Habitats Regulations Appraisal (HRA) – Shadow Without Prejudice Derogation Case

Version Number	Reason for Issue / Major Changes	Date of Change
R01	Issued for Review	04/10/24
R02	Major Changes	06/12/24
R03	Major Changes	18/12/2024
A01	Issued for Use	19/12/2024

Document Code:	CEN001-FLO-CON-ENV-RPT-0078	
Contractor Document Number:		
Version Number:	A01	
Date:	19/12/2024	
Prepared by:	DN/GG	*Electronic Signature*
Checked by:	DM/JS/KN	*Electronic Signature*
Approved by:	DM	*Electronic Signature*

Table of Contents

Acronyms

ACRONYM	DEFINITION
AA	Appropriate Assessment
AC	Alternating Current
AEoSI	Adverse Effect on Site Integrity
AMOC	Atlantic Meridonal Overturning Circulation
AR6	6th Assessment Report (IPCC)
BEIS	Department for Business Energy and Industrial Strategy (now the Department for Energy Security and Net Zero)
BESS	British Energy Security Strategy
CCA	Climate Change Act 2008
CCC	Climate Change Committee
CES	Crown Estate Scotland
CfD	Contracts for Difference
CNS	Central North Sea
CNP	Critical National Priority
CO_2	Carbon Dioxide
COP	Cease of Production
COVID-19	Coronavirus Disease 2019
DC	Direct Current
DESNZ	Department for Energy Security and Net Zero (formerly the Department for Business Energy and Industrial Strategy)
EC	European Commission
EEZ	Exclusive Economic Zone
EIAR	Environmental Impact Assessment Report
EICC	Export/Import Cable Corridor
ESO	Electricity System Operator
EU	European Union

ACRONYM	DEFINITION
GHG	Greenhouse Gas
GVA	Gross Value Added
GW	Gigawatts
FTE	Full Time Equivalent
FTU	Floating Turbine Unit
HM	His Majesty's
HRA	Habitats Regulations Appraisal
HVAC	High Voltage Alternating Current
IAC	Inter-Array Cables
INTOG	Innovation and Targeted Oil & Gas
IPCC	Inter-Governmental Panel on Climate Change
IPF	Iterative Plan Framework
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
JV	Joint Venture
km	Kilometre
LSE	Likely Significant Effect
MCAA	Marine and Coastal Access Act 2009
MD-LOT	Marine Directorate – Licensing Operations Team
MHWS	Mean High Water Springs
MLA	Marine Licence Application
MN 2000	Managing Natura 2000
MW	Megawatt
MWh	Megawatt hour
NGESO	National Grid Electricity System Operator
NMP	National Marine Plan
NM	Nautical Mile

ACRONYM	DEFINITION
NSN	National Site Network
NPS	National Policy Statement
NSTA	North Sea Transition Authority
NSTD	North Sea Transition Deal
ONS	Office for National Statistics
OSCPs	Offshore Substation Converter Platform
OWF	Offshore Wind Farm
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
cSAC	candidate Special Area of Conservation
SCI	Site of Community Importance
SMP	Sectoral Marine Plan
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
pSPA	potential Special Protection Area
TCE	The Crown Estate
UK	United Kingdom
UN	United Nations
WTG	Wind Turbine Generator

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 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.
Developer	Cenos Offshore Windfarm Ltd, a Joint Venture between Flotation Energy and Vårgrønn As (Vårgrønn).

TERM	DEFINITION
E-a	The INTOG Leasing Plan Option area within which the Project is located.
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
Environment 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.
Environment 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.
Environment Impact Assessment Report (EIAR)	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 power from the Offshore Substation Convertor Platform to 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 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.

TERM	DEFINITION
Floating Turbine Unit	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.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Innovation and Targeted Oil & Gas (INTOG)	In November 2022, the Crown Estate Scotland (CES) announced the Innovation and Targeted Oil & 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 Lease 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 either the Marine and Coastal Access Act 2009 or the Marine (Scotland) Act 2010.
Mean Low Water Springs	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).

TERM	DEFINITION
Mean High Water Springs	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.
Marine Protected Area (MPA)	Marine sites up 12 NM from shore protected at the national level under the Marine (Scotland) Act 2010, MPAs beyond 12 NM are protected under Marine and Coastal Access Act (2009). 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.
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 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

TERM	DEFINITION
	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 act as a power distribution substation for the Oil & Gas platforms, 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 the 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
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
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.

1. Introduction

1.1. Background

The North Sea Transition Deal (NSTD), established in March 2021, is a sector deal between the United Kingdom (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 emission reduction targets and investing up to £16 billion by 2030 to reduce sector carbon emissions (Department for Energy Security and Net Zero (DESNZ) (2021). Cenos Offshore Windfarm, here after referred to as the 'Project', aligns with the NSTD by helping drive decarbonisation efforts through providing renewable ('clean') power to offshore oil and gas installations, with surplus power being fed into the UK grid.

In November 2022, Crown Estate Scotland (CES) announced the Innovation and Targeted Oil & Gas (INTOG) Leasing Round, to help enable this sector-wide commitment to decarbonisation. INTOG 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 and help to decarbonise the sector.

The Applicant, Cenos Offshore Windfarm Limited, hereafter referred to as the 'Applicant', is a Joint Venture between Flotation Energy and Vårgrønn As. The Applicant submitted a leasing application under the INTOG Leasing Round and was awarded an Exclusivity Agreement to develop the Project in November 2023. The Project is wholly located in the area INTOG Leasing Plan Option area 'E-a' as defined in the Scottish Government Sectoral Marine Plan for INTOG Initial Plan Framework (Scottish Government 2022a) which was published to set the planning framework and the areas of seabed that will form the spatial footprint for the Crown Estate Scotland (CES) leasing process. The Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020a) ('the Plan') is being updated to provide the planning framework for both the Scotwind and Innovation (IN) and Targeted Oil & Gas (TOG) leasing rounds. The draft plan is due to be published for consultation in spring 2025 with adoption by autumn 2025.

The Applicant is progressing the proposals for the Project. The terms of the Option Agreement are dependent upon the Applicant being awarded all key consents and permissions to construct and operate the Project from the relevant regulatory authorities.

The Project will have an indicative generation capacity of 1.35 gigawatts (GW). The Project comprises a floating offshore windfarm which helps pioneer large-scale floating wind in the UK and the Project shall facilitate decarbonisation of the UK oil and gas industry by provision of renewable power to offshore oil and gas installations, delivering carbon emissions reductions on the UK continental shelf, with far reaching benefits.

The majority of the power from the Project will be exported to the UK grid to support overall UK decarbonisation targets. The Project lifetime is expected to significantly exceed that of the oil & gas assets and will therefore continue to produce renewable electricity after those assets are decommissioned. For the purposes of maximal generated power utilisation by UK oil and gas installations, it is anticipated there will be several connections between the Project and oil and gas assets located in the waters surrounding the Project's Array Area. These connections do not form part of this Project consent application, and Marine Licence Applications for these components will be applied for separately. The Project application area is shown in Figure 1-1.

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.

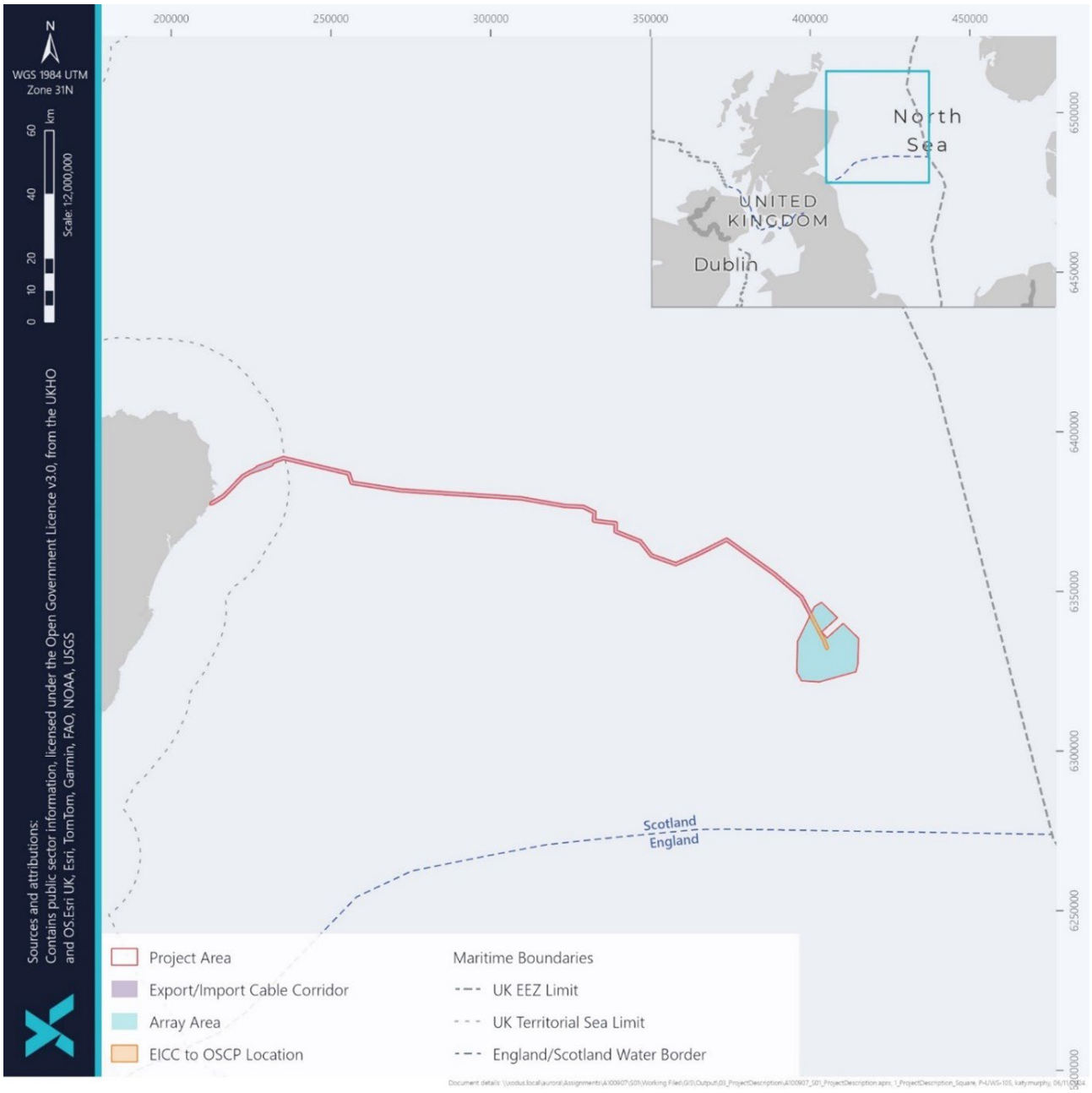

Figure 1-1 Cenos Offshore Windfarm Project Area

1.2. Project Description

The Project is a proposed floating offshore windfarm located approximately 200 kilometres (km) east of Aberdeen in the Central North Sea (CNS). The array area is approximately 333 kilometres squared (km^2) in size. The Project has the potential generation capacity of up to 1.35 GW.

The Project is comprised of the offshore infrastructure required to generate and transmit renewable energy to UK oil and gas installations and the wider UK grid. The subject of this derogation case is the offshore infrastructure only. The Project includes wind turbine generators (WTGs) and associated floating foundations, the Offshore Substation Converter Platforms (OSCPs), their associated foundations and interconnector cables, the inter-array cables and offshore export/import cables to landfall. The Project is located wholly in the UK Exclusive Economic Zone (EEZ), and the offshore export/import cable corridor (EICC) is located within the EEZ in Scottish Territorial Waters. The Applicant is seeking to power oil and gas installations from shore by 2031 and generate renewable electricity from WTG installation by 2032.

A summary of the Project infrastructure is provided below:

- Up to 95 Floating Turbine Units (FTUs), each with a WTG and floating substructure, which will be anchored to the seabed to ensure the FTU remains within an allowable radius for each FTU within the Array Area (station keeping);
- Up to 2 structures for OSCPs within the Array Area, connected to the WTGs using dynamic subsea Alternating Current (AC) power cables (the Inter-Array Cables (IACs)). OSCP topsides will be located on bottom-fixed jacket foundations with 50 metre (m) spacing between jackets. OCSP topsides will be linked via bridge link;
- Up to 350 km of IACs (including 280 km of buried, static cabling, and 70 km of dynamic cabling) which connect the FTUs together; and
- A trenched cable bundle comprising two Direct Current (DC) Export/Import Cables and a fibre optic cable, each with a maximum length of 230 km from the OSCPs to Landfall at Longhaven.

The Applicant has applied for the relevant consents and permissions required to enable construction, operation and maintenance and decommissioning of the Project. The consents, licences and permissions which will be sought by the Applicant for the Project include:

- A Section 36 consent under the Electricity Act 1989;
- A Marine Licence under the Marine and Coastal Access Act 2009 for the generating assets of the Project which are located beyond 12 NM limit within the EEZ; and
- A Marine Licence under the Marine (Scotland) Act 2010 for the offshore transmission infrastructure, which is within 12 NM of the coast, and under the Marine and Coastal Access Act 2009 for the offshore transmission infrastructure located beyond the 12 NM limit within the EEZ.

1.3. Structure of the document

The derogation case demonstrates the need for the Project in the context of the identified potential Adverse Effect on Site Integrity (AEoSI), the absence of alternative solutions, the Imperative Reasons of Overriding Public Interest (IROPI) in the Project proceeding, as well as presenting the compensatory measures to be secured. The derogation case and the compensation measures

documents together provide the necessary information to enable the Scottish Ministers (or other consenting authorities) to grant consent, notwithstanding the risk of AEoSI identified, and demonstrates to these consenting authorities the importance of the Project, and how the benefits outweigh the potential adverse effects that it may have.

This document is set out following the guidance for the derogation provisions of the Habitats Regulations Appraisal (HRA) process (as set out in Section 2.3). The overall structure for the document is as follows:

- Section 1 Introduction – Providing a background to the Project including its purpose, where supporting information can be found, and an overview of consultation undertaken;
- Section 2: Legal framework and guidance – Setting out the legislation underpinning the HRA process, as well as the specific guidance for derogations in Scotland and the examples set by other projects;
- Section 3: HRA Derogations guidance and precedent – Setting out the guidance and precedence of derogation cases in the UK and Scotland;
- Section 4: The need for the Project – Establishing why the Project is required in the context of environmental and socio-economic factors;
- Section 5: No alternative solutions – Demonstrating that there are no feasible alternative solutions to the Project;
- Section 6: IROPI – Identifying the relevant residual adverse effects of the Project and evidencing the public benefits of the Project which are sufficient to override the environmental harm which may be caused;
- Section 7: Compensatory measures – Cross references to the Applicant's proposal for compensatory measure provision;
- Section 8 Derogation case conclusions – Summarising the assessment undertaken to conclude the Applicant's position relating to the derogation case which is that the Scottish Ministers would have sufficient information before them to grant consent, notwithstanding the conclusion of risk of AEoSI in the RIAA; and
- Section 9: References – The full references for all literature/data used throughout the derogation case.

1.4. Supporting information

Given the nature of the derogation case, presented as Stage 3 of the HRA process, this report inherently is based on and is partnered with several other documents. Not all of the information presented within the supporting documents is repeated here; however, references will be provided where relevant. All of the supporting documents of relevance to this derogation case are as follows:

- EIAR Vol 2, Chapter 4: Site Selection and Consideration of Alternatives;
- EIAR Vol 2, Chapter 5: Project Description;
- EIAR Vol 3, Chapter 19: Socio-economics, Tourism and Recreation;
- Habitat Regulations Appraisal: Report to Inform Appropriate Assessment;
- Habitat Regulations Appraisal Compensation and Implementation Strategy.

1.5. Summary of consultation to date

Consultation with relevant stakeholders is a key part of the HRA process. This includes consultation with statutory nature conservation bodies (SNCBs) in relation to the development of compensatory measures, when considered potentially necessary.

The Applicant has consulted with SNCBs and other stakeholders to ensure all interested parties are aware of the proposed Project and are able to provide their advice and guidance. A summary of the relevant consultations undertaken, and consultee responses are provided in Table 1-1. Further detail on consultation can be found in Section 4 of the RIAA and for EIA engagement in **EIAR Vol 2, Chapter 6 Stakeholder Engagement**.

Table 1-1 Consultation Summary

DATE	CONSULTEE STAKEHOLDER(S)	MEETING/TOPIC
29/02/2024	MD-LOT, Joint Nature Conservation Committee (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 Guidance

2.1. Historical European legislation

The Habitats Directive (92/43/EEC) on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'), protects habitats and species of European nature conservation importance. Together with the Council Directive (2009/147/EC) on the conservation of wild birds (the 'Birds Directive'), the Habitats Directive established a network of internationally important sites, designated for their ecological status. Special Areas of Conservation (SACs), designated under the Habitats Directive, promote the protection of flora, fauna and habitats; and Special Protection Areas (SPAs), designated under the Birds Directive in order to protect rare, vulnerable and migratory birds. These sites combined to create a Europe wide 'Natura 2000' network of designated sites, which are referred to as 'European sites'. The overall aim of the network is to protect Europe's most vulnerable species and habitats throughout their natural range, promoting biodiversity and species recovery (where populations are in unfavourable conditions).

The key aspects of the Habitats Directive relating to the authorisation of plans or projects that may adversely impact European sites are contained within Article 6(3) and 6(4) of the Habitats Directive. Article 6(3) describes the process to determine if a plan or project would have an AEoSI of a designated site and if the plan or project may proceed. Article 6(4) describes a derogation process so that those plans or projects that concluded AEoSI at one or more designated sites may be developed, provided they meet certain requirements.

Article 6(3) (Habitats Directive 92/43/EEC) states:

> *'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.'*

Article 6(4) (Habitats Directive 92/43/EEC) states:

> *'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission to other imperative reasons of overriding public interest.'*

2.2. Scotland and UK habitats legislation

The Habitats and Birds Directives were transposed into UK legislation through a series of regulations:

- The Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations 1994), which apply in Scotland and its territorial waters;
- The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations 2017), which apply in terrestrial areas of the UK and territorial waters out to 12 nautical miles (NM); and
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (the Offshore Habitats Regulations 2017) which apply in UK waters beyond 12 NM.

These are all referred to collectively here as the Habitats Regulations. The provisions of Article 6(3) and 6(4) of the Habitats Directive are reflected in the Habitats Regulations. There is no material difference between the provisions of the different sets of Habitats Regulations which is relevant to this derogation case, and together they protect a network of designated sites within the UK referred to as the National Site Network (NSN).

The UK left the European Union (EU) on Exit Day, 31 January 2020, followed by Completion Day on 31 December 2020. The EU Exit Regulations (2019) establish any EU Exit-related changes to the Habitats Regulations, with these considered to have no material implications on the requirement or process for an assessment for the Project on designated sites.

Through the Habitats Regulations and the EU Exit Regulations, the core of the assessment of impacts on European sites remains unchanged, aside from a few terminology changes. In particular, the Habitats Regulations continue to use the term 'European sites', but they now comprise a UK network which is called the 'National Site Network' (previously they were part of Natura 2000). Therefore, references in the Habitats Regulations to the 'coherence of Natura 2000' must now be read as references to the coherence of the UK's National Site Network. It is noted that this derogation case considers both the UK's National Site Network and international transboundary sites together, and they are collectively referred to as the 'National Site Network (NSN)' or 'NSN Sites' throughout this report.

The process to assess the potential impact of a plan or project on designated sites through the Regulations is referred to in Scotland as a Habitat Regulations Appraisal (HRA), and is accepted to be a three stage process as follows:

- Stage 1: Screening for the potential to exclude likely significant effect (LSE);
- Stage 2: Appropriate Assessment (AA); and
- Stage 3: The derogation provisions.

This derogation case presents Stage 3 of the HRA process, with Stage 1 and Stage 2 presented within the HRA Screening Report and RIAA respectively. It is worth noting that under the Habitats Regulations, the types of designated sites considered are Special Areas of Conservation (SACs), candidate SACs (cSACs), Special Protection Areas (SPAs), potential SPAs (pSPAs), and Sites of Community Importance (SCIs). Ramsar sites (as designated under the Ramsar Convention) are also afforded the same protection as NSN Sites by UK and Scottish Government policy.

2.3. Overview of HRA stages 1-2: Screening and Appropriate Assessment

Under the Habitats Regulations, the HRA is to be undertaken by the relevant 'competent authority', which for Section 36 Consent and Marine Licence Applications, is the Scottish Ministers. However,

the Applicant has an obligation to provide such information as the Scottish Ministers may reasonably require for the purposes of carrying out an AA.

It is stated within the Habitats Regulations (Regulation 63 of the Conservation of Habitats and Species Regulations 2017 that:

> *'63.(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—*
>
> *(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and*
>
> *(b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives'.*

Screening, as required by Regulation 63(1), is commonly referred to as Stage 1 of the HRA process, where an applicant will conduct a screening exercise and provide a HRA Screening Report to inform the competent authority of identified potential significant effects. While it is the responsibility of the competent authority to undertake an AA for the project, the Applicant must provide any evidence necessary for the competent authority to reasonably undertake the AA, as described in Regulation 63(2). This information is presented within a RIAA and is Stage 2 of the process.

A plan or project may be given consent by the competent authority at the end of Stage 2, provided that the competent authority can conclude beyond reasonable scientific doubt that there is no AEoSI on any designated NSN site, as per Regulation 63(5).

The full assessments for the Project as part of Stage 1 and Stage 2 are presented within the HRA Screening Report and RIAA respectively. If the competent authority's Appropriate Assessment (AA) concludes that there will be an AEoSI on a NSN site, or an AEoSI cannot be excluded without reasonable scientific doubt, then the derogation case has been provided in order for the Project to achieve consent.

2.4. Overview of HRA Stage 3: The derogation provisions

To provide the requisite information to aid the competent authority's decision, a derogation case is prepared by the Applicant when scientific studies conclude there will be an AEoSI on any designated NSN site or if there is reasonable scientific doubt over the conclusions of no AEoSI. In the latter scenario a 'without prejudice' derogation case is prepared in case the Competent Authority does find AEoSI.

If the competent authority's AA concludes that there will be an AEoSI on a NSN site, or an AEoSI cannot be excluded without reasonable scientific doubt/ uncertainty, then the derogation process (i.e., HRA Stage 3 as detailed below) is required for the plan or project to still achieve consent.

As described above, where Stage 2 concludes an AEoSI, or where AEoSI cannot be excluded without reasonable scientific doubt/ uncertainty, the derogation process must be undertaken as Stage 3 of the HRA process. Regulation 64 of the Habitats Regulations (HM Government, 2017) outlines the derogation process as follows:

> *'64.(1) If the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site. (as the case may be).*

(2) Where the site concerned hosts a priority natural habitat type or a priority species, the reasons referred to in paragraph (1) must be either—

(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or

(b) any other reasons which the competent authority, having due regard to the opinion of the [appropriate authority], considers to be imperative reasons of overriding public interest.'

Following this guidance, Stage 3 is broken up into three key requirements, with the first two being to demonstrate that there are no alternative solutions (Section 5), and that there are imperative reasons of overriding public interest (IROPI) for the Project to proceed (Section 6). If the competent authority is content that these two requirements have been met, the third requirement is that necessary compensatory measures must be developed for the affected site and species to offset the potential adverse effects of the Project (Section 7).

If all of these requirements are met and the competent authority is satisfied that compensatory measures can be secured, then the Project may be granted consent.

All relevant provisions within the Habitats Regulations are presented in Table 2-1 below for reference for the remainder of this report.

Table 2-1 Provisions of the HRA process.

REGULATION	DETAIL
63 (1)	'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives'.
63 (2)	A person applying for any such consent, permission or other authorisation must provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable it to determine whether an appropriate assessment is required'.
63 (5)	'In the light of the conclusions of the assessment, and subject to regulation 64, the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be)'.
64 (1)	'If the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), it may agree to the plan or

REGULATION	DETAIL
	project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site (as the case may be)'.
64 (2)	'Where the site concerned hosts a priority natural habitat type or a priority species, the reasons referred to in paragraph (1) must be either (a)reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or (b)any other reasons which the competent authority, having due regard to the opinion of the [appropriate authority], considers to be imperative reasons of overriding public interest'.

2.5. HRA process to date and the Applicant's position on AEoSI

As explained above, the Applicant must provide the competent authority with the relevant information required for an AA to be undertaken. To re-iterate, all relevant information on the Stage 1 and Stage 2 conclusions can be found in the HRA Screening Report and RIAA.

At the conclusion of the Applicant's RIAA, it was determined that there would be no adverse effect on site integrity (AEoSI) on any NSN site. Following consultation with MD-LOT, Nature Scot and based on conclusions for other OWF farm sites (Scottish Government 2024a) a 'without prejudice' derogation case is provided for Forth Islands Special Protected Area (SPA) for the gannet and puffin features and for the kittiwake feature of Buchan Ness to Collieston Coast SPA, East Caithness Cliffs SPA, Fowlsheugh SPA, Forth Islands SPA and Troup, Pennan and Lion's Heads SPA. If the competent authority's Appropriate Assessment (AA) concludes that there will be an AEoSI on a NSN site, or an AEoSI cannot be excluded without reasonable scientific doubt, then the derogation case has been provided in order for the Project to achieve consent.

The RIAA outcomes are detailed within Table 2-2 below.

Table 2-2 Relevant RIAA Conclusions

SITE	FEATURE	RIAA CONCLUSION
EAST CAITHNESS CLIFFS SPA	Kittiwake	No AEoSI concluded for the Project both alone and In-combination. Feature still considered on a 'without prejudice basis' based on the conclusions drawn for other recent projects
FOWSHEUGH SPA	Kittiwake	No AEoSI concluded for the Project both alone and In-combination. Feature still considered on a 'without prejudice basis' based on the conclusions drawn for other recent projects
FORTH ISLANDS SPA	Gannet	No AEoSI concluded for the Project both alone and In-combination. Feature still considered on a 'without prejudice basis' based on the conclusions drawn for other recent projects

SITE	FEATURE	RIAA CONCLUSION
	Puffin	No AEoSI concluded for the Project both alone and In-combination. Feature still considered on a 'without prejudice basis' based on the conclusions drawn for other recent projects
BUCHAN NESS TO COLLIESTON COAST SPA	Kittiwake	No AEoSI concluded for the Project both alone and In-combination. Feature still considered on a 'without prejudice basis' based on the conclusions drawn for other recent projects
TROUP PENNAN AND LION'S HEADS SPA	Kittiwake	No AEoSI concluded for the Project both alone and In-combination. Feature still considered on a 'without prejudice basis' based on the conclusions drawn for other recent projects

3. HRA Derogations Guidance and Precedent

3.1. Guidance

Various guidance notes have been considered in drafting this derogation case, including Scottish, UK and EU guidance.

Key Scottish guidance includes the following:

- CMS (2021) – Habitat Regulations Appraisal (HRA) Derogations for Offshore Wind Projects in Scotland – Legal Framework for Decisions;
- DTA (2015) - Habitats regulations appraisal of plans: Guidance for plan-making bodies in Scotland;
- DTA (2021a, in draft) - Policy guidance document on demonstrating the absence of Alternative Solutions and imperative reasons for overriding public interest under the Habitats Regulations for Marine Scotland;
- DTA (2021b, in-draft) - Framework to Evaluate Ornithological Compensatory Measures for Offshore Wind. Process Guidance Note for Developers. Advice to Marine Scotland;
- Scottish Government (2015) - Scotland's National Marine Plan: A Single Framework for Managing Our Seas;
- Scottish Government (2020b) - Policy paper 'EU Exit: The Habitats Regulations in Scotland;
- Scottish Government, 2023a) Scotland's Energy Strategy and Just Transition Plan: Ministerial statement;
- Marine Directorate (2024) - Marine Licensing and consenting: Habitats Regulations Appraisal; and
- Scottish Natural Heritage (SNH) (2014) - Natura Casework Guidance: How to consider proposals affecting SACs and SPAs in Scotland. The essential quick guide.

Key UK guidance includes the following:

- Department for Environment, Food and Rural Affairs (Defra, 2012) - Habitats Directive: guidance on the application of article 6(4);
- Defra (2021a) - Policy paper 'Changes to the Habitats Regulations 2017;
- Defra (2021b) - Draft best practice guidance for developing compensatory measures in relation to Marine Protected Areas;
- DTA (2021c) - The Habitats Regulations Assessment Handbook; and
- (DESNZ, 2022) - Net Zero Strategy: Build Back Greener.

Key EU guidance includes the following:

- European Commission (EC) (2018) – Managing Natura 2000 Sites (MN 2000): The provisions of Article 6 of the Habitats Directive 92/43/EEC;
- EC (2021a) – Guidance document on wind energy developments and EU nature legislation; and
- EC (2021b) – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC and Annex (the EC Methodological Guidance).

3.2. Planning precedent

To date, seven OWF derogation cases have been submitted to the Scottish Ministers, for the West of Orkney, Berwick Bank, Green Volt, Salamander, Ossian, Caledonia and Muir Mhòr projects. At the time of writing, Green Volt is the only project to have achieved consent. It is worth noting that the derogation cases submitted for both West of Orkney (Offshore Wind Power Limited, 2023) and Green Volt projects were all approached on a 'without prejudice' basis (where it was concluded no AEoSI on all NSN sites, including offshore marine sites, within the respective RIAAs). Berwick Bank (Berwick Bank WindFarm Limited, 2022), Salamander (Salamander Wind Project Company Ltd, 2024), Ossian (Ossian Offshore Wind Power Limited, 2024). Caledonia North and South (Caledonia Offshore Wind Limited 2024) and Muir Mhòr (Muir Mhòr Offshore Wind Farm, 2024) RIAAs concluded AEoSI on several SPAs therefore requiring Stage 3 of the HRA process.

Green Volt was granted consent in 2024 following the AA by the Scottish Ministers, with the Minister's disagreeing on the 'without prejudice' nature of the derogation case, however ultimately determining that the project did not have any alternative solutions, IROPI was sufficient for the project, and adequate compensation was designed and securable.

In the Green Volt derogation case (Scottish Government, 2024b) Scottish Ministers concluded that:

> *'all of the INTOG projects would be required to meet objectives i and ii which are to generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply and to export electricity to the grid to support Scottish commitments for offshore wind generation and security of supply'.*

To note - objectives 1 and 2 are also the included as the primary objectives of the Project, as listed in Section 4.1.

In addition to preceding Scottish projects, the Applicant has also considered the approach used on several UK OWFs which have received consent on the basis of a derogation case. These are, in chronological order of consent award, as follows:

- Hornsea Three OWF (consented 2020; Department for Business, Energy & Industrial Strategy (BEIS), 2020a);
- Norfolk Boreas OWF (consented 2021; BEIS, 2021);
- Norfolk Vanguard OWF (consented 2022; BEIS, 2022a);
- East Anglia ONE North OWF (consented 2022; BEIS, 2022b);
- East Anglia TWO OWF (consented 2022; BEIS, 2022c);
- Hornsea Four OWF (consented 2023; DESNZ, 2023); and
- Sheringham Shoal and Dudgeon Offshore Windfarm Extension Projects (consented 2024; DESNZ, 2024a).

4. The Need for The Project

4.1. Overview

Underpinning all of the assessments of alternative solutions and IROPI is establishing the need for the Project, demonstrating why it should proceed following any conclusions of AEoSI identified by the Competent Authority.

This section identifies the urgent need for decarbonisation of the oil and gas industry and for new offshore wind generated electricity as driven by policy. This includes the decarbonisation targets of the North Sea Transition Deal, the objectives of Scottish Government INTOG Sectoral Marine Plan (SMP) and Scotland's ambitious commitments to address global climate change and achieve net zero by 2045. This Project presents an opportunity to demonstrate decarbonisation of existing oil and gas platforms in the central North Sea and has the potential to make a significant contribution to reducing carbon dioxide (CO_2) emissions, ensure floating wind technologies are developed on a large scale and contribute to the pressing need for energy security. This need is reflected in the Project objectives which are set out below:

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

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

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

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

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

6. 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

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

4.2. Key Legislation and Policy

4.2.1. 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, Cenos OWF.

4.2.2. 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.

4.2.3. Climate Change (Scotland) Act 2009

The Climate Change (Scotland) Act 2009 was built on the CCA and set out the statutory framework for GHG 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.

4.2.4. The Scottish Government's Climate Change Adaptation Programme

The Scottish Government's Climate Change Adaptation Programme (Scottish Government, 2013) was introduced in 2013. The 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 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.

4.2.5. Scotland's National Marine Plan

Section 11 (Offshore Wind and Marine Renewable Energy) of Scotland's original 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 GHG 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".*

4.2.6. The Paris Agreement

While the CCA, Climate Change (Scotland) Act 2009 and Scottish Government's Climate Change Adaptation Programme (Scottish Government 2013) 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.

4.2.7. 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".

4.2.8. 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, 2021a), 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, 2024b)

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.

4.2.9. 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.

4.2.10. Scottish Government's Offshore Wind Policy Statement

The Offshore Wind Policy Statement (Scottish Government, 2020c) 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.

4.2.11. Scotland's Sectoral Marine Plan for Offshore Wind Energy

Scotland's Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020a), 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 identifies 15 Plan Options, split across four regions which can generate several GWs of renewable energy.

This SMP 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. Th SMP was developed to ensure consistency with the objectives and principles set out within Scotland's National Marine Plan.

4.2.12. 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 (IPF) (Scottish Government 2022a) 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 plan option 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.

4.2.13. 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 (BEIS), 2020b), which also established that offshore wind is the most critical technology required to deliver the required electrification for mitigating climate change (see Section 4.3). The BESS also includes ambitions to deliver 5 GW of floating offshore wind projects by 2030.

4.2.14. 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 2022d).

4.2.15. 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, 2021), 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 CO_2 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 CO_2 emissions, relying on the removal of CO_2 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.

4.2.16. 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.

4.2.16.1. 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 NPS' 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, 2023a). Of particular relevance to the derogation provisions for Cenos OWF, 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.

4.2.16.2. 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, 2022), 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.

4.2.17. Emerging Legislation and Policy

4.2.17.1. Scotland's National Marine Plan 2 (NMP2)

Scotland's NMP2 will provide a current review of the original NMP published in 2015, as reviewed/amended 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 (Scottish Government 2023d). 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, 2022b):

> *"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.

4.2.17.2. Energy Strategy and Just Transition Plan

The draft Energy Strategy and Just Transition Plan (Scottish Government, 2023b) 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 2025.

4.2.17.3. 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.

4.2.17.4. 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 (DESNZ, 2024c).

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.*

4.3. Climate change, net zero and decarbonisation

4.3.1. 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 4.2). 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 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 Inter-Governmental 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.

4.3.2. 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, 2023b). 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.

4.3.2.1. 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 (Scottish Government, 2019). Scotland’s ambitious climate change legislation sets a target date for net zero emissions of all GHG 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 2024c).

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.

4.3.2.2. Oil and gas industry emissions

The fuel supply sector contributed 7% of total UK emissions in 2022 (CCC, 2022). 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 2022a). The oil and gas sector is not on track to meet the 2030 target on the current trajectory (NSTA 2022b).

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.

4.3.2.3. 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 4.3.2, the greater their contribution to limiting climate change will be. Following on from the consented Green Volt offshore windfarm, Cenos OWF 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 oil and gas 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.

In addition, the Energy Security Strategy (Scottish Government, 2017) 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.

4.3.2.4. How decarbonisation has been achieved to date

GHG emissions within the UK had decreased by 52.7% in 2023 when compared to 1990 (**Figure** 4-1, DESNZ, 2024b). This change was driven by a reduction in gas demand from the electricity supply. GHG 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 2024a).

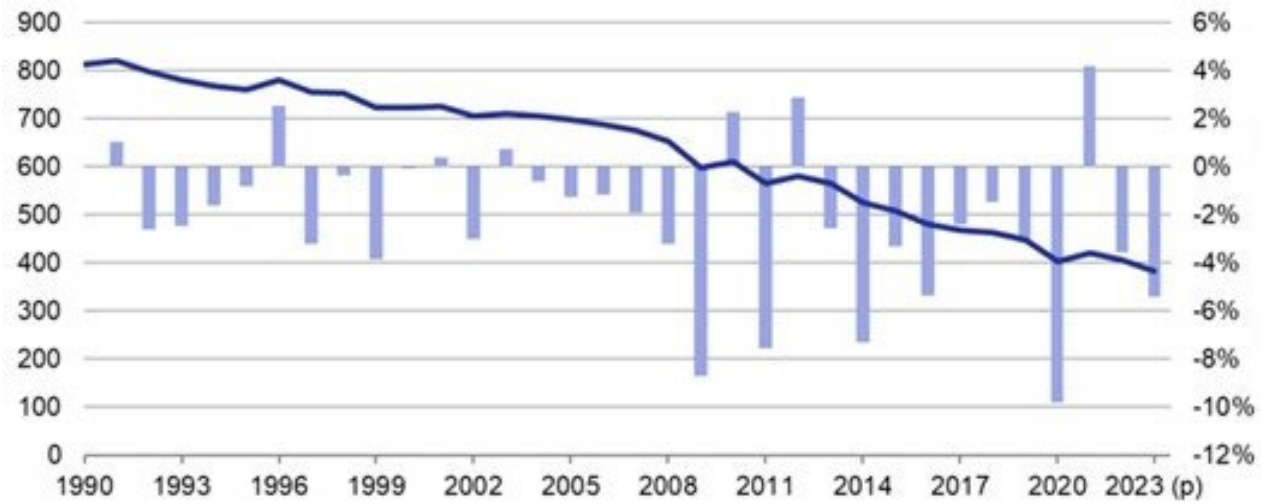

Figure 4-1 UK GHG emissions between 1990 and 2023 (DESNZ, 2024b) NOTE: L axis: Total GHG emissions MtCO²e (dark blue line), R axis: Year on Year change (light blue bars) X Axis: Year).

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 GHG 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, 2024b).

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).

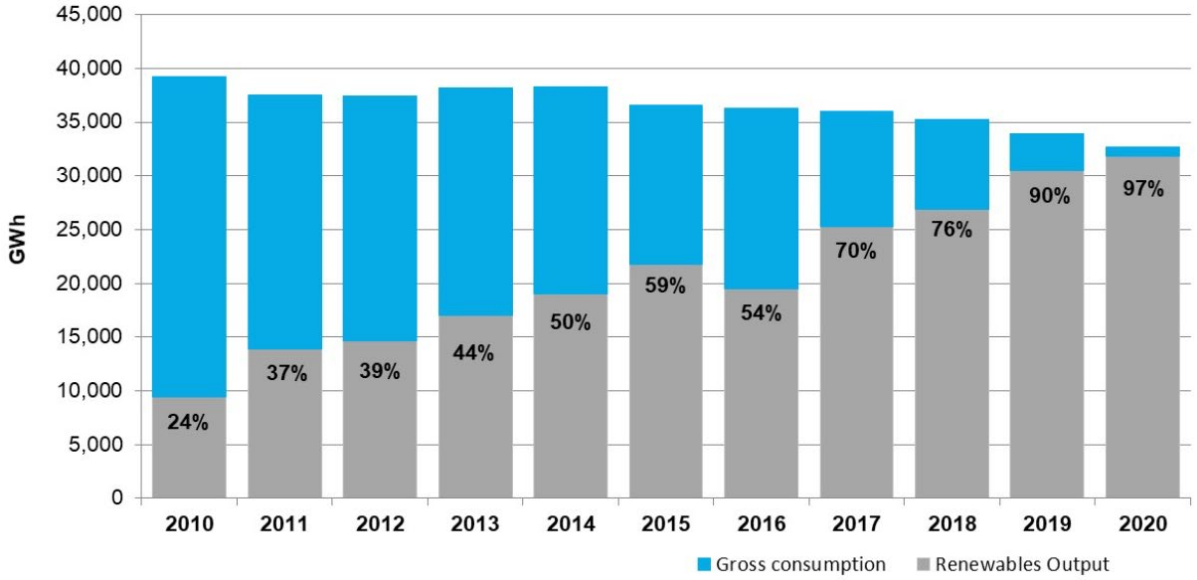

Figure 4-2 Scottish gross electricity consumption (GWh) and percentage renewables output (Scottish Renewables, 2024)

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).

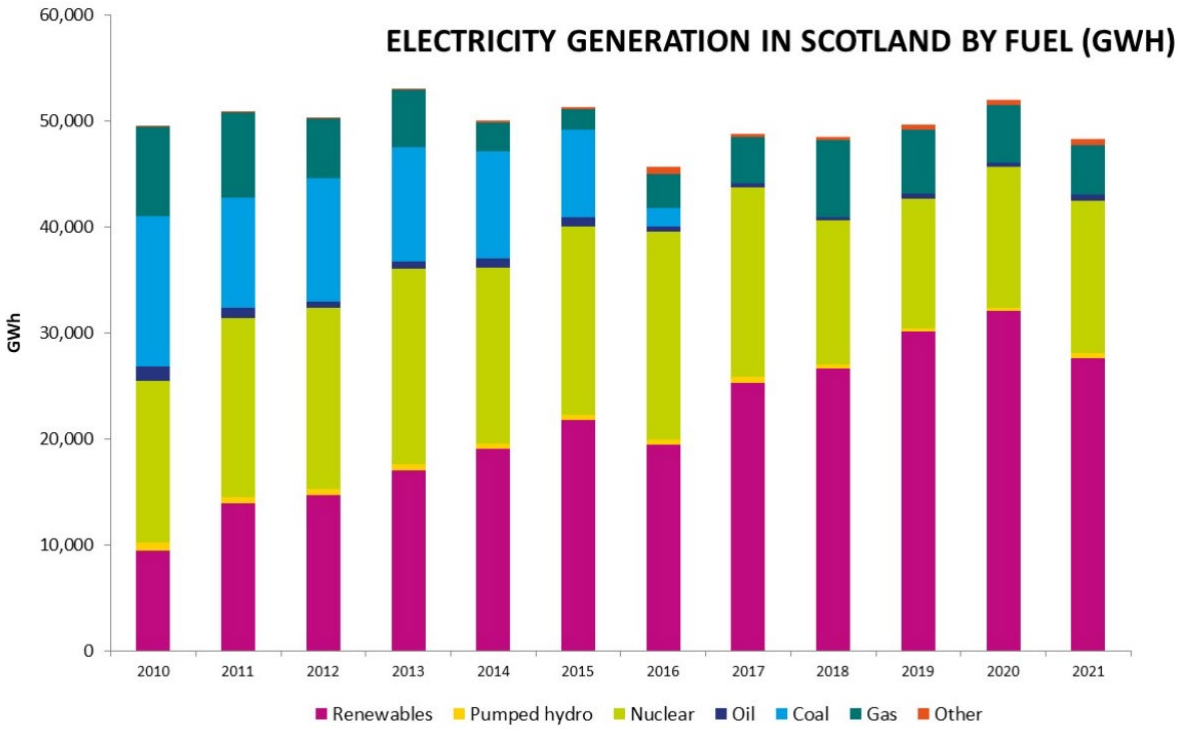

Figure 4-3 Electricity generation in Scotland by fuel (Gwh) (Scottish Renewables, 2024)

4.3.2.5. 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, 2023c), 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.

4.3.2.6. 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, 2023a) and 11 GW of offshore wind by 2030 (Scottish Government 2020a) 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.

4.3.2.7. 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, 2023c). 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 (2045), and the significant expected contribution from renewable energy sources.

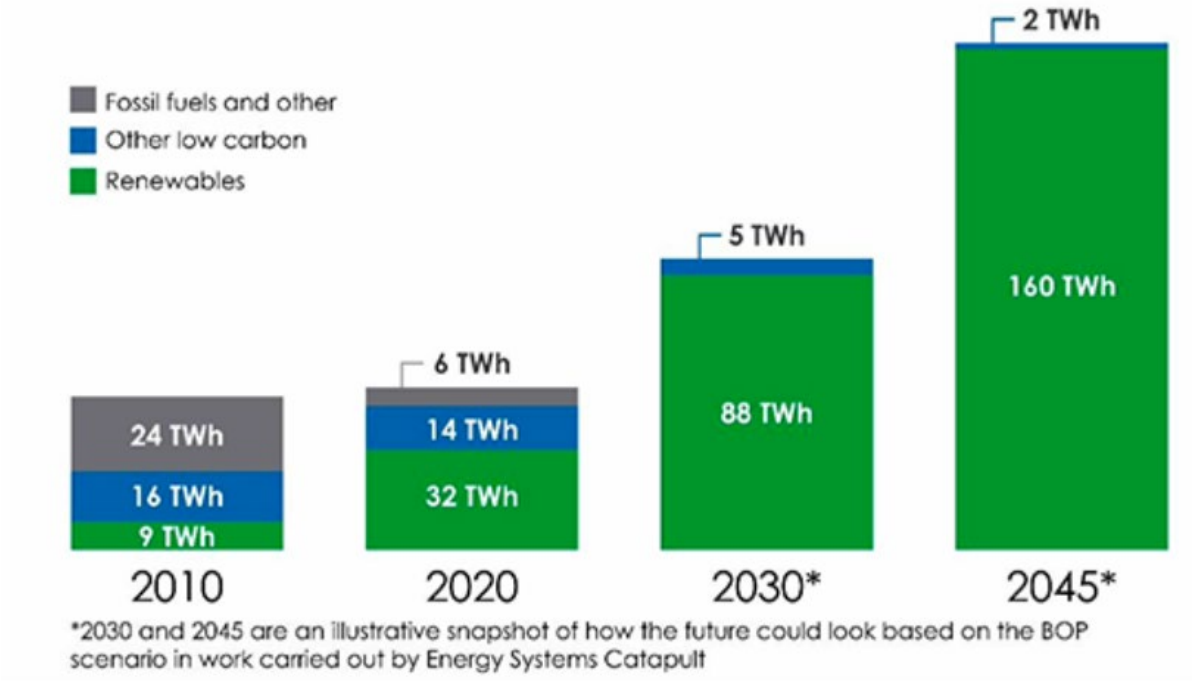

Figure 4-4 Predicted electricity generation capacity in Scotland (Scottish Government, 2023c)

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.

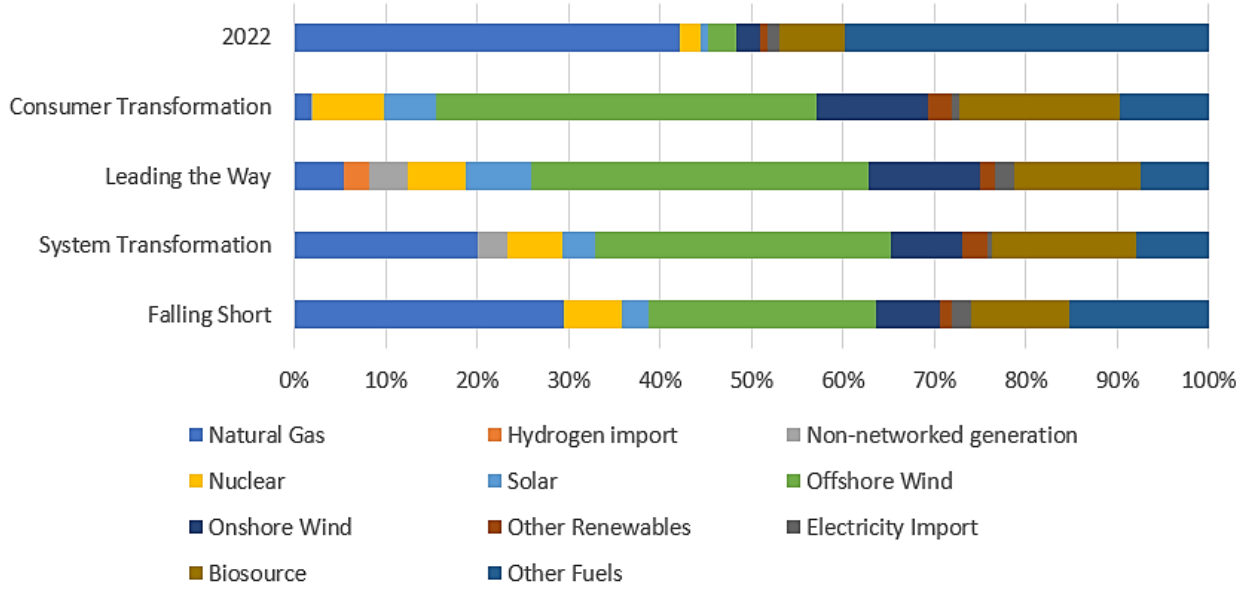

Figure 4-5 Generation sources for UK energy supply (adapted from NGESO, 2023)

4.3.3. 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.

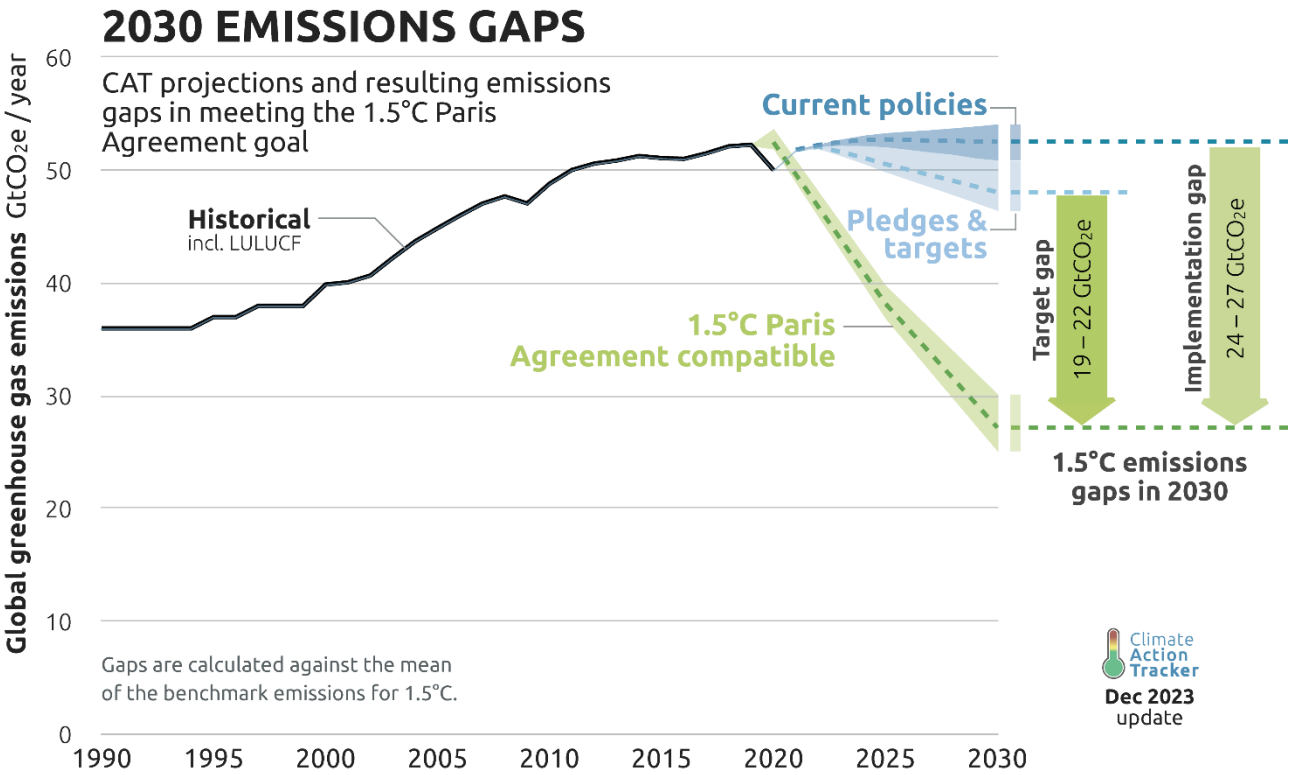

Figure 4-6 The Emission Gap between current policies and the Paris Agreement compliant targets

4.3.4. 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 (BEIS, 2020b) – 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) (HM Government 2024) – 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) (HM Government 2023a) – 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, 2020c) - 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, 2021b) – 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, 2020c) – 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, 2024c) - 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.

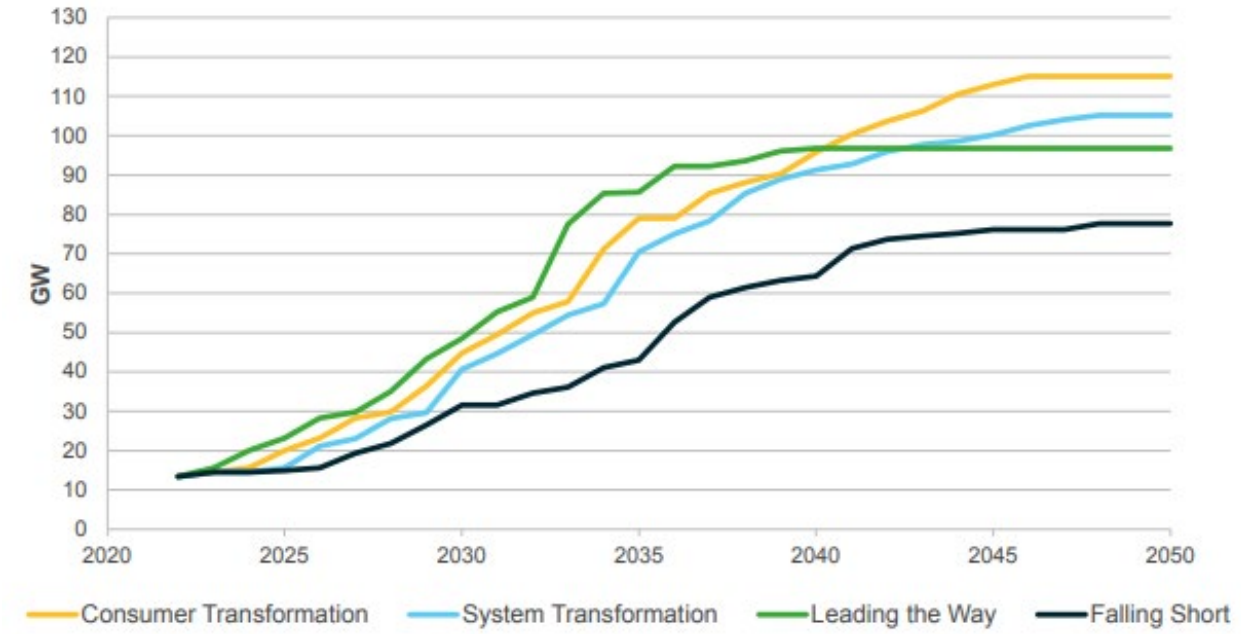

Figure 4-7 Offshore wind capacity in GW, excluding non-networked wind.

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.

4.4. 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.

4.5. Affordability of supply

It is stated within the Offshore Wind Policy Statement (Scottish Government, 2020c) 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%).

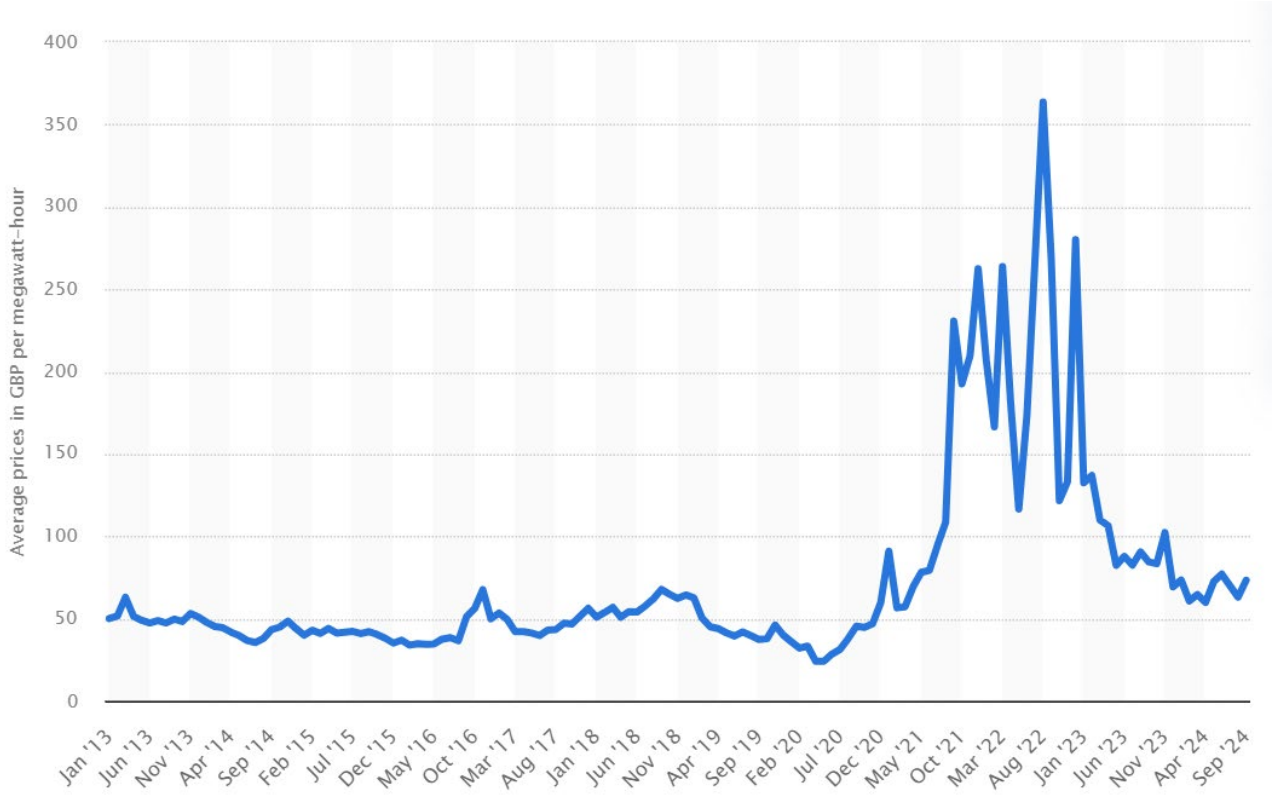

Figure 4-8 Average Price of energy per megawatt-hour since January 2013 (Statista Research Department, 2024)

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.

4.6. 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 2023b) 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 Cenos 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.

4.7. 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), 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, 2020b), 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 Alternative Solutions

5.1. Overview

This section demonstrates the absence of alternative solutions to the Project, as required within the derogation provisions, by identifying potential alternatives and assessing whether they are feasible. As there is no prescribed process within the Habitats Regulations, and an absence of guidance from the Scottish Government, the methodology and approach to demonstrating the absence of alternatives is guided by the appropriate European guidance where possible, Scottish Ministerial consideration of derogation and previous OWF projects that have submitted derogation cases in both the UK and Scotland. The key guidance documents for the assessment of alternatives are:

- 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 as amended EC 2018);
- 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);
- Habitats Regulations Appraisal (HRA) Derogations for Offshore Wind Projects in Scotland - Legal Framework for Decisions (CMS, 2021); and
  Scottish Ministers' consideration of the case for a derogation under the Conservation (Natural Habitats &C.) Regulations 1994 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (Scottish Government, 2024d).

Several key documents within the EIAR support the assessment of alternatives, with reference made throughout. The key documents are:

- **EIAR Vol 2, Chapter 4: Site Selection and Consideration of Alternatives**; and
- **EIAR Vol 2, Chapter 5: Project Description**.

5.2. Approach to demonstrating the absence of alternative solutions

5.2.1. Introduction

As the process of demonstrating the absence of alternatives not explicitly defined within the Habitats Regulations and there is a limited amount of relevant case law at the UK and EU level, the approach used within this report is based on other previous OWF derogation decisions and relevant Scottish guidance (DTA, 2021a, in draft), UK (Defra, 2012) and EC (2021a).

The assessment of alternatives is presented using the following four step process:

- Step 1: Identification of core project objectives in the context of the identified need;
- Step 2: Consideration of the 'do nothing' scenario;
- Step 3: Identification of any feasible alternative solutions; and
  Step 4: Comparative assessment of any feasible alternative solutions.

5.2.2. Step 1 – Core objectives of the Project

It is considered that for an alternative solution to be considered feasible, it must achieve the same purpose and aim of the Project. Therefore, it is important to the assessment of alternatives that the aims of the original proposal are defined. This is achieved through the core objectives of the Project, to determine if it is theoretically possible to achieve the same results through different methods that have reduced impacts. In the context of the derogation provisions, a feasible alternative solution is one which delivers the same objectives in a way which is less damaging to the NSN when compared to the original proposal.

This approach has also been endorsed by the English High Court in Spurrier v Transport Secretary (2019), which commented as follows:

> *'Even by itself, the noun 'alternative' carries the ordinary, Oxford English Dictionary meaning of 'a thing available in place of another', which begs the question what are the relevant objectives or purposes which an alternative would need to serve. However, article 6(4) does not refer simply to the absence of an 'alternative' but to an 'alternative solution', 'alternative' appearing as an adjective, which makes this meaning plain beyond any doubt. In our view, 'an alternative' must necessarily be directed at identified objectives or purposes; but it is beyond doubt that 'an alternative solution' must be so aimed.'*

Defra (2012) similarly states that alternative solutions are limited to those which would deliver the same overall objective as the original proposal. In making this point, it uses the example of an OWF:

> *'For example, in considering alternative solutions to an offshore wind renewable energy development the competent authority need only consider alternative offshore wind renewable energy developments. Alternative forms of energy generation are not alternative solutions to this project as they are beyond the scope of its objective. Similarly, alternative solutions to a port development will be limited to other ways of delivering port capacity, and not other options for importing freight.'*

Defra (2021b) guidance echoes this advice as follows:

> *'Examples of alternatives that may not meet the original objective include a proposal that…offers nuclear instead of offshore wind energy',*

Similarly, the Secretary of State stated in the following in the Hornsea Four OWF decision letter (DEZNZ 2023):

> *'The Secretary of State does not consider the development of alternative forms of energy generation to meet the objectives for the Development. Alternatives to the Development considered by the Secretary of State are consequently limited either to Do Nothing or to alternative wind farm projects'.*

Scottish Ministers in Green Volt OWF Derogation Case (Scottish Government 2024b) stated:

> *'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.'*

In conclusion, the first step is to identify the core objectives of the Project. These core objectives respond to and must be understood in the context of the relevant policies and the needs case which the Project serves, as set out in Section 4.1 of this report. It is noted that a similar approach has

been followed in other Scottish and UK HRA derogation cases for OWF projects. The core objectives are considered within Section 5.3.

5.2.3. Step 2 – Do nothing scenario

The second step to be considered is considering the 'do nothing' scenario, to determine the outcome of not progressing the Project at all. The English courts have cast doubt on the proposition that 'do nothing' is a true alternative, although it has been recognised that where there are IROPI this clearly raises the question of whether it is better to do nothing. The 'do nothing' scenario is assessed here against the core objectives of the Project, following other previous OWF examples. If it is determined that the 'do nothing' option is not a feasible alternative, other options should be identified to see if they meet the core objectives of the Project while avoiding or reducing damage to the NSN.

5.2.4. Step 3 – Identify feasible alternative solutions

Once the core objectives of the Project are established, the guidance requires that all feasible alternatives are assessed (Step 3). However, it does not require the assessment of alternatives without any practical feasibility.

As detailed in Section 5.2.2 guidance clarifies that alternative energy generation sources do not count as alternative solutions, a precedent which has been applied throughout other derogation cases for OWF throughout Scotland and the UK. Following this, other sources of energy generation are not considered appropriate to assess as alternatives to the Project.

5.2.5. Step 4 – Comparative assessment of any identified alternative solutions

Once the alternatives are identified, each potential alternative must be assessed to determine whether it is a feasible alternative with respect to the Project as proposed. For an alternative to be considered as an option, the assessment must determine that the alternative meets all of the Project objectives, is feasible and has a reduced impact on the NSN (CMS, 2021).

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 feasible. Legal feasibility means that there are no legal impediments to the potential alternative proceeding. 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).

Where feasible alternatives are identified within this step, they must then be assessed with respect to their potential impact on the UK's NSN as a whole, in addition to the specific site and feature(s) for which potential AEoSI was concluded for the Project. It is worth noting that an alternative solution with an impact less than the original proposal does not result in a failure of the alternatives test as it is considered that there must be a significant material reduction in impact for it to be considered as an effective alternative solution (CMS, 2021).

It is understood that feasible alternatives could include locating the Project elsewhere, modifications to the size and design of the Project, and modifications to construction and operational methodologies. The UK Secretary of State and Scottish Ministers concluded in previous derogation cases that alternative forms of energy generation would not count as alternative solutions as they

do not meet the outlined objectives. Therefore, alternative generation methods are not considered within this report.

A potential alternative would not be technically feasible where it is impractical, incapable of being implemented, technically unsound, unsuitable for deployment in the North Sea environment or would not meet safety or regulatory requirements.

As for legal feasibility, a potential alternative would not be legally feasible where there is a legal impediment or where from a legal or consenting perspective, it would be unreasonably difficult or improbable that the consent would be granted, for example, on account of 'unacceptable' impacts.

5.3. No alternative solutions case: Step 1 – Core objectives of the Project

The need for the Project forms the overarching reason for the consent application, as set out in Section 4 and further detailed in the **EIAR Vol 2, Chapter 2: Need for the Project**. The urgent need for offshore wind projects to deliver low carbon energy production at scale to help mitigate the effects of climate change and to meet pressing decarbonisation targets by 2045 therefore makes it imperative to develop offshore wind projects that decarbonise the oil and gas industry as recognised in the NSTD and also generate low carbon electricity in support of the decarbonisation of the Scottish electricity supply.

The core objectives of the Project are presented within Table 5-1: and each core objective addresses different aspects of the need for the Project as identified in Section 4.

Table 5-1: Core objectives of the Project

OBJECTIVE	BASIS OF THE OBJECTIVE
1. 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. The Scottish First Minister declared a climate emergency in April 2019 and Scotland has legally binding targets to reduce GHG emissions to 'net zero' by 2045. 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.
2. 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 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 Scotland and the UK would achieve security of supply.

OBJECTIVE	BASIS OF THE OBJECTIVE
	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.
3. 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.
4. 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.
5. Lead the scaling up of the 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.
6. 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	Contribute to UK and Scotland's commitment to address global climate change and achieve net zero by 2050 and 2045 respectively. 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.
7. To ensure that, in the long-term, energy is available to UK 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.

5.4. No alternative solutions case: Step 2 – Do nothing scenario

The ‘do nothing’ scenario assesses the potential impacts of not progressing the Project.

If the Project does not proceed, a significant area of available seabed suitable for INTOG and large-scale offshore wind development in Scottish waters would not be developed. It is considered that all proposed INTOG projects within Scottish waters are necessary for their primary intended purpose, to supply oil and gas installations with low carbon electricity. However, the INTOG projects are also required for the additional objectives of providing low carbon electricity to the grid in support of decarbonisation, addressing energy demands and ensuring security of supply. This was confirmed by the Scottish Government in Green Volt Derogation Case (Scottish Government, 2024b).

As outlined above, the ‘do nothing’ scenario would jeopardise the reduction in carbon emissions from the oil and gas platforms in Scottish waters that would currently or in the future utilise energy generated by the Project for their onboard operations.

The ‘do nothing’ scenario would also hinder wider decarbonisation and security of supply efforts and ignore the clear and urgent need for large scale OWF development within the UK. The targets for decarbonisation, as well as the importance of energy security and affordability mean that all viable OWF projects should be considered for development. It is not appropriate within a climate emergency to ‘do nothing’.

The ‘do-nothing’ scenario would equate to the loss of one of the largest floating offshore wind projects currently in development which is essential to realising the potential of floating offshore wind in Scotland and could affect confidence in the anticipatory investment needed in the supply chain to develop floating offshore wind at the scale required for this Project and for future projects in the development pipeline. This would hinder subsequent projects by exacerbating supply chain issues which could potentially cause delays, increased cost, less capacity and less choice in technology.

Furthermore, the do-nothing scenario would result in existing consented onshore connections, such as the NorthConnect Project, not being fully utilised, thereby not making optimum use of onshore transmission infrastructure.

Therefore, the ‘do nothing’ option is discounted as a feasible alternative to the Project for the reasons explained above and summarised in Table 5-2.

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

ALTERNATIVE SOLUTION	DOES IT MEET THE PROJECT OBJECTIVES?							IS IT FINANCIALLY FEASIBLE?	IS IT LEGALLY FEASIBLE?	IS IT TECHNICALLY FEASIBLE?	CONCLUSION
	1: To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply.	**2: To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply.**	**3: To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters.**	**4: To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.**	**5: Lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland.**	**6. 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**	**7. To ensure that, in the long-term, energy is available to UK consumers at the lowest possible cost to ensure the highest quality of life.**				
Do Nothing Scenario	No - Provides no contribution towards Scottish targets to decarbonise.	No - Provides no contribution to increasing energy security.	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 not make optimum use of generation and export capacity within the constraints of available Scottish sites and onshore transmission 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 - Provides no contribution to Scottish and UK Government targets relating to climate change and net zero.	No - Provides no contribution to the long-term energy supply, which at scale would aid delivery of electricity to consumers at the lowest cost.	Yes	Yes	Yes	The 'do nothing' scenario does not meet any of the Project objectives and therefore is not considered a feasible alternative.

5.5. No alternative solutions case: Step 3 – Identify feasible alternative solutions

5.5.1. Scope of alternatives considered

Following relevant guidance and examples set by other previous OWF derogation cases, the scope for consideration of potentially feasible alternative solutions has been defined as follows:

- Alternative OWF array locations, including:
  - Locations outside the UK EEZ;
  - Locations within the UK EEZ, outside of Scottish waters;
  - Other locations within Scottish waters, and
  - Other locations within E-a INTOG Lease Plan Option area.
- Alternative Project designs, including:
  - Increasing/decreasing the size of the developable area/overall number of WTGs;
  - Size of the airgap;
  - Reducing rotor size/swept area; and
  - Considering alternative operational protocols.

Each of the above is considered in turn below, in the context of core objectives of the Project and with regards to their feasibility (i.e., financial, legal and technical).

5.5.2. Alternative array area locations

5.5.2.1. Locations outside of the UK EEZ

This section considers the potential of progressing the Project in alternative locations outside of the UK EEZ.

Locations in other countries do not deliver on any of the Project objectives which relate to Scottish and UK targets for net zero, security of supply, decarbonisation of Scottish oil and gas infrastructure, Scottish supply chain and renewable energy generation.

it is considered that alternative locations can only be within areas/sites currently in Scottish waters, this is justified within the derogation case for Green Volt, where Scottish Ministers stated:

> *'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 oil and gas platforms.'*

Other countries will also have their own decarbonisation targets through various legal policies (e.g., the Paris Agreement) and, therefore, countries with territories outside the UK EEZ will require the available space to maximise their own renewable energy resource and meet their own legal obligations.

This conclusion was reached by the SoS in each of the seven previous UK OWF HRA derogation cases. For example, the SoS's HRA for East Anglia ONE North (BEIS 2022e) states;

> *"Although the UK is party to international treaties and conventions in relation to climate change and renewable energy, according to the principle of subsidiarity and its legally binding commitments under those treaties and conventions, the UK has its own specific legal obligations and targets in relation to carbon emission reductions and renewable energy generation. Other international and EU countries similarly have their own (different) binding targets. Sites outside the UK are required for other countries to achieve their own respective targets in respect of climate change and renewable energy."*

Both the UK and Scotland have legal decarbonisation targets, of particular relevance being the net zero target by 2045 in Scotland and the UK 2050 net zero target. While other countries are subject to various EU and international policies regarding decarbonisation and climate change, it is considered that any location outside the UK EEZ would fail to meet Objectives 1, 2, 3 and 6 of the Project as it would not contribute to Scottish and UK decarbonisation targets. By moving the Project outside the UK EEZ, objectives 4, 5 and 7 would also not be met as these also relate to Scotland specifically (developing available Scottish seabed and the Scottish supply chain respectively) and reducing cost to the UK consumer. A location outside of the EEZ would also not support decarbonisation of the oil and gas platforms which is a specific requirement of the INTOG leasing round.

Furthermore, locations outside of the EEZ would result in existing consented onshore connections, such as the NorthConnect Project, not being fully utilised, thereby not making optimum use of onshore transmission infrastructure.

Therefore, alternative array locations outside of the UK EEZ are discounted as a feasible alternative to the Project for failing to achieve all of the core objectives as summarised in Table 5-1:.

5.5.2.2. Locations within UK EEZ but outside of Scottish waters

This section considers the potential of developing the Project in alternative locations throughout the UK, excluding Scottish waters (where the Project is located).

As stated above, the Scottish Minister stated within the derogation case for Green Volt OWF 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 net zero ambitions and decarbonising Scottish oil and gas platforms.

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 are already under exclusivity to other offshore wind developers. These locations are not legally available and do not constitute feasible alternatives.

This was confirmed in recent OWF HRA decisions, where the SoS concluded that sites outside of areas secured by the respective applicant do not represent alternative locations. The HRA for East Anglia One North concluded (BEIS 2022e);

> *'"The site selection for all offshore wind proposals in the UK is controlled by The Crown Estate leasing process. Sites not within the areas identified by The Crown Estate leasing process or*

outside of that which the Applicant has secured (the southern East Anglia Zone) are not legally available, and therefore do not represent alternative locations."

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, locations within the UK EEZ but outside Scottish waters would result in existing consented onshore connections, such as the NorthConnect Project, not being fully utilised, thereby not making optimum use of onshore transmission infrastructure.

For the reasons described above sites outside of Scottish waters would fail to meet Objectives 1-5 of the Project as they all refer specifically to Scottish benefits.

5.5.2.3. Locations within Scottish waters

Consideration of other locations in Scottish waters as an alternative to the proposed location for the Project is not considered a feasible option for the simple reason that all available Scottish seabed is required to achieve (and if possible surpass) UK and Scottish Government offshore wind energy generation and net zero targets (namely the 2045 and 2050 targets), and in so doing help to tackle the global climate change emergency.

Other projects, (namely ScotWind) either developed or in planning, would also not meet the specific Project Objectives as they will be designed with different/less specific goals in mind. Objective 3 of this Project is 'To generate and deliver low carbon electricity from offshore wind farms to oil and gas infrastructure and maximise the decarbonisation opportunity in Scottish waters' and therefore its location is key; it has been sited specifically to meet the needs of the oil and gas industry.

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

- 'IN' – small scale innovative projects of less than 100 MW; and
- 'TOG' – Targeted Oil & Gas decarbonisation projects connected directly to oil and gas infrastructure, to provide electricity and reduce the carbon emissions associated with production.

'IN' projects are not alternatives to the Project due to their size with a total capacity of 500 MW, IN projects are not considered an alternative and would not provide the capacity provided by the Project. Project objective 6 is to deliver a significant volume of offshore wind in Scottish waters in the 2030s, objective 3 is to generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure and objective 4 is to optimise generation and export capacity within the constraints of available sites. The 'IN' sites being of much smaller generation capacity would not meet these objectives and so are not an alternative.

Other 'TOG' sites 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.

Furthermore, locations within Scottish waters would result in existing consented onshore connections, such as the NorthConnect Project, not being fully utilised, thereby not making optimum use of onshore transmission infrastructure. Therefore, they would fail to meet objective 4 which is to optimise energy generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.

The UK Government's Overarching National Policy Statement for energy (EN-1) to which Scottish Ministers have regard, identified nationally significant low carbon infrastructure (which includes offshore wind) as a critical national priority (CNP). Such that when considering derogations under the Habitats Regulations, the starting point for CNP infrastructure should be the need for energy security and decarbonising the power sector to combat climate change. EN-1 provides that the need for energy security and decarbonisation of the power sector to combat climate change requires a significant number of deliverable locations for CNP infrastructure. On this basis, EN-1 notes that;

> *'other plans or projects deliverable in different locations to meet the need for CNP infrastructure is unlikely to be treated as an alternative solution' and 'the existence of another way of developing the proposed project which results in a significantly lower generation capacity is unlikely to meet objectives and therefore be treated as an alternative solution'.*

As described above, guidance dictates that the only alternative locations that can be considered are those subject to leasing by the CES, through the INTOG leasing round. Of these 9 Plan Option Areas, the Applicant has secured development rights to one site. Any other area within Scottish waters, is not considered legally accessible to the Applicant and cannot be considered as an alternative.

Future OWF development is also not an alternative, CES has not indicated its intention to hold any future leasing rounds in the short-term. Whilst future leasing rounds may be available to further decarbonise the North Sea Oil and Gas sector, there is no sight of these potential leasing rounds in the short-term and so they will not meet objectives 2,3 and 6. Furthermore, any such projects would not necessarily represent alternatives with less damaging ecological impacts.

As stated within Section 4 and the 'do nothing' scenario above (Section 5.4), there is a significant need to rapidly increase the amount of offshore energy generated within both UK and Scottish waters and the loss of any potential renewable energy generating capacity is not acceptable.

5.5.2.4. Locations within E-a lease plan option area

There are no alternatives currently possible within the E-a Lease Plan Option area. The Project's site selection was informed by the Initial Plan Framework for the Sectoral Marine Plan for INTOG, which finalised the Areas of Search identified for leasing activity (E-a Lease Plan Option area). The site selection process examined the Project objectives, environmental, physical and technical constraints and narrowed down the available site options based on these considerations. 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.

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 Royal Society for the Protection of Birds 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).

The preceding paragraphs demonstrate that the final site boundary for the Project was the result of an iterative, careful and exhaustive process, one that supports the conclusion that there are no feasible alternatives within the E-a Lease Plan Option area that would achieve the Projects core objectives and result in less damaging ecological impacts.

5.5.2.5. Conclusions

Table 5-3 below presents the conclusions for each alternative location with respect to the objectives of the Project.

Table 5-3 Performance of alternative locations against the Project objectives

ALTERNATIVE SOLUTION	DOES IT MEET THE PROJECT OBJECTIVES?							IS IT FINANCIALLY FEASIBLE?	IS IT LEGALLY FEASIBLE	IS IT TECHNICALLY FEASIBLE?	CONCLUSION
	1: To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply	**2: To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply**	**3: To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters**	**4: To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.**	**5: Lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland.**	**6. 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**	**7. 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 UK EEZ	No - Provides no contribution towards 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 - Provides no contribution to Scottish and 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 but outside Scottish waters	No - Provides no contribution towards 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 within the UK but outside of Scottish waters are not feasible alternatives as it does not meet all of the Project objectives and it is not legally feasible, and therefore not considered as a feasible alternative.
Locations within Scottish waters	Possibly – Could contribute towards Scottish decarbonisation but all projects required to meet targets.	Yes – Would contribute to meeting Scottish commitments for offshore wind and increasing security of supply.	Possibly – Only INTOG sites are capable of meeting the Scottish aims for decarbonising oil and gas platforms in Scottish waters, and all INTOG projects are needed. Other Scotwind sites would not meet this objective. This would also	No - Not utilising the E-a Lease Plan Option area would result in the use of seabed not being optimised. No other project is utilising the E-a Lease Plan Option area or the consented onshore transmission infrastructure so the use of	Yes - Meets objective however the scaling up of floating offshore wind supply chain and associated economic benefit is likely to be diminished without the inclusion of the Project.	Yes - Meets objective would provide a contribution towards meeting Scottish and UK Government targets relating to climate change and net zero. However, the loss of the Project that may become operational in early 2030, would	Yes - Meets objectives, would provide energy to the UK consumers, and has the potential to deliver at equivalent lower cost. However, the loss of this Project would limit the ability to drive down cost to the consumer through economies of	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 feasible, and therefore is not considered a feasible alternative.

ALTERNATIVE SOLUTION	DOES IT MEET THE PROJECT OBJECTIVES?							IS IT FINANCIALLY FEASIBLE?	IS IT LEGALLY FEASIBLE	IS IT TECHNICALLY FEASIBLE?	CONCLUSION
	1: To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply	**2: To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply**	**3: To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters**	**4: To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.**	**5: Lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland.**	**6. 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**	**7. To ensure that, in the long-term, energy is available to consumers at the lowest possible cost to ensure the highest quality of life.**				
			remove the decarbonisation opportunity within the E-a INTOG area of search.	onshore infrastructure would not be optimised either.		mean a loss of significant contribution to this objective.	scale and volume of OWF delivery in Scotland.				
Locations within E-a Lease Plan Option area	Yes - Would meet objectives however there are no technically feasible alternatives within the E-a Lease Plan Option area.	Yes - Would meet this objective however there are no technically feasible alternatives within the E-a Lease Plan Option area that would meet this objective.	Yes - Would meet this objective however there are no technically feasible alternatives within the E-a Lease Plan Option area that would meet this objective.	No – Would not meet this objective as to develop elsewhere within the E-a area would not be optimal in terms of energy generation, also it is not a technically feasible alternative.	Yes - Would meet this objective however there are no technically feasible alternatives within the E-a Lease Plan Option area.	Yes - Meets objective would provide a contribution towards meeting Scottish and UK Government targets relating to climate change and net zero.	Yes - Meets objectives, would provide energy to the UK consumers, and has the potential to deliver at equivalent lower cost.	Not assessed as not a feasible alternative.	Yes	No	An alternative site within the E-a Lease Plan Option is not considered technically feasible due to site constraints.

5.5.3. Alternative design solutions for the Project

The consideration of ecological and other environmental constraints has been a central theme within the development of the Project. The maximum area available to lease through INTOG is limited to 333 km^2. The siting and refinement of the Project within the lease area has taken into account environmental, physical, technical, commercial and societal considerations and opportunities as well as engineering requirements.

Consideration has been given to potential alternatives throughout the design process. This has been done to ensure that feasible and practical avoidance and mitigation measures have been included where possible, and therefore potential effects avoided or reduced. **EIAR Volume 2, Chapter 4: Site Selection and Consideration of Alternatives** provides further detail on the site selection process for the Project, including a comparison of alternatives considered and the reasons for selecting the final design options.

This section presents an analysis of potential design alternatives to avoid or limit the effect of the Project on the National Site Network. The scope of this alternatives design consideration has been limited to alternative project designs which may influence the effect of the Project on ornithological receptors. The design parameters considered are:

- Size of developable area/overall number of WTGs;
- Increasing the size of airgap;
- Smaller rotors/swept area; and
- Alternative operational protocols.

5.5.3.1. Size of the developable area/overall no of WTGs

The size of the Project has been driven by several key factors and initially by the INTOG leasing process where the E-a Lease Plan Option area was formally identified (Scottish Government, 2022a).

The maximum area available to lease through INTOG is limited to 333 km^2. The siting and refinement of the area of search to meet the maximum lease area has taken into account environmental, physical, technical, commercial and societal considerations and opportunities as well as engineering requirements.

The Applicant has undertaken pre-application engagement with stakeholders and communities to seek input into the Project's design and to communicate key decisions with regard to both design and location.

It is considered that the size of the deployable area cannot be increased without exceeding the legally secured area and consequently having a greater ecological impact. Reducing the deployable area means that in order to maintain the current capacity either the number of WTGs would need to be increased, or the capacity of each WTG would need to be increased. Increasing the numbers of WTGs within the reduced deployable area could increase the environmental impacts of the Project and introduce wake effects between turbines that could impact energy yield. Increasing the individual WTG capacity is also not a viable option as the Applicant has selected a WTG design envelope that it confidently feels will be commercially available within the Projects delivery timeline. Neither of these options are technically or commercially feasible options for the Applicant, furthermore the Project must compete for a CfD in a competitive tender, with uncertainties in WTG availability, a reduced optimisation of design and lower capacity, it may not attract finance and it may become/be considered an unviable Project which would result in a loss of generation capacity within Scotland.

A smaller site boundary with an associated reduction in the number of WTG would fail to optimise the potential energy generation from the site and fail to meet 1.35 GW installed capacity. As stated earlier, a material reduction in the number of turbines is not considered to be financially or technically feasible. Also, as the primary impact considered within the RIAA is due to the presence and rotation of turbines, a reduction of enough magnitude to prevent an adverse effect, would result in a non-commercially viable project. Therefore, reducing the number of WTGs is discounted as a feasible alternative to the Project design.

In summary, the reduction in size of deployable area and reduction in number of WTGs would fail to maximise the potential for energy generation, would fail to maximise on the potential for economies of scale and energy yield and would be unlikely to provide a material benefit to key affected species. The Project would therefore fail to meet Project objectives 4-7 if the developable area or number of WTGs was reduced.

5.5.3.2. Air gap

The minimum air gap (clearance between the rotor blades and sea surface) requirements are set by MGN 654, where a 22 m minimal air gap is mandated for safe navigation. Supply chain analysis and early works for the procurement of the Project have indicated that the air gap could technically be increased, but this is highly dependent on availability of technology and demonstration of the efficacy of alternative designs in a floating offshore wind scenario. At present, there is a lack of certainty and definition in turbine designs that will be commercially-ready to integrate with the floating substructure technology for the project.

Unlike fixed foundation offshore wind turbine generators, the additional vertical and horizontal movements that are produced by the floating foundations can increase the stress on the tower and the turbine generator itself. Increasing the height of the turbine, therefore, has the potential to reduce the lifespan of the FTU and may increase costs through necessary foundation modifications and changes to moorings and anchors to account for the extra weight and movement. Increasing the height of the nacelle to increase the airgap will also result in an increased load on the mooring systems and the need for larger anchors in both the semi-submersible and TLP design options.,

Given the Project location, for which it has been demonstrated there are no feasible alternatives (Section 5.5), is inside the East of Gannet and Montrose fields Nature Conservation Marine Protected Area, the Project Design Envelope has already reduced the mooring system to the minimum requirements whilst retaining technical feasibility. Accordingly, there would be limited scope to increase the size of moorings, anchors, or other components that may affect the seabed in order to address the increased weight and movement of the foundations when the air gap is substantially increased.

Additionally, the Applicant is cognisant that increasing this distance may have negative implications for other activities taking place near the Project. Safe helicopter access to and from the surrounding oil and gas installations must be maintained. Increasing the air gap, depending on how this is implemented, could raise the blade tip height. In events of bad weather and low freezing zone, helicopters will be forced to reduce their flying height. Whilst this has been assessed in EIAR Vol. 3, Chapter 18: Military and Civil Aviation and demonstrated to produce minimal risk, any additional tip height may impact the safe operations of helicopters in the region and cannot be ignored.

It has been demonstrated in the Need for the Project (Section 4) discussion that the Project is urgent and must be delivered in order to contribute to Scotland and the UK's climate change mitigation efforts, the legally binding net zero commitments and to scale up the floating offshore wind supply chain. Given the project's capacity requirements and timeline, the likely negative impact on the technology lifespan, and the potential for increased negative effects on the benthic habitat, the

minimum airgap cannot be increased. Delays to the Project are unacceptable due to the urgent nature of the climate emergency and would result in a loss of significant contribution to the decarbonisation targets. Accordingly, this alternative is demonstrated to not be feasible.

5.5.3.3. Smaller rotors /swept area

A restriction in the rotor diameter/swept area could reduce the collision risk to ornithological features, however smaller rotors for the same number of WTGs would result in a lower capacity project which would limit the ability of the Project to achieve its objectives. Further, to achieve the same offshore wind farm capacity through using smaller rotors would require a greater number of WTGs over a wider area, which would potentially increase the magnitude of potential effects on ornithology receptors. For these reasons, this alternative design is not considered a feasible alternative.

5.5.3.4. Alternative operational protocols, i.e. seasonal restrictions

A seasonal restriction in the operation of WTGs could potentially reduce collision risk during peak migration periods, however the success of this type of measure is inherently uncertain. Given the aim of the Project to electrify nearby oil and gas platforms with low carbon power generation, and to optimise generation capacity within the constraints of the site, this alternative does not meet Project objective 4 and would only partially meet Project objectives 1-3, 6 and 7. In order to meet INTOG, NSTD and Scottish emissions targets and to combat the climate emergency, every project needs to deliver at their optimal level. An alternative that delivers a reduced output is not acceptable and is also not financially feasible and would therefore render the Project unable to meet any of its objectives.

This option is also not technically feasible, as a seasonal shut down is likely to invalidate warranties and could lead to;

- Damage/seizing of rotational equipment;
- Damage to components due to uneven loading and weather/maritime-related issues;
- Battery depletion, leading to Electrical Health and Safety concerns, and
- Additional inspection time and cost prior to each re-start.

5.5.3.5. Conclusions

None of the alternative design options for the Project considered above are considered feasible, for the reasons provided.

Given the global climate change emergency and the need to meet net zero targets it is not acceptable to have a reduction in generating capacity, optimisation is imperative and necessary to meet legally binding targets for decarbonisation.

Table 5-4 below presents the conclusions for each alternative design solution with respect to the objectives of the Project.

Table 5-4: Performance of alternative design solutions against the Project objectives

ALTERNATIVE SOLUTION	DOES IT MEET THE PROJECT OBJECTIVES?							IS IT FINANCIALLY FEASIBLE?	IS IT LEGALLY FEASIBLE	IS IT TECHNICALLY FEASIBLE?	CONCLUSION
	1: To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply	**2: To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply**	**3: To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters**	**4: To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.**	**5: Lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland.**	**6. 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**	**7. 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 developable area/overall number of WTGs	Partially - Would reduce contributions towards Scottish decarbonisation targets compared to the current design.	Partially - Would contribute to increasing energy security in Scotland at a reduced rate compared to the current design.	Partially - Would contribute to decarbonising oil and gas platforms in Scottish waters at a reduced rate compared to the current design.	No - Would not optimise the generation and export capacity within the current constraints as it would be of a reduced size to the current design.	Partially - Would develop the Scottish supply chain at a reduced rate compared to the current design.	Partially - Would contribute to Scottish and UK Government targets relating to climate change and net zero but at a reduced rate compared to current design.	Partially - Would ensure that long-term energy is available to the consumer but if less capacity is provided then reduced economies of scale might not achieve the lowest price to the consumer.	Not assessed as not a feasible alternative.	Not assessed as not a feasible alternative.	Not assessed as not a feasible alternative.	Modifications to the size of the developable area and number of WTGs does not meet all of the Project objectives, and therefore is not considered a feasible alternative.
Increased air gap	Yes - Would contribute towards Scottish decarbonisation targets	Yes - Would contribute to increasing energy security in Scotland	Yes - Would contribute to the decarbonisation of oil and gas platforms.	Yes - Would optimise the generation and export capacity within the current constraints of available Scottish sites.	Yes - Would develop the Scottish supply chain.	Yes - Would contribute to Scottish and UK Government targets relating to climate change and net zero.	Possibly - Would not ensure reduced costs to the consumer as it may materially increase the cost to the consumer.	Yes	Yes	Yes	A modification to the air gap is not technically feasible as an increase to the air gap would lead to an increase in WTG tip height, which would potentially have significant effects on aviation flight paths and safety.
Smaller rotors/swept area	Partially - Would reduce contributions towards Scottish decarbonisation targets compared to the current design.	Partially - Would contribute to increasing energy security in the UK but likely at a reduced rate compared to the current design.	Partially - Would generate and deliver low carbon from offshore windfarms in support of decarbonisation of oil and gas infrastructure but likely at a reduced rate compared to	No - Would likely not optimise generation and export capacity within the constraints of available Scottish sites.	Yes - Would develop the Scottish supply chain.	Yes - Would contribute to Scottish and UK Government targets relating to climate change and net zero but likely at a reduced rate compared to current design.	Partially - Would ensure that long-term energy is available to the consumer but if less capacity is provided then reduced economies of scale might not achieve the	Yes	Yes	Yes	Modifications to the size of the rotors is not a feasible alternative as it would either fail the Project objectives or result in an increase in ecological impacts (a larger number of turbines in the array area to maintain capacity). Therefore, this is not

ALTERNATIVE SOLUTION	DOES IT MEET THE PROJECT OBJECTIVES?							IS IT FINANCIALLY FEASIBLE?	IS IT LEGALLY FEASIBLE	IS IT TECHNICALLY FEASIBLE?	CONCLUSION
	1: To generate low carbon electricity from offshore wind farms in support of the decarbonisation of the Scottish electricity supply	**2: To export electricity to the Scottish electricity grid to support Scottish commitments for offshore wind generation and security of supply**	**3: To generate and deliver significant capacity of low carbon electricity to existing oil and gas infrastructure to maximise the decarbonisation opportunity in Scottish waters**	**4: To optimise generation and export capacity within the constraints of available Scottish sites and onshore transmission infrastructure.**	**5: Lead the scaling up of floating offshore wind supply chain in Scotland, with the associated economic development benefits for Scotland.**	**6. 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**	**7. To ensure that, in the long-term, energy is available to consumers at the lowest possible cost to ensure the highest quality of life.**				
			the current design.				lowest price to the consumer.				considered a feasible alternative.
Alternative operational protocols (seasonal restrictions)	Partially - Would reduce contributions towards Scottish decarbonisation targets compared to the current design.	Partially - Would contribute to increasing energy security in the UK but at a reduced rate compared to the current design.	Partially - Would generate and deliver low carbon energy from offshore windfarms in support of decarbonisation of oil and gas infrastructure but at a reduced rate compared to the current design.	No - Would not optimise generation and export capacity within the constraints of available Scottish sites.	Yes - Would develop the Scottish supply chain.	Partially - Would contribute to Scottish and UK Government targets relating to climate change and net zero but at a reduced rate compared to current design.	Partially - Would ensure that long-term energy is available to the consumer but if less capacity is provided then reduced economies of scale might not achieve the lowest price to the consumer.	No	Yes	Yes	Seasonal restrictions to reduce the number of predicted collisions of features from the relevant SPAs would require the shut-down of turbines potentially for months within a year. This would mean that objectives to electrify nearby oil and gas platforms and optimising energy generation capacity would not be met. It will also lead to higher maintenance requirements of the WTGs during the operation and maintenance phase, leading to increased operational costs. It is also not financially viable. Therefore, this is not considered a feasible alternative.

5.6. No alternative solutions case: Step 4 – Assessment of any identified feasible alternative solutions

Step 4 involves an assessment and comparative analysis of the potential effects of any identified feasible alternatives on both the identified designated sites where AEoSI has been concluded, and the NSN as a whole. However, as established above, none of the potential alternatives considered are feasible alternatives and, therefore, no assessment within Step 4 is required.

5.7. Summary of alternative solutions

The section above follows a four-step process in identifying and analysing potential alternatives to determine whether they are feasible and worthy of further assessment. The overall conclusion of this exercise was that there are no feasible alternatives to the Project, with justifications summarised within Table 5-5.

Table 5-5 Summary of alternatives solutions conclusions

ALTERNATIVE	SUMMARY OF REASONS WHY DISCOUNTED.
Do nothing	This option does not meet any of the objectives of the Project.
Alternative locations outside of the UK REZ	This option is not legally feasible for the Applicant, nor does it meet any of the objectives of the Project.
Locations within the UK, outside Scottish waters	This option is not legally feasible for the Applicant, nor does it meet any of the objectives 1-5 of the Project.
Locations within Scottish waters	This option is not legally feasible nor does it meet objective 4.
Locations within E-a Lease Plan Option area	The development of alternative within the E-a Lease Plan Option area, would not meet objective 4 and is not a technically feasible or optimal option.
Alternative design	None of the alternative designs are considered feasible alternatives as they either fail or impede achievement of Project objectives, potentially result in increased ecological impacts or are not technically feasible for the Applicant.

6. Imperative Reasons of Overriding Public Interest

6.1. Introduction to IROPI

This section of the report demonstrates the IROPI to enable the Scottish Ministers to authorise the Project, should their HRA reach a conclusion of AEoSI.

There is a strong argument that the Project must be completed for IROPI as determined by Scottish and UK Government legal commitments, policy objectives, and precedent set in the UK and in Scotland in previous OWF decisions.

The IROPI case is supported by, and draws in particular upon, the following documents which accompany the consent application for the Project:

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

6.2. Approach to the assessment of IROPI

6.2.1. Overview

This section of the document sets out a compelling case that the Project must be carried out for IROPI in view of its environmental, social and economic benefits, which are needed to achieve the various global, UK and Scottish Government climate change targets/legal commitments, as well as other essential socio-economic public needs. This is validated within Regulation 64 where it states:

> *'64 (1) If the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site (as the case may be).*
>
> *(2) Where the site concerned hosts a priority natural habitat type or a priority species, the reasons referred to in paragraph (1) must be either—*
>
> *(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or*
>
> *(b) any other reasons which the competent authority, having due regard to the opinion of the [appropriate authority], considers to be imperative reasons of overriding public interest.*

The consideration of IROPI requires a balance between preserving the conservation objectives of designated sites and the integrity of the NSN as a whole, and the public benefits provided by the project. For the Project to be consented, Scottish Ministers must be confident that the benefits outweigh the negatives.

Relevant guidance (DTA, 2021a) defines the key aspects of IROPI as follows:

- **Imperative:** the plan or project must be 'required', or 'indispensable, or it must be 'essential' (whether urgent or otherwise) that the plan or project proceeds;

- **Public** Interest: a public benefit must be delivered rather than a solely private interest, but plans and projects involving private interest are not excluded so long as there is an adequate public interest, and the private interests are not taken into account in the justification;
- **Overriding**: in the sense that whatever the benefits may be, they must be weighed up against the damage and they must demonstrably outweigh the potential harm to the site; and
- **Long-term**: have a long-term, not merely a short-term benefit.

These principles are explored further in Sections 6.3, 6.4, 6.5, and 0 respectively.

6.2.2. Relevant examples of IROPI decisions

To date, there have been seven derogation cases for English OWFs that have passed the IROPI test and one for Scotland, these are:

- Hornsea Three OWF;
- Hornsea Four OWF;
- Norfolk Boreas OWF;
- Norfolk Vanguard OWF;
- East Anglia ONE North OWF;
- East Anglia TWO OWF;
- Dudgeon and Sheringham Extension projects, and
- Green Volt OWF.

For the English OWFs, the UK Secretary of State in each case considered that the IROPI were significant, and the public benefits outweighed the adverse effects of the project. For example, for Hornsea Three (BEIS 2020a). the Secretary of State's conclusions were:

> *'The principal and essential benefit of the Development as a significant contribution to limiting the extent of climate change in accordance with the objectives of the Climate Change Act 2008. The consequences of not achieving those objectives would be severely deleterious to societies across the globe, including the UK, to human health, to social and economic interests and to the environment'.*

The SoS also stated that:

> *'Decarbonisation will lead to a substantially increased demand for electricity as other power sources are at least partially phased out or transformed. Simultaneously the supply of electricity must decarbonise. This will require the establishment of a reliable and secure mix of low-carbon electricity sources, including large-scale development of offshore wind generation'*
>
> *'Offshore wind generation schemes can only be developed through the mechanism put in place by The Crown Estate for leasing areas of the seabed in a structured and timely way. Projects, like the Development, which make a significant contribution to meeting the target capacity in the timeframe required are therefore both necessary and urgent'.*

This rationale is similarly applied for all the decisions on the derogation cases for English projects. In Scotland, Green Volt OWF has been consented, having submitted a 'without prejudice' derogation case (Green Volt Offshore Windpower Limited 2023), with the Scottish Ministers determining that IROPI were satisfactory for consent to be granted (with the other derogation tests also being met). Scottish Ministers stated (Scottish Government 2024b);

'In light of the Scottish and UK legislative commitments and policy frameworks outlined above and the acute urgency to maintain and quicken the pace of delivery in tackling the climate crisis (most recently articulated by the Climate Change Committee in relation to Scotland's near-term climate objectives), the Scottish Ministers consider that the Project will make an important contribution to serving the national public interest, reflecting the clear and urgent need for reducing carbon emissions as swiftly as possible, the imperative to decarbonise fossil fuel production, the requirement to develop the renewable energy infrastructure to deliver on both of those key objectives (in particular via the floating offshore wind technology to be deployed by the Project) and the current lack of alternatives.'

'The Scottish Ministers are therefore of the view that there is an imperative reason which justifies the need for the Project and as such overrides the Adverse Effect on the Integrity of the designated Sites ("AEOSI") and the conservation objectives at risk. Scottish Ministers also note that the public interest inherent in tackling the climate crisis is also served by the fact that mitigation of the Derogation Case for Green Volt Offshore Wind Farm climate crisis will in turn alleviate the nature crisis, given that many of the pressures exerted by the nature crisis emanate from the climate crisis.'

6.2.3. Content and structure

The parameters of IROPI are explored in guidance provided by DTA (DTA 2021a) which identifies the following principles:

- Step 1: Imperative Reasons (demonstrating the urgency and importance of the Project);
- Step 2: Public Interest (demonstrating the public interest served by the Project);
- Step 3: Overriding (weighing the public interest served with the potential impacts on the National Site Network); and
- Step 4: Long-term interest (demonstrating the long-term nature of the interests served by the Project).

These principles are expanded on in the sections below.

6.3. IROPI case: Step 1 – Imperative reasons

6.3.1. Introduction

Imperative reasons must have urgency and importance: There would usually be urgency to the Project objectives(s) and it must be considered 'indispensable' or 'essential' (i.e. imperative). In practical terms, this can be evidenced when the objective falls within a framework for one or more of the following:

- Actions or policies aiming to protect fundamental values for citizen's life (human health, public safety, and beneficial consequences of primary importance to the environment);
- Fundamental policies for the State and the Society; or
- Activities of an economic or social nature, fulfilling specific obligations of public service.

6.3.2. Human health, public safety and beneficial consequences of primary importance to the environment

The imperative reasons that justify the Project are all based around the need for the Project, as summarised in Section 4 of this report, with the most important aspect being the key contribution towards combatting climate change and providing energy security for both the UK and Scotland. These make up the reasons relating to 'human health, public safety or beneficial consequences of primary importance to the environment' which constitute IROPI as stated within the guidance.

6.3.2.1. Human health

As described within Section 4, climate change is a significant risk to human health on a worldwide scale. The latest IPCC report (AR6) concludes that without immediate, rapid and large-scale reductions in GHG, limiting warming close to 1.5°C or even 2°C will be beyond reach. Some of the impacts of climate change that will impact human health include extreme weather events through droughts, floods and heat waves, while also resulting in general catastrophic environmental damage to systems that humans rely on 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. The AR6 report (part 2) was accompanied by a press release (IPCC 2022) stating;

> *'The scientific evidence is unequivocal climate change is a threat to human wellbeing and the health of the planet'.*

While there are a range of projects throughout the UK to assist with decarbonisation (e.g., other OWF projects), there are not currently enough projects proposed to reach the UK 2050 net zero target, the 2045 Scottish net zero target or the UK 50 GW by 2030 target. 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 in the short-term and reducing the risk of climate change on human health.

Furthermore, given the Scottish winter 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.

6.3.2.2. Public safety

Given the dependence of the UK on electricity for almost all aspects of day-to-day life, and the increasing demand for energy (see Section 4), it is considered that energy affordability and security of supply is a matter of public safety. Reducing 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 respectively). 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 not based on imports of 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 there is IROPI in the form of energy security (and therefore public safety) alone as well as improving energy affordability, another public benefit.

6.3.2.3. 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. The impacts effect not only humans, as increasing global temperatures above the suggested 1.5°C would 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.

Seabirds are known to be significantly impacted by climate change effects, with the results of the latest seabird census, Seabirds Count, revealing that almost two thirds of Scotland's breeding seabird species have declined over twenty years (RSPB, 2023). One of the primary drivers is the decline of prey stocks due to ocean temperature changes and ocean acidification, which in turn leads to a rapid decline in seabird populations (Johnston et al., 2021). This is most notable on sandeel around Scotland, a key food for many seabird populations. 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 to feed chicks can reduce seabird breeding success.

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.

Seabird populations are also affected directly 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. 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, for example. 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 weakening, primarily driven by an increase in cold fresh water from the melting of the Arctic Sea ice, which disrupts the circulation of denser salt water which drives the flow of the whole AMOC. It is considered that as the AMOC weakens, the climate will change, particularly in the Northern Atlantic region, including Scotland (Johnston et al., 2021).

Recent studies have estimated that following the current scenario of 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, 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. There would also be an increase in storm frequency and intensity, providing a significant threat to human life (McCarthy et al., 2023).

A key step in significantly reducing Scottish carbon emissions is recognised to be the electrification and decarbonisation of the existing oil and gas industry in the North Sea (DESNZ 2021). Emissions from the fossil fuel supply sector were 33 MtCO2e 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 would provide renewable electricity to oil and gas assets as well as having an onshore grid connection and 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 to the environment, by preventing the further loss of the marine environment, particularly seabirds.

As the Project would provide a significant contribution to the provision of renewable energy, it is considered that there is IROPI in the form of beneficial consequences of primary importance to the environment alone.

6.3.2.4. Summary

Based on all the above information, it is considered that the Project is both necessary and urgent and is justified by imperative reasons based on human health, public safety and delivery of beneficial consequences of primary importance to the environment.

6.3.3. Economic and social benefits

6.3.3.1. Introduction

The public interest for 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 4.4 and 4.5) result in economic benefits for consumers, but the Project will provide substantial benefits to the UK economy including facilitating confidence in the Scottish and UK local supply chain, growing a skilled workforce and providing wider community benefits while also working towards a Just Transition away from fossil fuels in Northeast Scotland.

6.3.3.2. Employment and Gross Value Added (GVA)

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.

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.

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.

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.

6.3.4. Conclusions

It is considered that the information presented within this section demonstrates to the Scottish Ministers that there are imperative reasons 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 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, based on human health and public safety above all else, the Project is considered to be imperative.

6.4. IROPI case: Step 2 – Public interest

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 and to all citizens of Scotland and the wider UK.

The identification and development of offshore sites and the Scottish INTOG SMP Option areas (including Cenos OWF) 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 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 legislative policies are not being met. These policies are implemented with the aims of providing public benefits, and therefore the contribution of the Project to these policies 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, decarbonisation of oil and gas platforms, increasing the security of supply, increasing the affordability of supply, and meeting national policy targets are all key public benefits. Therefore, there is a clear public interest in the Project proceeding.

6.5. IROPI case: Step 3 – Overriding

6.5.1. A balancing exercise

As evidenced above, there is an imperative public interest for the Project to proceed. However, to successfully pass the IROPI test as described within provision 64(1) of the Habitats Regulations, these reasons must be overriding. In a practical sense, this means 'weighing up' the benefits of the Project against the potential effects on designated sites, to achieve the correct balance of the two. This balancing exercise is the responsibility of the Scottish Ministers as the competent authority.

While the HRA process as described within Section 2.3 and Section 2.4 provides the context for this determination, and the Applicant considers that the evidence presented within Sections 4 and 5 (and reiterated here within Section 6) above are sufficient to conclude that there is an imperative public

need for the Project, ultimately it is down to the competent authority to exercise their professional and expert judgment in deciding whether the established Project benefits are overriding.

6.5.2. The overriding factors

The public interests served by the Project are considered to be of the highest level of urgency, both with roots in national and international policy, and for the general welfare of humans across the world. The benefit with the greatest urgency is the mitigation of climate change effects and the decarbonisation of Scotland's energy supply and oil and gas platforms and the significant contribution that has on combatting climate change, and the reduction in cost/increase in affordability of supply. As detailed above, these are relating to human health, public safety and beneficial consequences of primary importance to the environment, therefore meaning the Project can be considered overriding under regulation 64(2). It is considered that either of these two justifications would be considered as IROPI, so both together result in an unarguable determination of IROPI for the Project.

Furthermore, relevant guidance (DTA, 2021a) states that offshore wind projects are highly likely to override their impacts to NSN sites:

> *'Given the urgency of the climate change crisis, and having demonstrated the absence of alternative solutions, Scottish Ministers anticipate that it is highly unlikely that the public interest served by delivery of offshore wind proposals will not override the conservation interests'.*

As detailed throughout Section 4 and reiterated above, the Applicant is content that the benefits served by the Project are imperative and in the public interest and, as set out here, the Applicant also considers these benefits to override the AEoSI identified within Table 2-2.

6.6. IROPI case: Step 4 – Long-term interest

Due to the operational lifetime of offshore wind farms, the requirements of decarbonisation and climate change, the aspects of IROPI considered above are deemed to be long-term interests. For example, the typical operational lifetime of an offshore wind farm is in the region of 35 years and therefore the energy supplied by the Project will be of benefit to the public for the long-term - essentially contributing to a decarbonised, secure and affordable energy supply well beyond the 2030, 2045 and 2050 net zero targets.

Decarbonisation on the scale required for the UK and Scotland will take a long time to achieve and the need and urgency will continue to increase. Not only is the 2045 net zero target within Scotland still over two decades away and inherently a long-term aim, once it is achieved it will need to be maintained permanently. The targets are designed to result in a system where there is no reliance on hydrocarbon or imported fuels, and the environment is protected with significant mitigation afforded to climate change. Given the established energy infrastructure, 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 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.

6.7. Summary of IROPI

In summary, the Applicant is confident that the Project passes all of the IROPI tests as required under the Habitats Regulations.

The Project significantly contributes to national and international decarbonisation targets, providing both short and long-term human and environmental benefits. The IROPI detailed within this section are for human health, public safety and benefits of primary importance of the environment, which are all considered to outweigh the impacts identified within the RIAA based on existing Scottish policy and guidance, and on previous OWF decisions in both Scotland and the wider UK.

The Applicant considers the evidence provided within this report to conclusively demonstrate the importance of the Project in a range of ways, proving that the Project must be constructed in relation to IROPI.

7. Compensatory Measures

As established within Section 2.4, if the Scottish Ministers determine that there are no alternative solutions to the Project, and there are satisfactory IROPI, compensation must be secured to offset any potential impacts and maintain the coherence of the NSN.

A range of compensation measures have been considered by the Applicant, resulting in several measures being chosen as feasible compensation for the potential impacts of the Project.

A full assessment of the proposed compensatory measures can be found in the **Habitats Regulation Appraisal: Compensation and Implementation Strategy**.

The Applicant is confident that the proposed compensatory measures will provide adequate compensation for the potential impacts associated with the Project.

8. Derogation Case Conclusions

At the conclusion of the Applicant's RIAA, it was determined that there would be no adverse effect on site integrity (AEoSI) on any National Site Network (NSN) site. Following consultation with Marine Directorate Licensing Operations Team (MD-LOT), Nature Scot and based on conclusions for other OWF farm sites (Scottish Government 2024a) a 'without prejudice' derogation case is provided for Forth Islands SPA for the gannet and puffin features and for the kittiwake features of Buchan Ness to Collieston Coast SPA, Fowlsheugh SPA, East Caithness Cliffs SPA, Forth Islands SPA and Troup, Pennan and Lion's Heads SPA.

This derogation case is provided to be available in the event that Scottish Ministers conclude that an AEoSI cannot be ruled out for any of the sites listed in Section 2.5, and that therefore, they are required to determine whether there are no alternative solutions to the Project, whether there are satisfactory IROPI and whether compensation can be secured to offset any potential impacts and maintain coherence of the NSN.

This derogation case provides the necessary information for Scottish Ministers to consider these derogation tests and conclude that they can be met for the Project.

As evidenced in Section 4, there is an imperative global need to help address the climate change emergency through decarbonisation of energy supplies, for the primary purpose of preserving life on planet Earth. Decarbonisation of the UK energy supply is therefore one of the primary objectives of the Project.

Additional key objectives for the Project include decarbonisation of the oil and gas platforms in the Central North Sea, strengthening UK energy security of supply thus ensuring independence from imported sources and ensuring that energy is available to consumers at the lowest possible cost.

The urgent need for the Project is justified as follows:

- The Project will deliver up to 1.35 GW of renewable energy, providing a substantial contribution to decarbonisation and net zero targets and help combat climate change by offsetting millions of tonnes of CO2 every year;
- The Project will decarbonise up to 10 oil and gas platforms in the Central North Sea, meeting a key aim of the North Sea Transition Deal;
- The loss of potential 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;
- The Project will use floating technologies allowing for the optimisation of the available resource within the INTOG Lease Plan Option area;
- 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 contribute to the Just Transition away from non-renewable energy sources, particularly relevant to those people who rely on the fossil fuel industry within the Northeast of Scotland;
- Design choices and consenting strategies mean the Project can be delivered as one of the first large scale INTOG projects. Early delivery reduces risk of supply chain issues and keeps Scotland/UK on track for continued installation and powering of OWF projects; and

- The Project is considerably advanced compared to other INTOG Plan option areas within Scotland enabling the delivery of low cost, low carbon energy sooner than other projects (further supporting the Just Transition).

The Applicant is confident this report and supporting documentation provide all the necessary information to support a clear and overriding case for the Project. This report should enable Scottish Ministers to conclude that there are no feasible alternative solutions, the Project should be carried out for reasons of IROPI and compensation measures can be provided to ensure the overall coherence of the UK NSN is protected.

9. References

Berwick Bank Windfarm Limited (2022). Derogation Case. Available at: https://marine.gov.scot/sites/default/files/eor0766_berwick_bank_wind_farm_application_-_1._derogation_case.pdf [Accessed September 2024].

Birds Directive (2009/147/EC) Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147 [Accessed December 2024].

Boyce, D.G., Tittensor, D.P., Garilao, C., Henson, S., Kaschner, K., Kesner-Reyes, K., Pigot, A., Reyes Jr, R.B, Reygondeau, G., Schleit, K.E., Shackell, N.L., Sorongon-Yap, P., Worm, B. (2022). A climate risk index for marine life. Nature Climate Change, 12: 854-862.

Caledonia Offshore Wind Farm Ltd (2024) Caledonia North Habitats Regulations Appraisal Derogation Case. Available at https://marine.gov.scot/sites/default/files/241118_-_caledonia_-_eia_application_-_ad15_hra_derogation_case_-_redacted.pdf Caledonia South Habitats Regulation Appraisal Derogation case. Available at https://marine.gov.scot/sites/default/files/241118_-_caledonia_-_eia_application_-_ad16_-_caledonia_south_-_hra_derogation_case_-_redacted.pdf [Accessed December 2024].

Climate Action Tracker (2023). Warming Projections Global Update, December 2023. Available at: https://climateactiontracker.org/documents/1187/CAT_2023-12-05_GlobalUpdate_COP28.pdf [Accessed September 2024].

CMS (2021). Habitat Regulations Appraisal (HRA) Derogations for Offshore Wind Projects in Scotland – Legal Framework for Decisions. Available at: https://www.offshorewindscotland.org.uk/media/12969/hra-derogation-scope-a-report.pdf [Accessed September 2024].

Committee on Climate Change (CCC) (2019) 'Net Zero – The UK's contribution to stopping global warming'. Available at: https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/?_hsenc=p2ANqtz--g9zbc7Otf6N0Kf7IyFdVm7iDMCMxkFVpPU7N4TD5wrRMuCOgo76TlRXJhL7zZdrplYIlb [Accessed December 2024]

Committee on Climate Change (CCC) (2022). 2022 Report to Parliament – Progress in reducing emissions. Available at: https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/ [Accessed December 2024].

Committee on Climate Change (CCC) (2024a). Progress in reducing emissions: 2024 Report to Parliament. Available at: https://www.theccc.org.uk/wp-content/uploads/2024/07/Progress-in-reducing-emissions-2024-Report-to-Parliament-Web.pdf [Accessed on December 2024].

Committee on Climate Change (CCC) (2024b) 'Scotland's 2030 climate goals are no longer credible'. Available at: https://www.theccc.org.uk/2024/03/20/scotlands-2030-climate-goals-are-no-longer-credible/ [Accessed December 2024].

David Tyldesley and Associates Ecology (DTA) (2015). Habitats regulations appraisal of plans: Guidance for plan-making bodies in Scotland. Available at: https://www.nature.scot/sites/default/files/2019-07/Habitats%20Regulations%20Appraisal%20of%20Plans%20-%20plan-making%20bodies%20in%20Scotland%20-%20Jan%202015.pdf [Accessed September 2024].

David Tyldesley and Associates Ecology (DTA) (2021a in draft). Policy guidance document on demonstrating the absence of Alternative Solutions and imperative reasons for overriding public

interest under the Habitats Regulations for Marine Scotland, Draft report 31 November 2021 (not out to general consultation).

David Tyldesley and Associates Ecology (DTA) (2021b in draft). Framework to Evaluate Ornithological Compensatory measures for offshore Wind process Guidance Note for Developers. Advice to Marine Scotland.

David Tyldesley and Associates Ecology (DTA) (2021c). The Habitats Regulations Assessment Handbook. 2021 edition UK, available through membership to DTA. Available at: www.dtapublications.co.uk [Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2020a). Decision Letter for Hornsea Three, 31 December 2020. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-003265-EN010080%20Hornsea%20Three%20-%20Secretary%20of%20State%20Decision%20Letter.pdf m[Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2020b). Energy White Paper: Powering our net zero future. Available at: https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future [Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2020c). Policy paper, Offshore wind Sector Deal. Available at: https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal [Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2021). Decision Letter for Norfolk Boreas, 20 December 2021. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010087/EN010087-002917-NORB-Boreas-Decision-Letter.pdf m[Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2022a). Decision Letter for Norfolk Vanguard, 11 February 2022. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-004458-NORV-SoS-decision-letter.pdf [Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2022b). Decision Letter for East Anglia One North, 31 March 2022. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-009806-EA1N%20-%20Decision%20Letter%20-%20Signed.pdf [Accessed September 2024].

Department for Business, Energy and Industrial Strategy (BEIS) (2022c). Decision Letter for East Anglia TWO, 31 March 2022. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-010064-EA2%20-%20Decision%20Letter%20Signed.pdf [Accessed September 2024].

Department for Business, Energy & Industrial Strategy (BEIS) (2022d). North Sea Transition Deal One Year on. Available at: North Sea Transition Deal: One Year On [Accessed December 2024].

Department for Business, Energy & Industrial Strategy (BEIS) (2022e) East Anglia One North Habitat Regulations Assessment. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-009803-EA1N%20-%20Habitats%20Regulations%20Assessment.pdf [Accessed December 2024].

Department for Energy Security and Net Zero (DESNZ) (2021). North Sea Transition Deal. Available at: https://www.gov.uk/government/publications/north-sea-transition-deal [Accessed September 2024].

Department for Energy Security and Net Zero (DESNZ) (2022). Policy paper. Net Zero Strategy: Build Back Greener. Available at: https://www.gov.uk/government/publications/net-zero-strategy [Accessed September 2024].

Department for Energy Security and Net Zero (DESNZ) (2023). Decision Letter for. Hornsea Project Four offshore wind farm: 12 July 2023. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-002326-Copy%20of%20SOS%20Decision%20Letter.pdf [Accessed September 2024].

Department for Energy Security and Net Zero (DESNZ) (2024a). Decision Letter for Sheringham Shoal and Dudgeon Offshore Windfarm Extension Projects. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010109/EN010109-002340-SADEPS%20SOS%20LETTER%20DESNZ%20170424.pdf [Accessed September 2024].

Department for Energy Security and Net Zero (DESNZ) (2024b). 2023 UK greenhouse gas emissions, provisional figures, Accredited Official Statistics 28 March 2024. Available at: https://assets.publishing.service.gov.uk/media/6604460f91a320001a82b0fd/uk-greenhouse-gas-emissions-provisional-figures-statistical-release-2023.pdf [Accessed September 2024].

Department for Energy Security and Net Zero (DESNZ) (2024c). Great British Energy Founding Statement. Available at: https://www.gov.uk/government/publications/introducing-great-british-energy/great-british-energy-founding-statement [Accessed September 2024].

Department for Environment, Food and Rural Affairs (Defra) (2012). Habitats Directive: guidance on the applications of article 6(4). Available at: https://assets.publishing.service.gov.uk/media/5a796c5ce5274a2acd18cb66/habitats-directive-iropi-draft-guidance-20120807.pdf [Accessed September 2024].

Department for Environment, Food and Rural Affairs (Defra) (2021a). Policy paper: Changes to the Habitats Regulations 2017. Available at: https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017 [Accessed September 2024].

Department for Environment, Food and Rural Affairs (Defra) (2021b). Draft best practice guidance for developing compensatory measures in relation to Marine Protected Areas, July 2021, Version for consultation.

Ditlevsen, P., and Ditlevsen, S. (2023). Warning of a forthcoming collapse of the Atlantic meridional overturning circulation. Nature Communications, 14, 4254.

European Commission (2002). Assessment of planed and projects significantly affecting Natura sites. Available at: https://op.europa.eu/en/publication-detail/-/publication/2b6c4b16-e867-42da-b604-f67ee6fe60c3/language-en [Accessed September 2024].

European Commission (EC) (revised 2018). Managing Natura 2000 Sites ('MN 2000'): The provisions of Article 6 of the Habitats Directive 92/43/EEC. Published by the EC in 2000, as updated in November 2018.

European Commission (EC) (2021a). Guidance document on wind energy developments and EU nature legislation. Available at: https://op.europa.eu/en/publication-detail/-/publication/2b08de80-5ad4-11eb-b59f-01aa75ed71a1 [Accessed September 2024].

European Commission (EC) (2021b). Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021XC1028(02) [Accessed September 2024].

Grantham Research Institute on Climate Change and the Environment (2018) '10 years of the UK Climate Change'. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2018/03/10-Years-of-the-UK-Climate-Change-Act_Fankhauser-et-al.pdf [Accessed December 2024].

Green Volt Offshore Windpower Limited (2023). Without-Prejudice HRA Derogation Case. Available at: https://marine.gov.scot/sites/default/files/flo-gre-rep-0021_without_prejudice_derogation_case_v2_anonymised_redacted.pdf [Accessed September 2024].

Habitats Directive (92/43/EEC). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01992L0043-20130701 [Accessed October 2024].

HM Government (2017). The Conservation of Habitats and Species Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents [Accessed December 2024].

HM Government (2022). Policy paper, British Energy Security Strategy. Available at: https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy [Accessed September 2024].

HM Government (2023a). National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/media/65a7889996a5ec000d731aba/nps-renewable-energy-infrastructure-en3.pdf [Accessed September 2024].

HM Government (2023b). Carbon Budget Delivery Plan. Available at: https://assets.publishing.service.gov.uk/media/6424b2d760a35e000c0cb135/carbon-budget-delivery-plan.pdf [Accessed September 2024].

HM Government (2024). Overarching National Policy Statement for energy (EN-1). Available at: https://assets.publishing.service.gov.uk/media/65bbfbdc709fe1000f637052/overarching-nps-for-energy-en1.pdf [Accessed December 2024].

HM Treasury (2023) Autumn Statement. Available at https://assets.publishing.service.gov.uk/media/6568909c5936bb00133167cc/E02982473_Autumn_Statement_Nov_23_Accessible_Final.pdf [Accessed November 2023].

IPCC (2021) 'The Sixth Assessment Report of the IPCC'. Available at: https://unfccc.int/topics/science/workstreams/cooperation-with-the-ipcc/the-sixth-assessment-report-of-the-ipcc [Accessed December 2024].

IPCC (2022) Press Release. Available at https://www.ipcc.ch/report/ar6/wg2/resources/press/press-release/ [Accessed December 2024]

IPCC (2023). Climate Change 2023 Synthesis Report, Summary for Policymakers. Available at: https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf [Accessed September 2024].

Jackson, L.C., Kahana, R., Graham, T., Ringer, M. A., Woollings T., Mecking, J. V. and Wood, R. A. (2015). Global and European climate impacts of a slowdown of the AMOC in a high resolution GCM. Climate Dynamics. 45(11), 3299-3316.

Johnston, D.T., Humphreys, E.M., Davies, J.G., and Pearce-Higgins, J.W. (2021). Review of climate change mechanisms affecting seabirds within the INTERREG VA area.

Marine Directorate (2024). Marine licensing and consenting: Habitats Regulations Appraisal. Available online at: https://www.gov.scot/publications/marine-licensing-and-consenting-habitats-regulations-appraisal/ [Accessed September 2024].

Matson, C. and Gogna, R. (2021). What caused January's record high electricity prices and is this the new normal?. Available online at: https://www.lcp.com/our-viewpoint/2021/02/what-caused-january-s-record-high-electricity-prices-and-is-this-the-new-normal [Accessed September 2024].

McCarthy, G.D., Burmeister, K., Cunningham, S.A., Düsterhus, A., FrajkaWilliams, E., Graham, J.A., Hodge, K.R., Holliday, N.P., Inall, M., Jackson, L.C., Menary, M.B., Moat, B.I., Moffa-Sanchez, P., Oltmanns, M., Polton, J.A., Rabe, B., Robson, J. and Thornalley, D.J.R. (2023). Climate change impacts on ocean circulation relevant to the UK and Ireland. MCCIP Science Review 2023, 29pp.

Moore, S.E. (2020). Marine mammals and climate change: impacts and conservation responses. Oceanography, 33(2), 38-47.

Muir Mhòr Offshore Wind Farm (2024). Derogation Case. Available at: https://marine.gov.scot/sites/default/files/derogation_case_1.pdf [Accessed December 2024].

National Grid ESO (NGESO) (2023). Future Energy Scenarios, July 2023. Available at: https://www.nationalgrideso.com/document/283101/download [Accessed September 2024].

North Sea Transition Authority (2022a). 33rd Offshore Oil and Gas Licensing Round. Available at: https://www.nstauthority.co.uk/news-publications/nsta-launches-33rd-offshore-oil-and-gas-licensing-round [Accessed September 2024].

North Sea Transition Authority (2022b). Emissions Monitoring Report. Available at: https://www.nstauthority.co.uk/media/8439/emr-2022-final-v2.pdf [Accessed September 2024].

Offshore Wind Power Limited (2023). West of Orkney Windfarm Derogation Case. Available at: https://marine.gov.scot/sites/default/files/west_of_orkney_windfarm_-_derogation_case.pdf [Accessed September 2024].

Office for National Statistics (2023a). SOC 2020. Available at: https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2020 [Accessed December 2024].

Office for National Statistics (2023b). All data related to subregional productivity in the UK: June 2023. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/regionalandsubregionalproductivityintheuk/june2023/relateddata [Accessed December 2024].

Office for National Statistics (2024a). Subregional productivity: labour productivity indices by local authority district. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/datasets/subregionalproductivitylabourproductivityindicesbylocalauthoritydistrict [Accessed October 2024].

Office for National Statistics (2024b). Regional gross domestic product: local authorities: 1998 to 2022. Available at: https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/regionalgrossdomesticproductlocalauthorities [Accessed October 2024].

Ossian Offshore Windfarm Limited (2024). Derogation Case. Available at: https://marine.gov.scot/sites/default/files/derogation_case_0.pdf [(Accessed September 2024].

Perkins, A., Ratcliffe, N., Suddaby, D., Ribbands, B., Smith, C., Ellis, P., Meek, E. and Bolton, M. (2018). Combined bottom-up and top-down pressures drive catastrophic population declines of Arctic skuas in Scotland. Journal of Animal Ecology, 87(6), pp.1573 - 1586.

Royal Society for the Protection of Birds (RSPB) (2016). The RSPB's 2050 energy vision: Meeting the UK's climate targets in harmony with nature. Technical Report. Available at: https://www.researchgate.net/publication/303459162_The_RSPB's_2050_energy_vision_Meeting_the_UK's_climate_targets_in_harmony_with_nature [Accessed December 2024].

RSPB (2023). Urgent action required to tackle devastating declines of Scotland's seabirds. Available at: https://www.rspb.org.uk/media-centre/scotlands-seabirds-emergency [Accessed September 2024].

Salamander Offshore Wind Farm (2024). Derogation Case. Available at: https://salamanderfloatingwind.com/wp-content/uploads/2024/offshore-wind-pdf/RP.A.3.2%20HRA%20Derogation%20Case%20Compensation%20Plan%20Roadmap.pdf [Accessed December 2024].

Scottish Government (2013) 'Scottish climate Change Adaptation Programme'. Available at: https://www.gov.scot/publications/scottish-climate-change-adaptation-programme-programme/ [Accessed May 2024].

Scottish Government (2015). Scotland's National Marine Plan. Available at: https://www.gov.scot/publications/scotlands-national-marine-plan [Accessed September 2024].

Scottish Government (2017). Scottish Energy Strategy: The future of energy in Scotland. Available at: https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/ [Accessed September 2024].

Scottish Government (2018) 'Climate Change Plan'. Available at: https://www.gov.scot/news/climate-change-plan/ [Accessed December 2024].

Scottish Government (2019). Action to address climate emergency. Available at: https://www.gov.scot/news/action-to-address-climate-emergency [Accessed September 2024].

Scottish Government (2020a). Sectoral Marine Plan for Offshore Wind Energy. Available at: https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy/ [Accessed September 2024].

Scottish Government (2020b). Policy paper: EU Exit: The Habitats Regulations in Scotland. Available at https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2 [Accessed September 2024].

Scottish Government (2020c). Offshore Wind Policy Statement. Available at: https://www.gov.scot/publications/offshore-wind-policy-statement [Accessed September 2024].

Scottish Government (2021a). Scotland's Climate Assembly – recommendations for action: SG response. Available at: https://www.gov.scot/publications/scottish-government-response-scotlands-climate-assembly-recommendations-action/ [Accessed December 2024].

Scottish Government (2021b). Energy strategy: position statement. Available at: https://www.gov.scot/publications/scotlands-energy-strategy-position-statement [Accessed September 2024].

Scottish Government (2022a). Sectoral Marine Plan – offshore wind for innovation and targeted oil & gas decarbonisation: initial plan framework. Available online at: https://www.gov.scot/publications/initial-plan-framework-sectoral-marine-plan-offshore-wind-innovation-targeted-oil-gas-decarbonisation-intog/ [Accessed September 2024].

Scottish Government (2022b) 'National Marine Plan 2 - Strategic Environmental Assessment: Scoping Report'. Available at: https://www.gov.scot/publications/national-marine-plan-2-strategic-environmental-assessment-scoping-report/ [Accessed December 2024].

Scottish Government (2023a). Scotland's Energy Strategy and Just Transition Plan: Ministerial Statement by Cabinet Secretary for Net Zero, Energy and Transport Michael Matheson in the Scottish Parliament on Tuesday 10 January 2023. Available at: https://www.gov.scot/publications/scotlands-energy-strategy-transition-plan-ministerial-statement/ [Accessed September 2024].

Scottish Government (2023b). Draft Energy Strategy and Just Transition plan. Available at: https://www.gov.scot/publications/draft-energy-strategy-transition-plan/pages/9 [Accessed September 2024].

Scottish Government (2023c). Update on Scotland's renewables and wind power potential. Available at: https://www.gov.scot/publications/renewables-and-wind-power-update-to-scottish-affairs-committee/ [Accessed September 2024].

Scottish Government (2023d) Programme for Government 2022-2023. Available at: https://www.gov.scot/publications/stronger-more-resilient-scotland-programme-government-2022-23/ [Accessed December 2024].

Scottish Government (2024a) Green Volt Appropriate Assessment. Available at https://marine.gov.scot/sites/default/files/240419_-_green_volt_-_eia_application_-_annex_b_-_appropriate_assessment.pdf [Accessed December 2024].

Scottish Government (2024b). Derogation case for Green Volt Wind Farm April 2024. Available at: https://marine.gov.scot/sites/default/files/240419_-_green_volt_-_eia_application_-_annex_e_-_derogation_case.pdf [Accessed September 2024].

Scottish Government (2024c). Climate Change Committee Scotland report – next steps: Net Zero Secretary Statement – 18 April 2024. Available at: https://www.gov.scot/publications/climate-change-committee-scotland-report-next-steps/ [Accessed December 2024].

Scottish Government (2024d). Scottish Ministers' Consideration of the Case for a Derogation under The Conservation (Natural Habitat, & C. Regulations 1994 and The Conservation of Offshore Marine Habitats and Species Regulations 2017). Available at: https://marine.gov.scot/sites/default/files/240419_-_green_volt_-_eia_application_-_annex_e_-_derogation_case.pdf [Accessed September 2024].

Scottish Natural Heritage (SNH) (2014). Natura Casework Guidance: How to consider proposals affecting SACs and SPAs. Available at: https://www.nature.scot/sites/default/files/2018-05/Guidance%20-%20Natura%20Casework%20Guidance%20-%20How%20to%20consider%20plans%20and%20projects%20affecting%20Special%20Areas%20of%20Conservation%20%28SACs%29%20and%20Special%20Protection%20Areas%20%28SPAs%29.pdf [Accessed September 2024].

Scottish Renewables (2024). Statistics. Available at: https://www.scottishrenewables.com/our-industry/statistics [Accessed September 2024].

Spurrier v Transport Secretary (2019). Available online at: https://www.judiciary.uk/wp-content/uploads/2019/05/Heathrow-main-judgment-1.5.19.pdf [Accessed October 2024].

Staffell, I., Green, R., Gross, R., Green, T. and Clark, L. (2020). Electric Insights Quarterly: January to March 2020. Available at: https://reports.electricinsights.co.uk/wpcontent/uploads/2020/10/200515_Drax_20Q1_A2.pdf [Accessed September 2024].

Statista Research Department (2024). Average monthly electricity prices in Great Britain 2013-2024. Available at: https://www.statista.com/statistics/589765/average-electricity-prices-uk [Accessed September 2024].

United Nations Framework Convention on Climate Change (UNFCC) (2016) ‘The Paris Agreement’. Available at: https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf [Accessed December 2024].