possibly - May meet this objective but it is not considered feasible as the oil and gas infrastructure requires constant supply of electricity which cannot be achieved	No - Would not contribute to this objective as n electricity would be supplied to the grid.	No - Would not contribute to this objective as the lack of a grid connection would mean the project would rely solely on private purchase agreements that would be more expensive due to lack	Not assessed as not a feasible alternative	Yes	Not assessed as not a feasible alternative	Removing or reducing the EICC would result in the Project being unable to deliver electricity to the onshore grid and would remove any opportunity for supply of electricity

ALTERNATIVE SCENARIO	DOES THE ALTERNATIVE MEET THE PROJECT OBJECTIVES							FINANCIALLY FEASIBLE	TECHNICALLY FEASIBLE	LEGALLY FEASIBLE	CONCLUSION
	TO GENERATE LOW CARBON ELECTRICITY FROM OFFSHORE WIND FARMS IN SUPPORT OF THE DECARBONISATION OF THE SCOTTISH ELECTRICITY SUPPLY;	TO EXPORT ELECTRICITY TO THE SCOTTISH ELECTRICITY GRID TO SUPPORT SCOTTISH COMMITMENTS FOR OFFSHORE WIND GENERATION AND SECURITY OF SUPPLY;	TO GENERATE AND DELIVER SIGNIFICANT CAPACITY OF LOW CARBON ELECTRICITY TO EXISTING OIL AND GAS INFRASTRUCTURE TO MAXIMISE THE DECARBONISATION OPPORTUNITY IN SCOTTISH WATERS;	TO OPTIMISE GENERATION AND EXPORT CAPACITY WITHIN THE CONSTRAINTS OF AVAILABLE SCOTTISH SITES AND ONSHORE TRANSMISSION INFRASTRUCTURE	TO LEAD THE SCALING UP OF FLOATING OFFSHORE WIND SUPPLY CHAIN IN SCOTLAND, WITH THE ASSOCIATED ECONOMIC DEVELOPMENT BENEFITS FOR SCOTLAND;	TO CONTRIBUTE TOWARDS THE MEETING OF SCOTTISH AND UK GOVERNMENT TARGETS RELATING TO CLIMATE CHANGE AND NET ZERO AND HELP ADDRESS THE GLOBAL CLIMATE EMERGENCY BY DELIVERING A SIGNIFICANT VOLUME OF OFFSHORE WIND IN SCOTTISH WATERS IN THE 2030S; AND	TO ENSURE THAT, IN THE LONG TERM, ENERGY IS AVAILABLE TO CONSUMERS AT THE LOWEST POSSIBLE COST TO ENSURE THE HIGHEST QUALITY OF LIFE.				
			through offshore wind alone.		through offshore wind alone.		of CfD support for the remaining capacity.				to oil and gas infrastructure when there is no wind resource available. As such, this is not a feasible alternative.
Cable burial or protection methods	No other feasible methods were identified	No other feasible methods were identified	No other feasible methods were identified	No other feasible methods were identified	No other feasible methods were identified	No other feasible methods were identified	No other feasible methods were identified	Not assessed as not a feasible alternative	No	Not assessed as not a feasible alternative	The Project has already identified possible IAC burial and protection methods and as such no other feasible alternatives that would substantially lower the risk to achieving the conservation objectives of the EGMF ncMPA.
Alternative timing	No - Later delivery of the project would not contribute to meeting the decarbonisation of the Scottish electricity supply	Possibly - Would meet the objective at a later date but this not considered feasible as offshore wind is required urgently to meet these objectives now	No - Would not contribute to this objective as later delivery of the project would reduce the ability to decarbonise the oil and gas sector in line with the NSTD timing	No - Would not contribute to this objective seabed allocated for offshore wind development would be left unused	No - The opportunity to lead the scaling up of the floating offshore wind would be lost.	No - Later delivery of the Project would jeopardise contribution to this objective	No - Delaying the project would not contribute to this objective.	Not assessed as not a feasible alternative	Yes	Yes	The Project is urgently required to meet the net zero, oil and gas decarbonisation and supply chain targets. Delaying the project would remove contribution to a number of project objectives.

5.3.1 Step 4: Assess the other means/alternatives

Stage 4 considers an assessment of the other means available to deliver the Project to determine if they present a substantially lower risk of hindering the achievement of the EGMF ncMPA. As no feasible alternative has been presented, this assessment is not required.

5.4 Conclusion

The purpose of this section has been to demonstrate objectively to the Scottish Ministers that there are no other means to deliver the Project that meet both the Project objectives and wider offshore wind, climate change mitigation, and decarbonisation targets of Scotland and the UK. The Applicant has undertaken a comprehensive assessment of alternatives with specific consideration of “other means” and “other locations”. None of the alternatives considered have been demonstrated as feasible.

6 Public Benefit

6.1 Overview

In the absence of any other means of proceeding with a project that would substantially lower the risk of hindering the achievement of the objectives of a ncMPA, both the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 require that it be demonstrated that the public benefit of the project "clearly outweighs" the damage to the environment that will be created by the project.

This section provides evidence that the public benefit of proceeding with the Project is far greater than the potential harm that will be created by the project. It is considered that this argument is sufficient to satisfy Scottish Ministers that this requirement has been met.

As there is lack of specific examples and guidance available to shape this argument, the following sections have considered examples of Imperative Reasons of Overriding Public Interest (IROPI) from recent derogation cases under the Habitat Regulations.

This section is supported by and draws upon the following sections of the EIAR:

- **EIAR Vol 2, Chapter 2: Need for the Project;**
- **EIAR Vol 2, Chapter 3: Policy and Legislative Context**
- **EIAR Vol 2: Chapter 20: Carbon and Greenhouse Gasses;** and
- **EIAR Vol 2, Chapter 19: Socio-economics, Tourism and Recreation.**

A Planning Statement also accompanies the Project application which provides more detail on specific legislation and policy.

6.2 Approach

A project must demonstrate that the public benefit clearly outweighs the risk of damage to the environment in order for the project to proceed. The relevant sections of the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 are provided in Section 2.2 above.

Determining that the public benefit of the Project clearly outweighs the risk of damage to the ncMPA must necessarily take into account the overall objectives of the ncMPA and the level of harm that could occur.

As described in the MPA assessment overview at Section 3 above, the maximum negative impact of the Project has been assessed as

- 6.73 KM² temporary footprint on the seabed (0.37% of total EGMF ncMPA) and
- 1.569 KM² permanent footprint on the seabed (0.08% of total EGMF ncMPA).

The Applicant's clear position is that the impact on the EGMF ncMPA from the Project is minimal and does not constitute significant harm to any of the protected features of the site. That this harm may be determined by MD-LOT to be sufficient to require consideration of a derogation case does not increase or otherwise change the assessed level of impact.

Accordingly, the approach to considering the public benefit will weigh the potential benefit of the Project against the predicted harm outlined above.

The IROPI discussion and recent derogation cases considered in Scotland and the UK for offshore wind present a useful list of topics to help establish the public benefit. These include consideration of whether the Project is required, indispensable or essential. They also describe the need for the

public benefit to be long-term and not merely a short-term benefit. Further, the benefit must be to the public rather than only a private interest.

The sections below consider these factors in turn and outline the case for a clear imbalance between the large public benefit from the Project and the minimal impact to the EGMF ncMPA.

6.3 Public benefit assessment

6.3.1 The Project is required

There is a clear and established need for the Project to be delivered. Section 5.3.3.1 above considered this requirement in the context of the Project locations and Section 5.3.3.2 in the context of Project design. Here, the case for the Project to be delivered as soon as possible to meet overarching policy drivers is described.

Justification for the Project is based around the need for the Project, as summarised in Section 4 of this report and detailed in **EIAR Vol. 2, Chapter 4: Need for the Project**, with the most important aspect being the key contribution towards combatting climate change and providing energy security for both Scotland and the UK. These reasons can be described in terms of: 'human health', 'public safety' and 'beneficial consequences of primary importance to the environment.' These headings align with considerations of IROPI.

6.3.2 Human health

As described within Section 4, climate change is a significant risk to human health throughout the globe. The latest IPCC report (AR6) concludes that without immediate, rapid and large-scale reductions in greenhouse gases (GHG), limiting global warming to 1.5°C or even 2°C will be beyond reach. Some of the outcomes of climate change that will impact human health include: extreme weather events resulting in droughts, floods and heat waves, rising sea levels which will dramatically alter coastlines, watersheds and flood plains; and catastrophic damage to the environmental systems and resources on which humans rely to survive. This includes significant risk to land access, water resources and agricultural systems, as well as anticipated increases in the spread of diseases due to increased average temperatures posing a risk to the health and safety of humankind, including citizens of Scotland and the UK..

While there are a range of projects throughout the UK to assist with decarbonisation (e.g. other offshore and onshore wind projects; CCUS projects; solar and marine renewable energy projects, etc.), there are not a sufficient number of projects currently proposed for the Scottish Government to reach its 2045 net zero target, or the UK Government to meet its 2050 or 2030 net zero targets. It is considered that not only is the contribution of the Project key to meeting the 2045 and 2050 targets, but it is also imperative to overcoming climate change and reducing the risk of climate-related impacts on human health in the UK.

Furthermore, given the low average temperatures characterising the Scottish climate, it is imperative for human health that there is a secure and reliable energy supply available to the consumer. The Applicant considers that developing the Project will contribute to all these factors in improving human health.

6.3.3 Public safety

Given the dependence of the UK on electricity for almost all aspects of daily life, and the increasing demand for energy from all facets of the public and private sectors (see Section 2 - Legal Framework and Relevant Guidance), it is considered that the security of supply is a matter of public safety.

Reducing our dependency on foreign imported energy is key to ensuring a strong and secure supply for the UK.

As stated in the British Energy Security Strategy (HM Government, 2022), this need for increased UK supply has been evidenced by Russia's invasion of Ukraine, which resulted in a significant increase in the price of imported gas and coal (over 200% and 100% in 2021). The British Energy Security Strategy also states that:

'The cleanest and most secure way to do this [reduce imports while ensuring we have enough energy] is to source more of it domestically with a second lease of life for our North Sea'.

It is clear that there is an urgent need for electricity sources which are UK-based and do not rely on imported fossil fuels. The Project will help to protect against rapid fluctuations in energy prices impacting access to common resources (e.g. transportation fuels; natural gas for heating and cooking; electricity; etc.), delivery of services and goods to the public (e.g. public transportation services; industrial processes and manufacturing; heating and electricity in public buildings – schools, hospitals, etc.) and general quality of life in the UK. Additionally, this transition to a UK-based renewable energy resource will also increase the predictability of supply to the public.

As the Project would provide a significant contribution to the provision of renewable energy in Scotland and the UK, it is considered that this contribution to public safety via increased energy security is a sufficient demonstration of public benefit alone.

6.3.4 Beneficial consequences of primary importance to the environment

Climate change is widely considered to be one of the greatest threats to the planet in human history. Predicted impacts extend beyond the human environment, as increasing global temperatures above the suggested 1.5°C will also result in significant ecological damage. This includes significant impacts on terrestrial species and habitats, soils, natural carbon stores (potentially releasing more GHG into the atmosphere and accelerating the impacts of climate change), agricultural and forestry productivity, marine species (including but not limited to marine mammals, seabirds, and habitats), and fisheries.

The rising global temperatures have been recorded as having an impact on higher trophic predators, such as marine mammals, sharks and other marine megafauna. Impacts include significant changes in prey distributions, which can affect marine predator populations either through indirect changes in distribution or abundance, or through direct environmental effects which may result in catastrophic population declines or species extinctions. For example, the number of marine megafauna deaths directly attributable to climate-related changes has soared in recent years, with mass die-offs being reported across the globe. For instance, in 2019, an estimated 300 gray whales were found dead along the North American coastline, believed to be due to starvation caused by changes in prey availability (Moore, 2020). More concerning, a study by Boyce *et al.* (2022) found that nearly 90% of surface dwelling (i.e. upper 100 m of the water column) marine species are at risk of extinction by the end of the century, should climate change go unabated and sea surface temperatures rise by 2°C. The vast majority of marine predators occupy surface waters, and all marine mammals are reliant on surface waters for gas exchange, so this study bolsters the current understanding of the irrevocable ecological damage which may be caused to the marine environment from climate change.

Seabirds are also known to be significantly impacted by climate change due to extreme weather events, which may reduce the ability of seabirds to forage and find food, leading to starvation and death. When such impacts on individual fitness becomes pervasive in populations, these events can generate rapid population declines. Periodic mass mortality events known as "wrecks" can also

occur, when large numbers of dead seabirds are washed ashore. Poor weather can also reduce breeding success through nest flooding and has the potential to hinder seasonal courtship and mating activities and/or access to potential mates as the character and timing of the seasons becomes more difficult to predict. However, due to the complex nature of marine food webs and the enigmatic life histories of many seabirds, understanding of seabird responses to climate change remains poorly understood. An illustration of these complexities is of Arctic skua in Scotland which experienced an 81% decline between 1992-2015 which is thought to have resulted from a change in food web interactions influenced by a combination of factors including fisheries management and climate change (Perkins et al., 2018).

The results of the latest published seabird census, *Seabirds Count*, revealed that almost two thirds of Scotland's breeding seabird species have declined over the past twenty years due to compounding environmental pressures (RSPB, 2023). One of the primary drivers is the decline of prey stocks due to increasing sea surface temperatures and ocean acidification resulting from increased oceanic dissolved carbon; these interlinked changes can lead to a rapid decline in seabird populations (Johnston *et al.*, 2021). Climate related impacts to seabird prey species are most notable on sandeel populations around Scotland, a key food source for many seabird species. Changes in sandeel availability have been related to rising sea surface temperature, altered water column stratification, and the North Atlantic Oscillation (Johnston *et al.*, 2021). Sandeel availability is particularly important during seabird breeding, when reductions in the quality and quantity of prey available can reduce reproductive fitness and seabird breeding success. This can have dramatic consequences for populations under additional pressures from anthropogenic, epidemiological, or other environmental sources.

Furthermore, much of the marine environment in and around Scotland is influenced by the Atlantic Meridional Overturning Circulation (AMOC), which brings warm water from the tropics to the UK. This regulates temperatures in Scotland, both in the marine and terrestrial environments (McCarthy *et al.*, 2023). In recent years, the AMOC has been observed to be weakening, primarily driven by an increase in cold fresh water from the melting of Arctic Sea ice, which disrupts the circulation of the denser salt water which drives the flow of the AMOC. It is considered that, as the AMOC weakens, the climate will change, particularly in the Northern Atlantic region which includes Scotland (Johnston *et al.*, 2021).

Recent studies have estimated that following the current scenario of ever-increasing GHG emissions, the AMOC would collapse imminently, around the mid-century (Ditlevsen and Ditlevsen, 2023). It is considered that if the AMOC does collapse, there would be significant impacts on the marine environment, including: significant shifts to circulation and dispersal mechanisms for marine species (including eggs and larvae); shifts in prey species abundance and distribution due to temperature changes; secondary shifts in predator species abundance and distributions due to changes to prey populations; loss of coastal and glacial breeding habitats by semi-aquatic species (e.g. shorebirds and pinnipeds); and changes in ocean chemistry, including salinity and nutrient levels, which can disrupt growth and development, chemical signalling, alter underwater noise propagation and increase the prevalence of environmental toxins (e.g. from harmful algal blooms). Collectively, such environmental impacts on seabirds and marine megafauna populations are likely to result in significant population and species declines.

With respect to human impacts resulting from the AMOC collapse, there would likely be a significant reduction in temperature and a shift in precipitation patterns (Jackson *et al.*, 2015; McCarthy *et al.*, 2023) which would result in a significant loss of arable farming land, affecting the quality of life for many people in the UK with respect to food availability and economic income. Storm frequency and intensity is also expected to increase, generating persistent and serious threats to human life around the world (McCarthy *et al.*, 2023).

A key step in significantly reducing Scottish carbon emissions before 2030 is recognised to be the electrification and decarbonisation of the existing oil and gas industry in the North Sea (NSTD, 2021). Emissions from the fossil fuel supply sector were 33 $MTCO_2e$ in 2022, which represented 7% of the UK total. Around 87% of the emissions came from oil and gas production, processing and refining (CCC, 2023). The Project will provide renewable electricity to oil and gas assets, as well as to consumers via the consented onshore grid connection, and will commercially support the decarbonisation of North Sea oil and gas operations.

It is considered that the Project will be able to provide a significant contribution (up to 1.35 GW) to the immediate, rapid, and large-scale decarbonisation of the UK's energy supply and decarbonisation of oil and gas platforms, which is one of the key mechanisms for preventing further increases in global temperature via climate change. Therefore, the Project presents significant beneficial consequences which are of primary importance to the environment, by preventing the further loss of key marine and coastal habitats and species, and secondary impacts to other species, including humans, which are reliant upon them.

The Project also provides a specific benefit to the EGMF ncMPA that must be discussed in the context of public and environmental benefit. The EGMF ncMPA was established as a protected site in 2014. However, there are no active management measures in place for the ncMPA and no protections for the important features for which the ncMPA was designated have been implemented. As has been clearly established in the **MPA Assessment** and the relevant EIAR chapters (e.g. Benthic Ecology, Commercial Fisheries, Shipping and Navigation, etc.), the protected features of the EGMF ncMPA are very sensitive to seabed disturbance. These same sections of the EIAR also clearly demonstrate that there is currently bottom trawling fishing effort within this protected site, including the Project's Array Area.

In August 2024, the Scottish Government began a consultation on proposed *Fisheries management measures within Scottish Offshore Marine Protected Areas* (MPAs) (Scottish Government, 2024a). The measures proposed for the EGMF ncMPA could eliminate some of demersal fishing activity within the site, with a focused ban on mechanised dredging and beam trawling. However, these measures do not propose a full ban on all gear types, with zonal exclusions for other methods of bottom trawling (e.g. otter trawls) and no restrictions presented for demersal seines, and thus damaging fishing methods which make contact with the seabed could continue within the EGMF ncMPA. These measures, if implemented, would therefore still allow activities which have the potential to disturb the seabed to continue over the extent of the site.

The Project has assessed and predicted a worst-case impact scenario of 1.569 KM² (0.08% of the EGMF ncMPA) long term impact. Demersal trawling activity over the last three years has also been assessed by the Project and has been shown to total to 6,395 km in terms of distance trawled. This equates to a minimum of 159 km² (and up to 415 km²) of trawled area within EGMF ncMPA alone.

As the Project will use floating technology, it is presumed that commercial trawling activity will not continue within the Array Area. This is due to the conflict between long towed gear and the Project's mooring lines and cables which will be suspended within the water column, and the safety risk their interaction would present. There is no legal method to enforce the separation of commercial fishing and offshore wind activities, but it is an expected outcome due to the nature of the Project's design, and the likelihood that fishers will want to reduce their risk of snagging gear on offshore wind infrastructure. This mutually exclusive use of the area has been accepted by the Scottish Government (2020) in the Sectoral Marine Plan for Offshore Wind Energy and associated assessments.

It therefore follows that the Project will physically protect 333 km² of the EGMF ncMPA from damaging fishing practices for the lifetime of the Project, which would equate to a 429.6 km²

reduction in demersal trawling activity within the site. In which case, the Project will substantially increase the likelihood of achieving the objective of the EGMF ncMPA when compared to the current situation.

For the reasons detailed above, the Project is considered to provide a significant contribution to the provision of renewable energy and environmental benefit, and there is clear public benefit in the form of beneficial consequences of primary importance to the environment alone. This is specifically demonstrated above with reference to the reduction of impact on the seabed through removal of fishing pressures. However, the contribution to tackling climate change and removing additional oil and gas emissions provides a wider benefit. Similarly, the choice of technology and embedded mitigation further reduces environmental impact of the Project.

6.3.5 Social and economic benefits

The public benefit of the Project goes further still and includes substantial economic benefit to both Scotland and the wider UK. Not only will the supply of low cost energy that is reliable (as detailed within Sections 4.3 and 4.4) result in economic benefits for consumers, but the Project will provide substantial benefits to the UK economy, including facilitating confidence in the Scottish, UK, local and regional supply chains, growing a skilled workforce, and providing wider community benefits while also working towards a Just Transition away from fossil fuels in Northeast Scotland.

6.3.6 Employment and Gross Value Added

Office for National Statistics (ONS) publishes the GVA of UK local authorities as an indication of the size of the local economy and its local contribution to national output (Office for National Statistics, 2024a). The contribution of a project to the local, regional, and national GVA is a key metric showing its contribution to economic growth. In 2022, Aberdeen City had a GVA of £10.8 billion with Aberdeenshire at £7.1 billion (Office for National Statistics, 2024b). As a combined GVA of £17.9 billion this represents 10.8 % of the Scottish economy and 0.8 % of the UK economy.

Given the location of major ports that are expected to be utilised during the construction, operations and maintenance, and decommissioning of the Project, Aberdeen City and Aberdeenshire are likely to experience many of the economic benefits associated with the Project.

Employment benefits during the construction, operation and maintenance and decommissioning phases of the Project includes direct, indirect and induced Full Time Equivalent (FTE) roles and includes those that are involved in the development, construction, manufacture and installation of the Project's structures and components and additional jobs created by the household income expenditure.

The GVA receptor includes the direct, indirect, and induced GVA created directly and indirectly by all construction, operation and maintenance and decommissioning activities including the associated supply chain and associated household income generated by increased employment. Effects associated with the GVA receptor are beneficial.

The effects of the Project on GVA and employment were modelled in EIAR Vol 3, Chapter 19 Socio-economics, Tourism and Recreation. As outlined in the Assessment Methodology (Section 19.5, EIAR Vol 3, Chapter 19 Socio-economic, Tourism and Recreation), this presented scenarios of expected expenditure, employment and GVA benefits during the construction, operation and maintenance, and decommissioning phases of the Project.

6.3.6.1 Construction

For the Aberdeen City and Aberdeenshire spatial area, it is estimated that the expenditure could generate employment of up to 4,021 FTEs over the pre-construction and construction phase. At the Scotland level, the estimated employment generated by the expenditure could be up to 20,037 FTEs over the pre-construction and construction phase. In the peak employment year of construction up to 1,588 FTEs could be generated in the Aberdeen City and Aberdeenshire area and up to 4,941 FTEs generated in Scotland.

For the Aberdeen City and Aberdeenshire spatial area, it is estimated that the expenditure could create a GVA of up to £378 million total GVA generated during the pre-construction and construction phase. At the Scotland level, the estimated GVA generated by the pre-construction and construction phase could be £1,950 million.

Total GVA generated during the peak expenditure year of the construction phase could be up to £115 million for Aberdeen City and Aberdeenshire and up to £462 million for Scotland.

These are considerable benefits for the local and wider Scottish economy and workforce.

6.3.6.2 Operation and Maintenance

Job creation is a strategic and policy priority for both Scottish and UK Governments. Given the longer-term shift to net zero and the transition away from oil and gas, there is a potential for job losses in the oil and gas sector over coming decades. On the national level, however, the labour market has a high level of adaptability and workforce from the oil and gas sector could be redeployed to the renewables sector.

It is estimated that over the operation and maintenance phase, the Project could create employment of up to 725 FTEs for the Aberdeen City and Aberdeenshire spatial area and up to 999 FTEs for Scotland.

For the Aberdeen City and Aberdeenshire spatial area, it is estimated that the total annual GVA generated over the operation and maintenance phase of the Project could generate up to £55 million. At the Scotland level, the estimated total annual GVA generated over the operation and maintenance phase could be up to £79 million.

There are considerable benefits to the local and wider economy that will last for the duration of the operational life of this Project if not beyond.

6.3.6.3 Decommissioning

In the absence of detailed information regarding decommissioning works, the impacts during the decommissioning of the Project are considered analogous with, or likely less than, those of the construction phase.

The development of Cenos OWF could result in a significant contribution to both Scotland and the wider UK through the investment in the supply chain and construction, operation and decommissioning of the OWF.

6.3.7 Public and private benefits

It is noted that, while the Applicant is a private entity, the Project fills an essential public need, as evidenced above. The benefits extend beyond those for the Applicant, to all citizens of Scotland and the UK, and arguably across the North Sea and Northeast Atlantic as well.

The identification and development of offshore sites and the Scottish INTOG SMP IPF Option Areas (including Cenos Offshore Windfarm) is a fundamental national policy pursued within a clear framework. This seeks to protect the environment and human health from the consequences of energy supply shortages and climate change and promote public safety. The Project is also consistent with the commitments in the NSTD for decarbonisation of oil and gas assets and can make a meaningful contribution to these urgent objectives.

The primary public benefit relates to climate change, which as established above is a significant threat to everyone on a global scale. The Project helps to combat this by offsetting the amount of GHG released in the production of energy. Furthermore, increasing energy security is a key public benefit, both ensuring a more robust and reliable supply of energy and reducing the cost of energy (as detailed above).

Without the Project, it is considered that the urgent need to mitigate climate change is not being adequately managed, and many Scottish and UK policies and legislation are not being met. These standards and principles are implemented with the aims of providing public benefits, and therefore the contribution of the Project to key climate policy and legislation will result in a clear public benefit.

Overall, it is considered that the contribution of the Project to combatting climate change, the decarbonisation of Scotland and the UK's energy supply, the decarbonisation of oil and gas platforms, increasing the security and affordability of supply, and meeting national policy targets are all indisputable public benefits. Therefore, there is a clear public need for the Project to proceed.

6.3.8 Long-term interest

Due to the nature of offshore wind farm technology, the timeline for decarbonisation and the temporal scale of climate change, the aspects of public benefit considered above are deemed to be long-term interests. For example, the operational lifetime of the project is 35 years; therefore, the energy supplied by the Project will be of benefit for the long-term, contributing to the supply of electricity well beyond the 2030, 2045 or 2050 net zero targets.

Decarbonisation on the scale required for the UK and Scotland will take a long time to achieve and will continue to increase. Not only is the 2045 net zero target within Scotland still over two decades away and an inherently long-term aim, once it is achieved it will be maintained permanently. The targets are designed to result in a system where there is no future reliance on hydrocarbon or imported fuels, and the environment is protected with significant mitigation afforded to climate change. Given extensive constraints from the currently established energy system (and accompanying infrastructure) within the UK, it is considered that the transition to a purely renewable system will be a gradual one, acting over long-term timescales.

Additionally, the security of supply for Scotland and the UK is considered to be a long-term issue. As the demand for energy is continually increasing, ensuring there is enough supply for the current usage is not adequate and security must be afforded to all potential growth forecasts for energy usage within the UK. It is an essential long-term consideration to ensure Scotland and the UK are fully independent and not reliant on any foreign nations and imported supplies.

The economic benefits of the project will also have a long-term impact. The development of local supply chains will impact Scotland not only during the construction, operation and maintenance of the Project, but the jobs created, infrastructure developed, is likely to endure into future offshore wind projects, helping to entice other development opportunities in the region. Furthermore, the development of the area and predicted increase in jobs may encourage people to move to Aberdeenshire, which may result in increased terrestrial developments in addition to the offshore interest.

6.3.9 Balancing public benefit: Does the public interest 'clearly outweigh' the risk of damage to the environment?

As described above, there is a demonstrable public benefit for the Project to proceed. However, that public benefit must be demonstrated to "clearly outweigh the risk of damage to the environment" that will be created by the Project.

The authority, in this case the Scottish Ministers acting through MD-LOT, must undertake this balancing exercise and determine if the public benefit of the Project clearly outweighs the potential impacts to the environment.

The Applicant has provided the above evidence and considers this more than sufficient to satisfy Scottish Ministers that the Project delivers clear public benefit far in excess of the environmental damage the Project may create.

The MPA Assessment, summarised in Section 3 above, provides a detailed assessment of the worst-case potential damage to the EGMF ncMPA and the protected features therein. It is the Applicant's firm position that this damage, being minimal, means the project is not capable of affecting (other than insignificantly) the protected features nor the conservation objectives of the EGMF ncMPA. Therefore, the need to consider if the public benefit outweighs this damage is unnecessary.

6.3.10 Conclusions

It is considered that the information presented within this section demonstrates to the Scottish Ministers that there is an urgent need for the Project to proceed as planned. This is primarily due to the ever-present threat of climate change, which needs to be responded to as urgently as possible, and with the contribution of low-carbon, renewable energy and decarbonisation of oil and gas platforms, the Project is considered a key part of Scotland's approach to reducing its contribution to climate change.

Rapid decarbonisation of the energy sector not only provides beneficial consequences for the environment, but it is essential for human health and public safety reasons. Therefore, on the basis of human health and public safety above all else, the Project public Benefit clearly outweighs the environmental damage the Project may create.

7 Measures of Equivalent Environmental Benefit

Following the demonstration that there are 'no other means' of delivering the Project that would substantially reduce the risk of hindering the conservation objectives of the ncMPA, and that the public benefit of the Project 'clearly outweighs' the damage to the environment that the Project will create, the authority must then be satisfied that the Applicant will

> *"… undertake, or make arrangements for the undertaking of, measures of equivalent environmental benefit to the damage which the act will or is likely to have in or on the marine protected area concerned"*

The draft guidance on the consideration of MEEB and compensatory measures (under the Habitats Regulations) (Defra 2021), and the more recent consultation on updated guidance clearly outlines a proposed approach to consider and propose MEEB. This included the factors that should be taken into account and the hierarchy of MEEB that should be followed.

Accordingly, the discussion and proposal of MEEB will be as follows

- Establishing the impact
- Reiterate the conservation objectives of the ncMPA
- Determine the level of impact to the features of the ncMPA
- Consider the timescale of the impact
- Consider the certainty of impact.
- Demonstrate the use of the avoid/reduce/mitigate hierarchy

These points and the discussion of adaptive management are discussed in the separate document:

Marine Protected Areas – Measures of Equivalent Environmental Benefit and Implementation plan.

8 Conclusions

The Project has carried out a detailed MPA Assessment to support the application process and provide the necessary information for Scottish Ministers to conclude that the Project will not affect (other than insignificantly) the conservation objectives of the EGMF ncMPA. Accordingly, it is the Applicant's position that a favourable determination of consent for the project can made.

However, should Scottish Ministers conclude that significant impact will occur as a result of the project, the information presented above provides a clear argument for a derogation to be made in accordance with the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010.

The Project is urgent, necessary and the only Targeted Oil and Gas project sufficiently advanced to deliver the Scottish, UK and oil and gas sector decarbonisation objectives. Other means to deliver the project have been shown to fail to meet the Project objectives and wider legally binding Scottish and UK net zero commitments. No alternative locations allow the achievement of these objectives and alternative technology is either incorporated into the project design or would not significantly lower the risk of achieving the objectives of the ncMPA.

Similarly, the public benefit of the Project has been demonstrated to clearly outweigh the minimal damage the Project will create within the ncMPA. In terms of the environmental public benefit, the Project represents a net gain in terms of further reducing the negative impact of fishing effort in the protected area.

Accordingly, the Project firmly establishes the case to proceed with a derogation as it passes the "no other means" and "public benefit" sections of the 2009 and 2010 Acts.

Scottish Ministers can therefore authorise the Project, provided that they are satisfied that the MEEB, discussed in Marine Protected Area: Measures of Equivalent Environmental Benefit and Implementation Plan, are sufficient.

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