Derogation Case

MarramWind Offshore Wind Farm

December 2025

MarramWind

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Contents

1. Introduction 7

1.1 Project background 7
1.1.1 MarramWind 7
1.1.2 The Applicant 7
1.1.3 Overview of the Project 7
1.1.4 Report to Inform Appropriate Assessment conclusions 8
1.2 The Project 12
1.3 Structure of the Derogation Case 12
1.4 Supporting information 13
1.5 Consultation 13

2. Methodology, Legal Framework and Guidance 15

2.1 The Habitats Regulations 15
2.2 HRA Process to date and the Applicant's position on AEoSI 18
2.3 HRA Derogations guidance and precedent 19
2.3.1 Guidance 19
2.3.2 Planning precedent 21

3. The Need for the Project 23

3.1 Overview 23
3.2 Legislation and policy landscape 24
3.2.1 Overview 24
3.3 Climate Change, Net Zero and decarbonisation 37
3.3.1 The Climate Emergency 37
3.3.2 Decarbonisation and Net Zero 38
3.3.3 Offshore wind and decarbonisation 42
3.4 Energy requirements 43
3.4.1 The global energy gap 43
3.4.2 The need for additional offshore wind deployment 44
3.5 Security of supply 45
3.6 Affordability of supply and wider socio-economic benefit 45
3.7 Supply chain development for large scale floating offshore wind 47
3.8 Summary of the need for the Project 47

4. No Alternative Solutions 48

4.1 Approach to demonstrating the absence of alternative solutions 48
4.1.1 Introduction 48
4.1.2 Step 1 – core objectives of the Project 49
4.1.3 Step 2 – the 'do-nothing' scenario 50
4.1.4 Step 3 – identify alternative solutions 51
4.2 No alternative solutions: Step 1 – core objectives of the Project 53
4.3 No alternative solutions: Step 2 – 'do nothing' scenario 55

4.4 No alternative solutions: Step 3 – identify feasible alternative solutions 58
4.4.1 Scope of alternatives considered 58
4.4.2 Alternative OAA locations 58
4.4.3 Alternative design solutions for the Project 64
4.5 Summary of alternative solutions 70

5. Imperative Reasons for Overriding Public Interest (IROPI) 71

5.1 Approach to the assessment of IROPI 71
5.1.1 Overview 71
5.1.2 Content and structure 71
5.2 IROPI Case: Step 1 – imperative reasons 72
5.2.1 Introduction 72
5.2.2 Human health, public safety and beneficial consequences of primary importance to the environment 72
5.2.3 Economic and social benefits 75
5.3 IROPI Case: Step 2 – public interest 76
5.4 IROPI Case: Step 3 – long term interest 78
5.5 IROPI Case: Step 4 – overriding 78
5.5.1 A balancing exercise 78
5.5.2 The overriding factors 79
5.6 Summary of IROPI 79

6. Compensatory Measures 80

7. Derogation Case Conclusions 81

8. References 83

9. Glossary of Terms and Abbreviations 94

9.1 Abbreviations 94
9.2 Glossary of terms 96

Table 2.1 The Habitat Regulations provisions 16
Table 2.2 Relevant Scottish Derogation provisions 18
Table 3.1 Project objectives 23
Table 3.2 Legislative and policy context 25
Table 4.1 Rational for the Project objectives 54
Table 4.2 Performance of the do-nothing scenario against the Project objectives 57
Table 4.3 Performance of alternative locations against the Project objectives 61
Table 4.4 Performance of alternative design solutions against the Project objectives 66
Table 4.5 Summary of potential alternatives 70

Plate 3.1 GHG Emissions since 1990 within Scotland, and the target of Net Zero (Scottish Government, 2023b) 38
Plate 3.2 UK GHG emissions between 1990 and 2023 (DESNZ, 2024c) 40
Plate 3.3 Scottish gross electricity consumption and percentage renewables output (Scottish Renewables, 2024) 41
Plate 3.4 Electricity generation in Scotland by fuel (Gwh) (Scottish Renewables, 2024) 41
Plate 3.5 The emissions gap between current global policies, targets / pledges and the Paris Agreement target (Climate Action Tracker, 2024) 43
Plate 3.6 Offshore wind capacity in GW, excluding non-networked wind (NESO, 2024) 44
Plate 3.7 Average price of energy MWh since January 2013 until April 2025 (Statista Research Department, 2025) 46

Figure 1 The Project's location
Figure 2 Offshore Red Line Boundary
Figure 3 Designated Sites where potential for AEoSI cannot be ruled out, or are being considered on a ‘without prejudice’ basis

Appendix A HRA Compensation Plan
Appendix B WTG Air Gap Supporting Document

Non-Technical Summary

The Derogation Case sets out MarramWind Limited's (hereafter, referred to as 'the Applicant') Derogation Case under Stage Three of the Habitat Regulations Appraisal (HRA). This is in relation to the development of the offshore aspects of MarramWind Offshore Wind Farm (hereafter, referred to as 'the Project').

The Applicant has provided a **Report to Inform Appropriate Assessment (RIAA)** which determines that the potential for an Adverse Effect on Site Integrity (AEoSI) 'alone' or 'in-combination' for any site/feature of a European site cannot be ruled out, therefore, a derogation case for the following sites/features has been provided:

- Buchan Ness to Collieston Coast SPA;
- Troup, Pennan and Lion's Head SPA; and
- Copinsay SPA.

The following additional sites have also been included on a 'without prejudice' basis:

- Fowlsheugh SPA;
- East Caithness Cliffs SPA;
- North Caithness Cliffs SPA;
- Forth Islands SPA;
- St Abb's Head to Fast Castle SPA;
- West Westray SPA.
- Fair Isle SPA; and
- Hermaness, Saxa Vord and Valla Field SPA.

The Derogation Case and associated compensation documents provides the necessary information to enable the Scottish Ministers to grant consent and demonstrates to the Scottish Ministers the importance of the Project and how the benefits outweigh the potential adverse effects that it may have.

The Applicant has established the need for the Project, demonstrating why it should proceed following any conclusions of potential for AEoSI identified by Scottish Ministers, as the Competent Authority. The Applicant identifies the urgent need for decarbonisation and for new offshore wind generated electricity as driven by policy. This includes the objectives of Scottish Government Sectoral Marine Plan for Offshore Wind Energy (SMP-OWE 2020) and Scotland's ambitious and legally binding commitments to address global climate change and achieve Net Zero by 2045 (Scottish Government, 2019).

The Applicant has considered the potential alternatives to the Project and concludes that no options provide an alternative solution with lesser effect on European sites which are technically, legally or financially feasible and which meet the Project's objectives. They therefore do not provide alternative solutions as defined by relevant legislation and guidance.

The Derogation Case demonstrates the Imperative Reasons of Overriding Public Interest (IROPI) for human health, public safety and benefits of primary importance of the environment, are all considered to outweigh the impacts identified within the RIAA based on existing Scottish policy and guidance, and on previous offshore wind farm decisions in both Scotland and the wider United Kingdom (UK).

The Applicant considers the evidence provided within the Derogation Case to conclusively demonstrate the importance of the Project and that there are IROPI for the Project to proceed.

The Applicant's compensation documentation sets out how adequate compensation measures are to be secured and implemented by the Project to secure the overall coherence of the National Site Network (NSN).

1. Introduction

1.1 Project background

1.1.1 MarramWind

1.1.1.1 MarramWind Offshore Wind Farm (hereafter referred to as 'the Project') is wholly owned by ScottishPower Renewables UK Limited (SPR).

1.1.1.2 The Project is a proposed floating wind farm located in the North Sea, with a grid connection capacity of up to 3 gigawatts (GW). The location of the Project is determined by the Option Area Agreement (OAA), which is the spatial boundary of the Northeast 7 (NE7) Plan Option within which the electricity generating infrastructure will be located. The NE7 Plan Option is located north-east of Rattray Head on the Aberdeenshire coast in north-east Scotland, approximately 75 kilometres (km) at its nearest point to shore and 110km at its furthest point. An Option to Lease Agreement for the Project within the NE7 Plan Option was signed in April 2022.

1.1.1.3 A summary of the Project is provided in **Section 1.1.3** and a comprehensive description of the Project is provided in **Volume 1, Chapter 4: Project Description** of the **Environmental Impact Assessment Report (EIA Report)**.

1.1.2 The Applicant

1.1.2.1 MarramWind Limited (hereafter referred to as ‘the Applicant’) is a company wholly owned by SPR.

1.1.2.2 SPR is part of the ScottishPower group of companies, operating in the UK under the Iberdrola Group, and is a leading UK renewables developer with over 40 operational windfarms generating 3GW of green energy. ScottishPower is the first integrated energy company to generate 100% green electricity in the UK. Focused on wind energy, smart grids and driving the change to a greener future, ScottishPower is investing £24bn to 2028 on renewable power and transmission and distribution grids.

1.1.2.3 Iberdrola Group is a world leader in the development of offshore wind energy, with five operational windfarms and four major projects under construction. With a committed investment of €8bn from 2025 to 2028, this will give 5.7 GW of installed Offshore capacity by 2028. This is part of the €58bn investment plan announced in 2025 by Iberdrola, 35% of which is being invested to grow the overall installed capacity of renewable power to 60GW by 2028.

1.1.3 Overview of the Project

1.1.3.1 The Project's generating infrastructure will be located in the North Sea, within the 'Scottish Zone' (as defined in the Scotland Act 1998) of the United Kingdom (UK) Exclusive Economic Zone (EEZ). The generating infrastructure is specifically located within the spatial extent of the NE7 Plan Option, covered by the OAA. The Project’s location is shown in **Figure 1**.

1.1.3.2 In March 2024, National Energy System Operator (NESO) published the 'Beyond 2030' report, which presented the ScotWind elements of the Holistic Network Design Follow Up Exercise. This report confirmed that the full 3GW connection for the Project will be connected to the Scottish and Southern Electricity Networks (SSEN) Netherton Hub at Longside, near Peterhead. This update informed further refinement of the Project design envelope following the EIA Scoping Stage in January 2023.

1.1.3.3 The Project's offshore infrastructure, located seaward of mean high water springs (MHWS) within the Red Line Boundary (see **Figure 2**), includes the following:

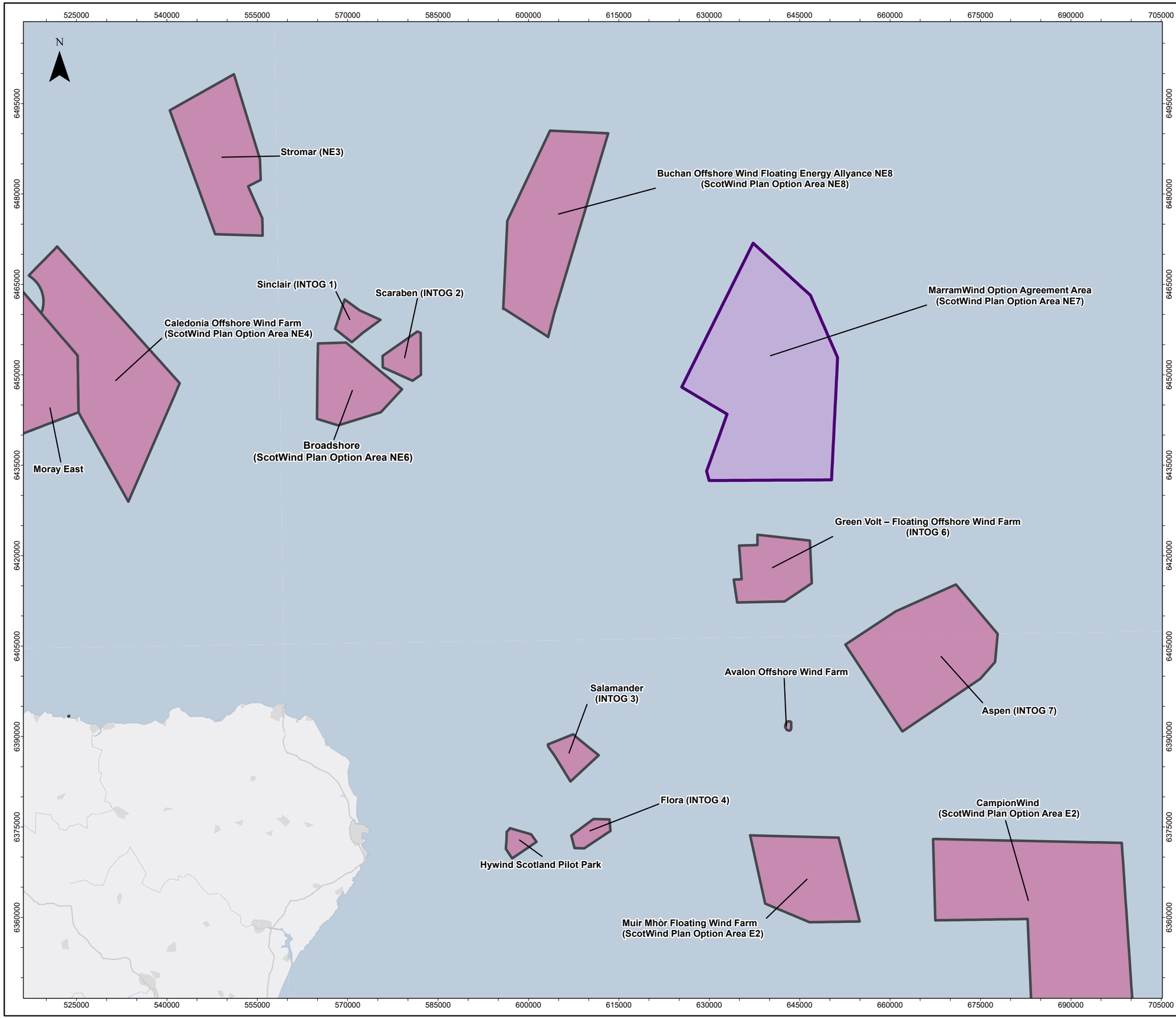
- wind turbine generators (WTGs), including floating units (platforms and station keeping system);
- array cables;
- subsea distribution centres (SDC);
- subsea substations;
- offshore substations;
- reactive compensation platform(s) (if required); and
- offshore export cables to connect the offshore infrastructure to the landfall(s).

1.1.3.4 The Project's onshore infrastructure, located landward of mean low water springs (MLWS) includes:

- landfall(s) – the infrastructure associated with landfall located above MLWS;
- underground onshore export cables running from the landfall(s) to the onshore substations;
- onshore substations;
- underground grid connection cables (connecting the onshore substations to the grid connection point at SSEN Netherton Hub); and
- tie-in to grid connection point (SSEN substation at the Netherton Hub, which is a separate project and does not form part of the consenting applications which this EIA relates to).

1.1.4 Report to Inform Appropriate Assessment conclusions

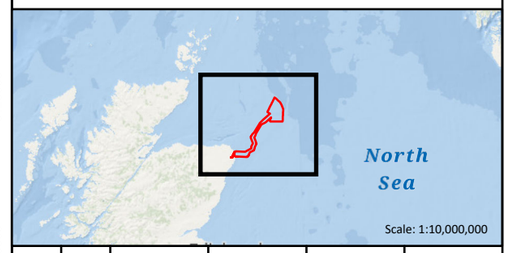
1.1.4.1 The **Report to Inform Appropriate Assessment (RIAA)** for the Project has concluded that the potential for an Adverse Effect on Site Integrity (AEoSI) on the National Site Network (NSN) cannot be ruled out (see **Section 2.2** and **Figure 3**). This Derogation Case and the associated compensation documentation demonstrate the need for the Project in the context of the identified potential for AEoSI from the Project that cannot be ruled out, presenting 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 provides the necessary information to enable the Scottish Ministers to grant consent, notwithstanding any potential AEoSI that cannot be ruled out, and demonstrates to the Scottish Ministers the importance of the Project in relation to current government policy and targets, alongside how the benefits delivered by the Project outweigh the potential adverse effects that it may have.



MarramWind Option Agreement Area

Other offshore wind farm developments

0 10 20 30 Kilometres



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WSP DRAWING NUMBER	808368-WEIS-IA-E5-FG-S5-25248
MarramWind DRAWING NUMBER	MAR-GEN-ENV-MAP-WSP-000606

DATUM	ETRS 89	PROJECTION	UTM Zone 30N
SCALE	1:600,000	PAGE SIZE	A3

PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

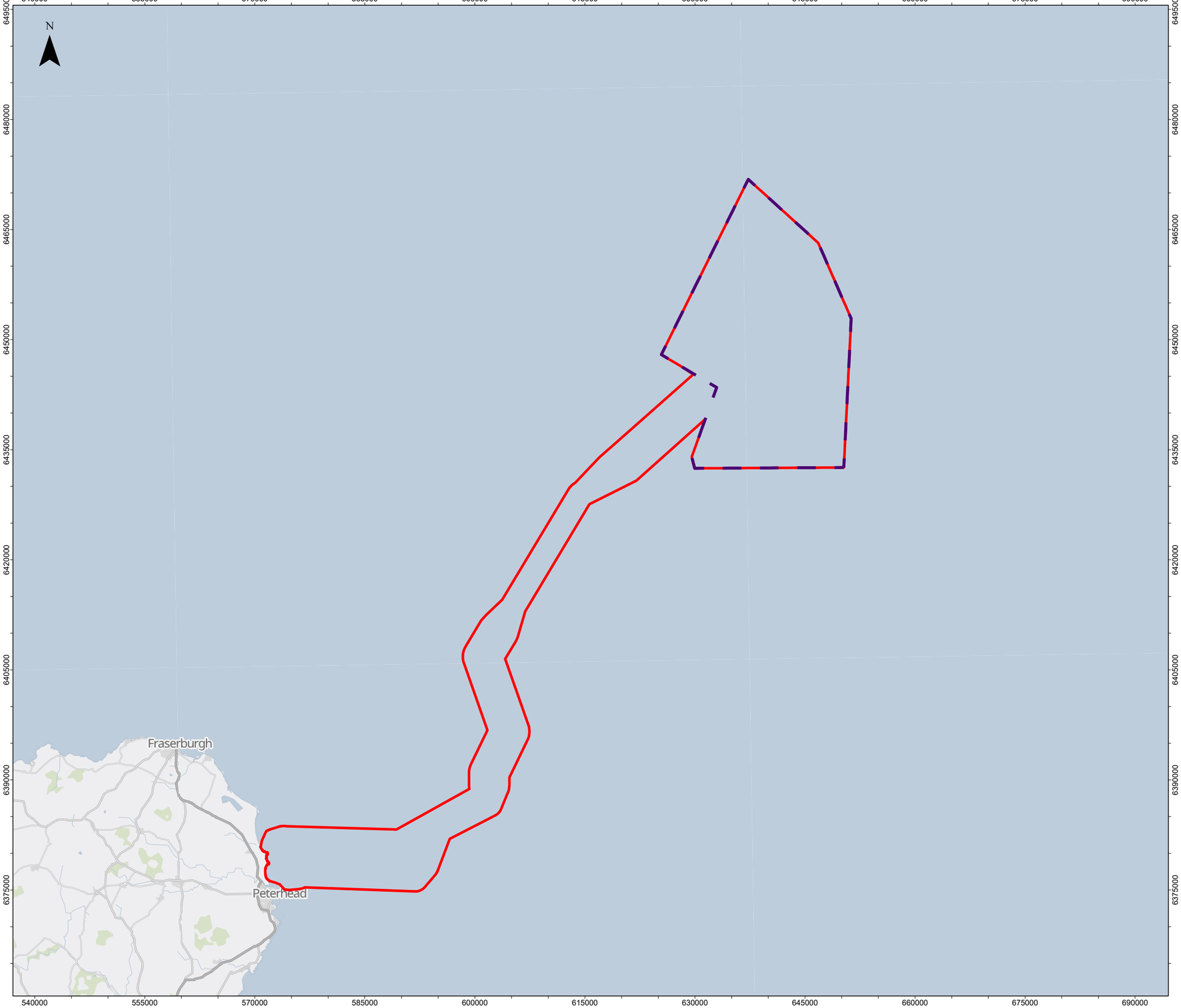
Figure 1 Project location

Derogation Case

NOT TO BE USED FOR NAVIGATION

wsp

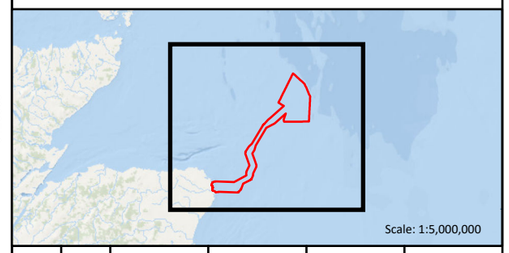
MarramWind



Offshore Red Line Boundary

Option Agreement Area

0 10 20 Kilometres



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MarramWind DRAWING NUMBER	MAR-GEN-ENV-MAP-WSP-000607

DATUM	ETRS 89	PROJECTION	UTM Zone 30N
SCALE	1:500,000	PAGE SIZE	A3

PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

Figure 2 Offshore Red Line Boundary

Derogation Case

NOT TO BE USED FOR NAVIGATION

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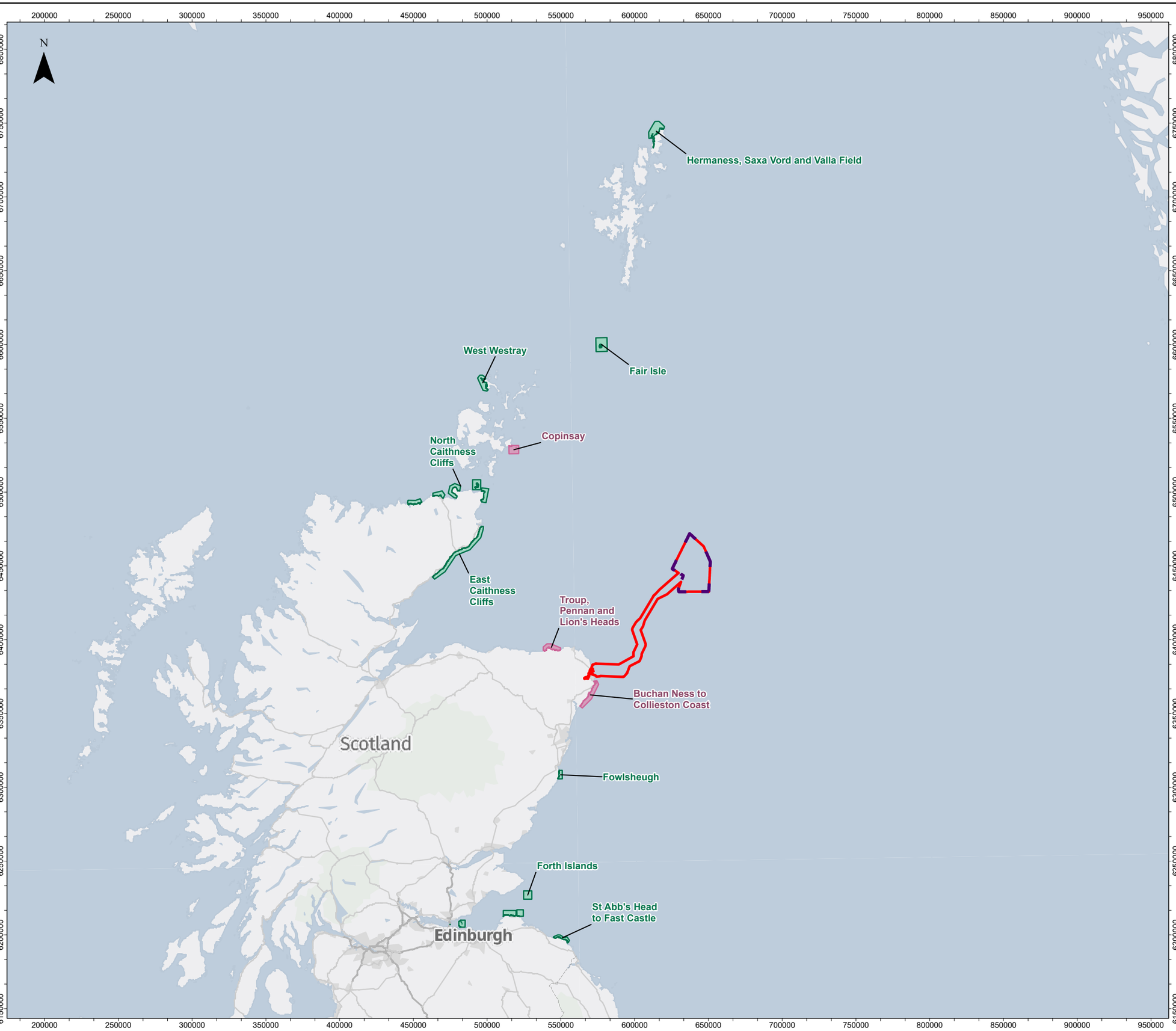
MarramWind



Red Line Boundary

Option Agreement Area

SPA - sites where potential for AEoSI alone could not be excluded

SPA - sites included on a 'without prejudice' basis

0 50 100 Kilometres

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DATUM	ETRS 89	PROJECTION	UTM Zone 30N
SCALE	1:2,500,000	PAGE SIZE	A3

PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

Figure 3 Designated Sites where potential for AEoSI cannot be ruled out, or are being considered on a 'without prejudice' basis

Derogation Case

NOT TO BE USED FOR NAVIGATION

wsp

MarramWind

1.2 The Project

1.2.1.1 The infrastructure of the Project is comprised of onshore and offshore infrastructure. The Derogation Case relate to the offshore components of the Project. Key offshore infrastructure includes the following:

- Up to 255 wind turbine generators (WTGs) each with a generating capacity of up to 25 megawatts (MW);
- the WTGs will each be mounted on a floating unit, which will consist of a floating platform that will be secured to the seabed by a dedicated 'station keeping system' involving anchors and mooring lines.
- Array cables will be used to connect the WTGs to the offshore substations. This will be via other WTGs if in a string or loop arrangement or to subsea distribution centres (SDCs) if in a star configuration. SDCs allow cables from multiple WTGs to connect, with a single array cable then going from the SDCs to the offshore substation and / or subsea substation.
- Up to four offshore substations, which will be installed to collect the energy generated by the WTGs and house transmission equipment.
- Subsea substations comprising a foundation support structure and protection structure, which is secured subsea to support associated collection and transmission equipment.
- Reactive compensation platforms (RCPs): For high voltage alternating current (HVAC) transmission, there is an upper limit of offshore export cable route length beyond which the electrical losses incurred during transmission become prohibitive. RCPs positioned along the export cable provide the solution to this, by improving power quality, voltage stability and transmission efficiency. A maximum of two RCPs (if required) will be located within the offshore export cable corridor, typically between 40–60% of the total length from an offshore substation within the OAA to the onshore substations.
- Offshore export cables to connect the offshore infrastructure to the landfall(s).

1.2.1.2 **Volume 1, Chapter 4: Project Description** of the **Environmental Impact Assessment (EIA) Report** provides a detailed description of the Project.

1.3 Structure of the Derogation Case

1.3.1.1 This document is structured 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:

- **Chapter 1**: Introduction - Providing a background to the Project including its purpose, where supporting information can be found, and an overview of consultation undertaken;
- **Chapter 2**: Methodology, 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;
- **Chapter 3**: The Need for the Project - Establishing why the Project is required in the context of environmental and socio-economic factors;
- **Chapter 4**: No Alternative Solutions - Demonstrating that there are no feasible alternative solutions to the Project;

- **Chapter 5**: 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;
- **Chapter 6**: Compensatory measures - Cross references to the Applicant's proposal for compensatory measure provision;
- **Chapter 7**: Derogation Case conclusions - Summarising 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 a conclusion of potential for AEoSI;
- **Chapter 8**: References - The full references for all literature/data used throughout the Derogation Case, and
- **Chapter 9**: Glossary of terms and abbreviations.

1.3.1.2 This Derogation Case is also supported by the following appendix:

- **Appendix A: HRA Compensation Plan**; and
- **Appendix B : WTG Air Gap Supporting Document**.

1.4 Supporting information

1.4.1.1 Given the nature of the derogation, this Derogation Case inherently is based on and is partnered with several other documents. Not all the information presented within the supporting documents is repeated here; however, references are provided where relevant. The supporting documents of relevance to this Derogation Case are as follows:

- **RIAA**;
- **Volume 1, Chapter 3: Site Selection and Alternatives** of the **EIA Report**;
- **Volume 1, Chapter 4: Project Description** of the **EIA Report**;
- **Volume 1, Chapter 5**: **Approach to the EIA** of the **EIA Report**
- **Volume 1, Chapter 29: Greenhouse Gases** of the **EIA Report;**
- **Volume 1, Chapter 30: Socio-economics** of the **EIA Report**; and
- **Offshore Planning Statement**.

1.5 Consultation

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

1.5.1.2 The Applicant has consulted and engaged with SNCBs and other stakeholders to ensure all interested parties are aware of the Project and are able to provide their advice and guidance. Consultation and stakeholder responses from the Marine Directorate – Licensing Operations Team's (MD-LOT) Scoping Opinion (MD-LOT, 2023) are presented in the **MD-LOT Gap Analysis**. A single stakeholder response directly relates to this Derogation Case, which was from within MD-LOT's Scoping Opinion (MD-LOT, 2023) where they clarified the following:

"*The Proposed Development is in a location which may require the consideration/ submission of a derogation package under the Habitat Regulations with identification of suitable compensation measures as well as evidence of meeting all the required tests. The Developer should continue to liaise with Marine Scotland on this point going forward."*

1.5.1.3 This Derogation Case fulfils the above consultation response and consultation with regards to the compensation measures is presented within the **HRA Compensation Plan**.

2. Methodology, Legal Framework and Guidance

2.1 The Habitats Regulations

2.1.1.1 A network of protected areas for specific habitats and species of importance (known as European sites) has been established by European Union (EU) member states under the Habitats and Birds Directives (Council Directive 92/43/EEC and Directive 2009/147/EC).

2.1.1.2 On 31 January 2020, the UK formally left the EU following the activation of Article 50 of the Lisbon Treaty. Subsequently, the UK Government has committed to upholding its international environmental obligations and maintaining key legislative frameworks through the European Union (Withdrawal) Act 2018. While the UK is no longer bound by future EU policy changes, many existing environmental and energy regulations have been incorporated into UK domestic legislation, and therefore remain in place. In Scotland, these are implemented through:

- The Conservation (Natural Habitats, &c,) (as amended) Regulations 1994;
- The Conservation of Habitats and Species Regulations 2017; and
- The Conservation of Offshore Marine Habitats and Species Regulations 2017.

2.1.1.3 This legislation together hereinafter is referred to as the Habitats Regulations.

2.1.1.4 The three-stage process of determining likely significant effects (LSE) and then the potential for AEoSI under the Habitats Regulations is known as HRA.

2.1.1.5 Under the Habitats Regulations, European sites (in the context of the HRA) include the following:

- Special Areas of Conservation (SACs) designated for their habitats and/or species (except birds) of European importance; and
- Special Protection Areas (SPAs) designated for rare, vulnerable, and regularly occurring bird species.

2.1.1.6 Together the Habitat Regulations protect a network of designated sites within the UK referred to as the NSN. Each of these sites is designated for specific qualifying interest features, under either Annex I or Annex II of the Habitats Directive for habitats and species respectively.

2.1.1.7 The Habitats Regulations establish the process for assessment of designated sites, which is referred to in Scotland as an HRA and is accepted to be a three-stage process as follows:

- Stage One: Screening - Determination of potential for LSE;
- Stage Two: Appropriate assessment (AA); and
- Stage Three: The derogation provisions.

2.1.1.8 It is worth noting that under the Habitats Regulations, the types of designated sites considered are SACs, candidate SACs, SPAs and proposed SPAs, Ramsar sites (as designated under the Ramsar Convention 1971) are also afforded the same protection as sites within the NSN by Scottish Government policy, under Policy 4 of the 4th National Planning Framework (NPF4) (Scottish Government, 2023a, and Scottish Government 2025f).

2.1.1.9 The Applicant is mindful of the Scottish Government and the UK Government's reforms to the Habitats Regulations. It is acknowledged that the British Energy Security Strategy (BESS) has recommended changes to the HRA process and the Planning and Infrastructure Bill is passing through Parliament to implement some of these changes. However, these have not been agreed or enacted at the time of writing the **RIAA** or this Derogation Case.

Overview of HRA Stages One to Two: Screening and Appropriate Assessment

2.1.1.10 The provisions of the Habitat Regulations as shown in **Table 2.1** require that a project not directly connected with or necessary to the management of a European site, and 'likely to have a significant effect' (LSE) on a European site (whether alone or in-combination with another plan or project) must be subject to an AA of the implications for that site in view of the site's conservation objectives. The legal obligations to undertake an AA rest with the relevant Competent Authority, which for Section 36 (s.36) consent and marine licence applications, is the Scottish Ministers. However, the Applicant has an obligation to provide information to the Scottish Ministers so that they are able to effectively carry out the AA.

Table 2.1 The Habitat Regulations provisions[12]

Regulation (from Conservation of Offshore Marine Habitat and Species Regulations 2017)	Provision
28 (1)	*"Before deciding to undertake, or give any consent, permission or other authorisation for a relevant plan or project, a Competent Authority must make an appropriate assessment of the implications of the plan or project for the site in view of that site's conservation objectives."*
28 (2)	*"In paragraph (1), a "relevant plan or project" is a plan or project which –* *a) Is to be carried out on or in any part of the waters or on or in any part of the seabed or subsoil comprising the offshore marine area, or on or in relation to an offshore marine installation;* *b) Is likely to have a significant effect on a European offshore marine site or a European site (either alone or in combination with other plans or projects); and* *c) Is not directly connected with or necessary to the management of the site."*
28 (3)	*"A person applying to a Competent Authority for any consent, permission or other authorisation for a plan or project in the offshore marine area must provide such information as the Competent Authority may reasonably require."*

[1] Only the Conservation of Offshore Marine Habitat and Species Regulations 2017 apply to this Derogation Case due to where the impacts under consideration arise from.

[2] As per the Conservation of Offshore Marine Habitats and Species Regulations 2017 applicable for UK waters (including Scottish Waters) beyond 12nm. There are equivalent provisions applicable in Scotland and its territorial waters within 12nm under the Conservation (Natural Habitats, &c) Regulations 1994.

2.1.1.11 Screening for LSE is commonly referred to as Stage One of the HRA process, where a screening exercise is undertaken by the developer and an HRA Screening Report is produced to inform the Competent Authority of identified potential effects. The HRA Screening Report identified where there is potential for LSE on designated sites and features, and states where a potential for LSE from the Project can be excluded. This screening exercise in turn informed the assessment within Stage Two as undertaken by both the Applicant and the Competent Authority.

2.1.1.12 Stage Two of the process involves an assessment of the identified LSEs, to determine if there is the potential for an AEoSI at a designated site as a result of the Project. This assessment is presented within an RIAA and provided to the Competent Authority to inform their own AA.

2.1.1.13 If the assessment in Stage Two enables the Competent Authority to conclude beyond reasonable scientific doubt that there is no AEoSI on any designated European site within the NSN), consent can be awarded. However, if an AEoSI cannot be ruled out, then Stage Three (the derogation process) must be undertaken to a satisfactory level in order for consent to be awarded.

Overview of HRA Stage Three: The Derogation provisions

2.1.1.14 As described above, where Stage Two concludes the potential for AEoSI cannot be ruled out, the derogation process must be undertaken as Stage Three of the HRA process. A project can be allowed to proceed following a conclusion that where AEoSI cannot be ruled out in respect of any European site(s) if the Competent Authority is satisfied that the following tests are met:

- there are no feasible ‘alternative solutions’ to the project; and
- the project must proceed for IROPI.

2.1.1.15 If both these tests are met and compensatory measures can be secured that will ensure the overall coherence of the NSN is maintained to the satisfaction of the Competent Authority, then the project may proceed.

2.1.1.16 The applicable legal text (Derogation provisions), which provide the framework for HRA Stage Three for Scotland is shown in **Table 2.2**.

Table 2.2 Relevant Scottish Derogation provisions[3]

Regulation (from Conservation of Offshore Marine Habitat and Species Regulations 2017)	Provision
29 (1)	*"If it is satisfied that, there being no alternative solutions, the plan or project referred to in regulation 28(1) must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), the Competent Authority may agree to the plan or project notwithstanding a negative assessment of the implications for the site."*
29 (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 imperative reasons of overriding public interest."*
36 (1)	*"This regulation applies where, notwithstanding a negative assessment of the implications for a European offshore marine site or European site - (a) a plan or project is agreed to in accordance with regulation 29; or (b) a decision, or consent, permission or other authorization, is affirmed in accordance with regulations 29 and 34 (3)."*
36 (2)	*"The appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of [the national site network] is protected."*

2.2 HRA Process to date and the Applicant's position on AEoSI

2.2.1.1 Stage One and Two of the HRA for the Project are presented within the HRA Screening Report (MarramWind Ltd., 2024) and the **RIAA,** respectively.

2.2.1.2 Pending the Scottish Minister's AA conclusions, this Derogation Case is presented for the European sites and species where the Applicant's RIAA concludes that an AEoSI cannot be ruled out.

2.2.1.3 The RIAA has concluded that AEoSI cannot be ruled out on a number of designated sites and features as listed below. In addition, a number of further sites and features have been included on a 'without prejudice' basis. This means that the Applicant has concluded that AEoSI can be excluded for the sites and species. However, it recognised that there is a risk based on the historic conclusions of NatureScot and MD-LOT, that the Scottish Ministers may be unable to rule-out an AEoSI arising from the in-combination impacts of all planned projects to these SPAs. The RIAA concluded AEoSI cannot be ruled out for the following sites and species:

- Guillemot:

[3] As per the Conservation of Offshore Marine Habitats and Species Regulations 2017 applicable for UK waters (including Scottish waters) beyond 12 nm. There are equivalent provisions applicable in Scotland and in its territorial waters within 12 nm under the Conservation (Natural Habitats, &c) Regulations 1994.

- Buchan Ness to Collieston Coast SPA;
- Troup, Pennan and Lion's Head SPA; and
- Copinsay SPA.

2.2.1.4 The following sites and species are included on a 'without prejudice' basis:

- Kittiwake:
  - Buchan Ness to Collieston Coast SPA;
  - Troup, Pennan and Lion's Head SPA;
  - Fowlsheugh SPA;
  - East Caithness Cliffs SPA;
  - North Caithness Cliffs SPA;
  - Forth Islands SPA;
  - St Abb's Head to Fast Castle SPA; and
  - West Westray SPA.
- Razorbill:
  - Troup, Pennan and Lion's Head SPA; and
  - East Caithness Cliffs SPA.
- Puffin:
  - Forth Islands SPA.
- Gannet:
  - Forth Islands SPA;
  - Fair Isle SPA; and
  - Hermaness, Saxa Vord and Valla Field SPA.

2.3 HRA Derogations guidance and precedent

2.3.1 Guidance

2.3.1.1 Various guidance notes have been considered in drafting this Derogation Case, including Scottish, UK and EU guidance. While Scottish and UK guidance are likely the most appropriate due to the implementation of the Habitats Regulations, given the Habitats Directives underpinned the core principles of the HRA process, EU guidance is still of relevance.

2.3.1.2 Key Scottish guidance includes the following:

- Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025a).
- Marine Licensing and consenting: Habitats Regulations Appraisal (Scottish Government, 2024a).

- Seabirds: strategic ornithological compensatory measures: review (Scottish Government, 2024g)
- Habitat Regulations Appraisal (NatureScot, 2024).
- Scotland's Energy Strategy and Just Transition Plan: Ministerial statement (Scottish Government, 2023b).
- NatureScot (2022) – European Site Casework Guidance: How to consider plans and projects affecting SACs and SPAs in Scotland. The essential quick guide (NatureScot, 2022).
- Habitat Regulations Appraisal Derogations for Offshore Wind Projects in Scotland – Legal Framework for Decisions (CMS, 2021).
- Policy guidance document on demonstrating the absence of Alternative Solutions and imperative reasons for overriding public interest under the Habitats Regulations for Marine Scotland (David Tyldesley Associates (DTA), 2021a; in draft).
- Framework to Evaluate Ornithological Compensatory Measures for Offshore Wind. Process Guidance Note for Developers. Advice to Marine Scotland (DTA, 2021b; in draft).
- Policy paper 'EU Exit: The Habitats Regulations in Scotland (Scottish Government, 2020a).
- Habitats regulations appraisal of plans: Guidance for plan-making bodies in Scotland (DTA, 2015);
- Scotland's National Marine Plan: A Single Framework for Managing Our Seas (Scottish Government, 2015).

2.3.1.3 Key UK guidance includes:

- Consultation on policies to inform updated guidance for Marine Protected Area (MPA) assessments (Department for Environment, Food and Rural Affairs (Defra), 2024).
- Habitats regulations assessments, protecting a European site (Defra, 2021a).
- Draft best practice guidance for developing compensatory measures in relation to Marine Protected Areas (Defra, 2021b).
- The Habitats Regulations Assessment Handbook (DTA, 2021c).
- Habitats Directive: guidance on the application of article 6(4) (Defra, 2012).
- Overarching National Policy Statement for Energy (EN-1), draft (DESNZ, 2025a).
- National Policy Statement for Renewable Energy Infrastructure (EN-3), draft (DESNZ, 2025b).
- National Policy Statements for Energy, Habitat Regulations Assessment, draft (DESNZ, 2025c).

2.3.1.4 Key EU guidance includes the following:

- Guidance document on wind energy developments and EU nature legislation (The European Commission, 2021a).
- Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC and Annex (the EC Methodological Guidance) (The European Guidance, 2021b).

- Managing Natura 2000 Sites (MN2000): The provisions of Article 6 of the Habitats Directive 92/43/EEC (The European Commission, 2019).

2.3.2 Planning precedent

2.3.2.1 To date, nine offshore wind farms derogation cases have been submitted to the Scottish Ministers for the following projects:

- West of Orkney Offshore Wind Farm;
- Berwick Bank Offshore Wind Farm;
- Green Volt Offshore Wind Farm;
- Salamander Offshore Wind Farm;
- Ossian Offshore Wind Farm;
- Caledonia Offshore Wind Farm;
- Muir Mhòr Offshore Wind Farm;
- Cenos Offshore Wind Farm; and
- Aspen Offshore Wind Farm.

2.3.2.2 At the time of writing, Berwick Bank, Green Volt, West of Orkney and Salamander have achieved consent.

2.3.2.3 Green Volt Offshore Wind Farm was granted consent in April 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.

2.3.2.4 West of Orkney Offshore Wind Farm was granted consent on 19th June 2025, again the Scottish Ministers disagreed with the Applicant on the ‘without prejudice’ nature of the derogation case. The Scottish Ministers found that there is an imperative reason that justifies the need for the project and as such overrides the AEoSI on the designated sites and the conservation objectives at risk (Scottish Government 2025c).

2.3.2.5 Berwick Bank Offshore Wind Farm was granted consent on 31st July 2025, with Scottish Ministers concluding that the project would result in an AEoSI as well as establishing that there is an imperative reason which justifies the need for the project overriding the AEoSI on the designated sites at risk (Scottish Government 2025e).

2.3.2.6 Salamander Offshore Wind Farm was granted consent on 04 July 2025 and the Scottish Ministers stated in their decision that they had *“considered the likely magnitude and population implications of the adverse effects arising from the Project on the designated sites, however, the Scottish Ministers are satisfied that there are IROPI for the Project to proceed subject to adequate compensatory measures being implemented. In arriving at their decision, the Scottish Ministers have considered how the Project provides a public benefit which is essential and urgent and has been assessed as outweighing the harm to the integrity of the designated sites.”*

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

- Hornsea Three Offshore Wind Farm (consented 2020; Department for Business, Energy & Industrial Strategy (BEIS), 2020a);
- Norfolk Boreas Offshore Wind Farm (consented 2021; BEIS, 2021);
- Norfolk Vanguard Offshore Wind Farm (consented 2022; BEIS, 2022a);
- East Anglia ONE North Offshore Wind Farm (consented 2022; BEIS, 2022b);
- East Anglia TWO Offshore Wind Farm (consented 2022; BEIS, 2022c);
- Hornsea Four Offshore Wind Farm (consented 2023; (Department for Energy Security and Net Zero (DESNZ), 2023a);
- Sheringham Shoal and Dudgeon Offshore Wind Farm Extension projects (consented 2024; DESNZ, 2024a); and
- Rampion 2 Offshore Wind Farm (consented 2025, DESNZ 2025d).

3. The Need for the Project

3.1 Overview

3.1.1.1 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 if a potential AEoSI is identified by the Scottish Ministers. This Section identifies the urgent need to tackle climate change and support renewable energy generation through the development of offshore wind farms. This includes the decarbonisation objectives of the Scottish Government, ScotWind SMP and Scotland's ambitious commitments to address global climate change and achieve Net Zero by 2045, whilst also aligning with UK policy of Net Zero by 2050.

3.1.1.2 The need can be broken down into key areas informed by Scottish policy and guidance:

- climate change, Net Zero and decarbonisation: demonstrating the importance of legally binding climate change and Net Zero targets;
- security of supply: assessing the importance of reducing our dependency on imported energy;
- affordability of supply and economic benefit: ensuring that consumers can receive energy at lower costs where possible; and
- supply chain development for large scale floating offshore wind.

3.1.1.3 This need is reflected in the Project objectives, which are set out in **Table 3.1**.

Table 3.1 Project objectives

ID	Objective
1	**Contribution to Net Zero and Offshore Wind Targets.** To export a significant volume of renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation. This includes making an important contribution to the achievement of the Scottish Government's updated offshore wind ambition of 40GW of new deployment by 2035-2040.
2	**Enhancing Energy Security.** To increase security of supply for Scottish and UK consumers by being one of the largest floating offshore wind (FLOW) projects in Scottish waters.
3	**Unlocking Deep-Water Potential.** To support the realisation of Scotland's deep-water potential and maximise use of the available seabed in synergy with other users.
4	**Strengthening the Scottish Supply Chain.** To support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters, providing continuity and security for supply chain development.
5	**Driving Technological Innovation.** To drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.
6	**Supporting Socio-economic Growth.** To support socio-economic growth in Scotland and contribute to achieving a Just Transition.

3.2 Legislation and policy landscape

3.2.1 Overview

3.2.1.1 **Table 3.2** presents the relevant legislative and policy landscape in regional and chronological order for low carbon electricity generation. It outlines the legal commitments made by the UK and Scotland to deliver Net Zero, and deliver against climate change targets, which underpins the need for offshore wind development.

Table 3.2 Legislative and policy context

Policy / legislation	Year	Context
International		
United Nations Framework Convention on Climate Change (UNFCC)	1994	The UNFCCC is an international environmental treaty for addressing climate change. Signed in 1992. Ratified by 198 countries, it was established to combat 'dangerous human interference with the climate system' by stabilising greenhouse gas (GHG) concentrations in the atmosphere. The Convention is operationalised by the Kyoto Protocol by committing industrialised countries and economies in transition to limit and reduce GHG emissions in accordance with agreed individual targets. The Convention itself only asks those countries to adopt policies and measures on mitigation and to report periodically.
The Paris Agreement	2016	The Paris Agreement was adopted in 2015 by 196 UN member states (including the UK) (United Nations Framework Convention on Climate Change, 2015). The Paris Agreement was the first international legally binding treaty on climate change. The Paris Agreement supersedes the Kyoto Protocol. It entered into force on 4th November 2016. It aims to reduce the emission of gases that contribute to global warming by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C. In order to contribute towards delivering the targets under the Paris Agreement, the Climate Change Act (Emissions Reductions Targets) (Scotland) Act 2019 introduced binding targets for the reduction in emissions by 100% below 1990 levels by 2045 in Scotland and the Climate Change Act 2008 (2050 Target Amendment) Order 2019 set a similar reduction target for the rest of the UK by 2050.
UK		
Climate Change Act (2008)	2008	The Climate Change Act 2008 (CCA) defined legally binding targets for reducing GHG emissions and underpins all subsequent climate change legislation, including that introduced by the Scottish Government. It 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 primary targets of reducing GHG (UK and Scotland) by 34% by 2020 and 80% by 2050, compared to the baseline level as set in 1990. This has now been superseded by the 2050 Target Amendment Order. 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.

Policy / legislation	Year	Context
		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. Amended in 2019 in Climate Change Act 2008 (2050 Target Amendment) Order 2019 In order to contribute towards delivering the targets under the Paris Agreement, the Climate Change Act 2008 (2050 Target Amendment) introduced binding targets for the reduction in emissions by 100% below 1990 levels by 2050 in the UK. This target has become known as “Net Zero” for the UK.
Marine Policy Statement (MPS)	2011	The UK MPS (HM Government, 2011) “*is the framework for preparing marine plans and taking decisions affecting the marine environment”*. Joint adoption of a UK-wide MPS provides a consistent high-level policy context for the development of marine plans, ensuring that marine resources are used sustainably.
Ten Point Plan for a Green Industrial Revolution	2020	In 2020 the UK Government published the Ten Point Plan for a Green Industrial Revolution (HM Government, 2020), a plan to shift the UK economy toward tackling climate change and delivering new policies and investment to support this transition. The plan sets out the ambition for the UK to be a global leader in low-carbon and zero-carbon industries and technologies, with the aim of creating hundreds of thousands of new jobs and opening up new markets for export. Point 1 of the plan (Advancing Offshore Wind) sets out the ambition to ”*quadruple offshore wind capacity by 2030 to 40* Gigawatt (GW), including support for innovative floating offshore wind technologies.
British Energy Security Strategy	2022	The primary policy responsible for ensuring the security of supply throughout the UK is the 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 50GW of offshore wind power by 2030 building on the initial 40GW target established within the 2020 UK Energy White Paper Powering our Net Zero Future (BEIS, 2020), which also established that offshore wind is the most critical technology required to deliver the required electrification for mitigating climate change (see **Section 3.3**). The BESS also includes ambitions to deliver 5GW of floating offshore wind projects by 2030. The target has now been revised to 43-50GW of offshore wind under the Clean Power 2030 Action Plan (DESNZ, 2024).

Policy / legislation	Year	Context
Overarching National Policy Statements (NPS) for Energy (EN-1)	2023	EN-1 (HM Government, 2023a) sets out the UK Government's policy for the delivery of major energy infrastructure in the UK over the next 40 years. EN-1 concluded that "*there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure,"* this includes offshore renewable generation such as offshore wind to meet Net Zero commitments and sets out assessment principles for applications relating to energy infrastructure. 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, and it is an important aspect of the planning balance to be considered by the Scottish Ministers. A draft updated version of this policy was consulted on by the government in May 2025.
National Policy Statement for Renewable Energy Infrastructure (EN-3)	2023	EN-3 (HM Government, 2023b), taken together with EN-1, provides the primary policy for decisions on nationally significant renewable energy electricity generating stations. 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 and it is an important aspect of the planning balance to be considered by the Scottish Ministers. EN-3 provides a mechanism for delivery of the BESS (HM Government, 2022) in paragraph 1.1.4, which "*sets out a series of bold commitments to deliver a more independent, more secure energy system, and support consumers to manage their energy bills."* Paragraph 2.8.1 of NPS EN-3 reiterates the UK Government's 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. The ambition is to deploy up to 50GW of offshore wind capacity (including up to 5GW 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 in paragraph 2.8.2 "*considers that all offshore wind developments are likely to need to maximise their capacity within the technological, environmental, and other constraints of the development."* A draft updated version of this policy was consulted on by the government in May 2025.
Energy Act (2023)	2023	The Energy Act 2023 aims to strengthen energy security, support the delivery of Net Zero and ensure affordability of household bills in the long term. It creates a new regime for energy production and security and the regulation of the UK's energy sector and is intended to deliver on key longstanding government commitments to clean energy, climate change, energy security and resilience. An objective of the Act for

Policy / legislation	Year	Context
		the offshore wind sector is to make changes to the legal processes which govern the development of offshore wind projects with the intention of speeding up the consenting process. Part 13 Chapter 1 (Sections 290 to 295) of the Act provides legislation to enable the implementation of strategic compensation to be delivered by public authorities, and marine recovery funds which may fund this strategic compensation. The Energy Act 2023 builds on the commitments in the BESS to invest in homegrown energy and maintain the diversity and resilience of the United Kingdom's energy supply while working towards Net Zero by 2050. The statutory provisions enable the potential for altering the requirements of assessment and how compensation is approached and/ or funded, with consideration of both European sites and protected marine areas. In the UK the Statutory Instrument (SI) has been laid before parliament for The Marine Recovery Fund Regulations (2025) and is due to come into force on 17 December 2025. The Regulations establish the legal framework for the establishment of one or more Marine Recovery Funds (MRFs), which are voluntary arrangements that offshore wind organisations can pay into, to secure appropriate and strategic compensation measures to compensate for the adverse environmental effects of their projects on protected sites. The Regulations extend to England, Wales, Scotland and Northern Ireland. Under Part 3 (3) of the Regulations, where the Secretary of State establishes an MRF the Secretary of State may decide that the fund is established for the above territories or any combination of those territories. In Scotland, the Scottish Government consulted on a strategic compensation policy for offshore wind in July 2025 through the Environmental Assessment Scottish Statutory Reform Scottish Statutory Instrument (SSI), applicable to the Scottish inshore region (0-12nm). The purpose of the policy is to enable the delivery of strategic compensation and a wider range of compensatory measures. The SSI is not yet in force.
Clean Power 2030 Action Plan	2024	Clean Power 2030 Action Plan (DESNZ 2024a) recognises "*the need for secure and affordable energy supply, the creation of essential new energy industries, supported by skilled workers, the need to reduce greenhouse gas emissions and limit the UKs contribution to the damaging effects of climate change."* To help achieve the UK Net Zero target by 2050, the UK Government's Clean Power 2030 Action Plan has set an ambition to transition to a 95% clean energy system across the UK by 2030. The Clean Power 2030 Plan has changed the targets for offshore wind by 2030 from 50GW (as specified in the BESS) to 43-50GW including 5GW from floating offshore wind, stating "*Successful delivery will require rapid deployment of new clean energy capacity across the whole of the UK, reflecting the shared renewable ambitions of the UK, Scottish and Welsh Governments."* This document sets out the steps the government in partnership with Scottish and Welsh Governments, industry and the public must take. Measures include

Policy / legislation	Year	Context
		"*reforming the electricity networks and connections process' , 'supply chain and workforce support' and 'reduce the queue to connect', 'ensure the system can prioritise 2030 critical projects"* through the Planning and Infrastructure Bill "*with measures to streamline the delivery of critical infrastructure in the planning process'* and *'delivering the Marine Recovery Fund for offshore wind"* (the Scottish Government is also working to establish a similar Marine Recovery Fund for Scotland).
Great British Energy Act (2025)	2025	On 15 May 2025, the UK Government passed the Great British Energy Act (HM Government, 2025a). The Act 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, 2024b). 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. In the Founding Statement, the UK Government confirmed it aims to make the UK a global leader in clean energy, delivering clean power by 2030 and accelerating progress towards to Net Zero. Achieving this vision requires a transformation of sufficient scale to achieve an affordable, secure and decarbonised power system by 2030, and to maintain this as demand grows through to 2050. This requires "*significant investment in our generation capacity'* and '*close collaboration between the private sector and government."* Great British Energy's mission is to "*drive clean energy deployment to create jobs, boost energy independence, and ensure UK taxpayers, billpayers, communities benefit."*

Policy / legislation	Year	Context
The Seventh Carbon Budget	2025	*"The UK's Climate Change Act (2008) sets the framework for domestic action to address climate change mitigation and adaptation. The Act requires the government to propose regular, legally binding milestones on the way to achieving Net Zero greenhouse gas emissions, known as carbon budgets. The Committee is required to advise the government on the level of these. Parliament must then agree each carbon budget for it to be set into law. Investors, businesses, households, and government can then act with a shared understanding of the path as well as the end goal."* The Seventh Carbon Budget provides a stock-take of UK emissions (current and future) and advice to the government on how and where these emissions will need to be reduced ('the pathway') if the UK is to meet its legal obligations to reduce emissions to Net Zero by 2050. *"The recommended level for the Seventh Carbon Budget (CCC, 2024), which sets a limit on the UK's greenhouse gas emissions over the five-year period 2038 to 2042, is 535 MtCO2e, including emissions from international aviation and shipping."* This is an 87% reduction in the UKs emissions compared to 1990 levels. The report highlighted that UK emissions in 2023 were about half of 1990 levels, due to reductions in energy mainly and 60% of emissions reductions by 2040 will come from electrification and low carbon electricity supply.
The UK's Modern Industrial Strategy 2025	2025	This is a ten-year plan to increase business investment and grow industries in the UK. A Clean Energy Industries Sector Plan was published as part of this strategy targets a doubling of current levels of investment across clean energy industries for job creation and to make the UK a world leading exporter of low carbon products.
Planning and Infrastructure Bill	Emerging	In its guide to the Planning and Infrastructure Bill the Government provides a summary of the key aims of the Bill (HM Government, 2025b). "*The Planning and Infrastructure Bill is central to the government's plan to get Britain building again and deliver economic growth". "It will also support delivery of the government's Clean Power 2030 target by ensuring that key clean energy projects are built as quickly as possible."* This is not active legislation, and the bill is currently progressing through Parliament, and therefore may have the potential to change. This Bill published in March 2025 aims to simplify the consenting process for critical infrastructure projects such as renewable energy projects.

Policy / legislation	Year	Context
		For Scotland, the Bill will introduce changes to planning rules for electricity infrastructure, streamlining the consent process to enable decisions to be made faster. This is key to achieving the Scottish Government's Net Zero targets. Mandatory pre-application requirements will be introduced to ensure there is engagement with communities and statutory consultees occurring early in the development process.
Scotland		
Climate Change (Scotland) Act 2009	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 originally setting a legally binding target for reducing GHG emissions by 80% below 1990 levels by 2050. 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. 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. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amends the Climate Change (Scotland) Act 2009 and 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. The Act includes a net zero emissions target whereby GHG emissions must be 100% lower than 1990 levels by 2045 in Scotland, five years earlier than the rest of the UK. The Climate Change (Scotland) Act 2009 was further amended in 2024 by The Climate Change (Emissions Reductions Targets (Scotland) Act 2024. As a result, the Net Zero target by 2045 remains the same but the interim targets and annual target have been replaced with a Scottish carbon budget target, whereas interim and annual targets were concerned with emission levels for a particular year, the Scottish carbon budget is concerned with emissions levels over the period for which the budget is set (five years).
Scotland's National Marine Plan (NMP)	2015	The NMP is a statutory plan under Section 5 of the Marine (Scotland) Act 2010 that establishes the overarching planning framework for all decisions governing marine activity in Scottish waters. The NMP (Scottish Government, 2015) outlines "*strategic policies for the sustainable development of marine resources in Scotland out to 200 nm (nautical miles).*" The NMP set "*ambitious targets for renewable energy by aiming to generate the equivalent of 100% of Scotland's own electricity demand from*

Policy / legislation	Year	Context
		renewable resources by 2020 and to deliver an 80% reduction in GHG emissions by 2050." The NMP is required to be compatible with the UK Marine Policy Statement (MPS) and existing marine plans or development plans for areas related to the marine plan area, including English plans. The NMP is created under the Marine (Scotland) Act and sets out that, *"a public authority must take any authorisation or enforcement decision in accordance with the appropriate marine plan (unless relevant considerations indicate otherwise)."* A new National Marine Plan (NMP2) is being developed and is discussed below.
Scottish Energy Strategy	2017	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 to 2050. 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'. It identified Scotland's waters as offering tremendous potential for future development, referencing the National Marine Plan that 'sets out the framework for the management of Scotland's seas' and the Sectoral Marine Plans to support the development of offshore renewable energy. In the renewable and low carbon electricity section of the strategy it states: *"There is huge industrial and economic potential attached to offshore wind development. Our offshore wind supply chain is strengthening and expanding – building on Scotland's established O&G 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".*
Climate Change Plan	2018	In 2009, the Climate Change (Scotland) Act set the target of a 42% reduction in emissions by 2020 and an 80% reduction in emissions by 2050. The Climate Change Plan (Scottish Government, 2018) is a statutory document, that sets out how they will meet the emissions reduction targets under the current legislation. The Plan outlines the strategies and approach of the Scottish Government to deliver on the GHG emissions reductions targets between 2018 and 2032. The plan was updated in 2020 to align with the updated GHG emissions reductions targets under the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.
Scottish Government Offshore Wind Policy Statement	2020	The Offshore Wind Policy Statement (Scottish Government, 2020b) sets out ambitions to capitalise on offshore wind development and discusses the role this technology could play in meeting the Net Zero by 2045 target and sets the context for the Sectoral Marine Plan for Offshore Wind. It identifies barriers and opportunities for deployment including supply chain, skills and innovation and cost reduction and

Policy / legislation	Year	Context
		established that as much as 11GW of offshore wind capacity is possible through Scottish waters by 2030. This is in the process of being updated (see below).
Scottish Government Sectoral Marine Plan for Offshore Wind Energy	2020	Scotland's Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020c), which builds on Section 11 of the 2015 National Marine Plan, provided a spatial strategy to inform the seabed leasing process and 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 12nm from shore) and offshore waters (extending out to the Exclusive Economic Zone limit). The SMP was developed to ensure consistency with the objectives and principles set out within Scotland's National Marine Plan. 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.
National Planning Framework 4 (NPF4)	2023	NPF4 (Scottish Government, 2023a) sets out a spatial strategy until 2045 to coincide with the GHG net zero emissions and sustainability targets. It sets out the Scottish Governments approach to how planning and development will help to achieve net zero targets. The global climate emergency and the nature crisis have formed the foundations for the spatial strategy as a whole. The strategy focuses on six overarching spatial principles including a Just Transition to Net Zero and applying principles the strategy will support the delivery of 'sustainable places', 'liveable places' and 'productive places'. Of these three key aims, 'Sustainable Places' is of most relevance to the Project. The Energy policy in NPF4 aims to encourage, promote and facilitate all forms of renewable energy development onshore and offshore and in considering impacts significant weight will be placed on the contribution of the proposal to renewable energy generation targets and on greenhouse gas emissions reduction targets. NPF4 designated a range

Policy / legislation	Year	Context
		of 'National Developments', one of which is Strategic Scale Renewable Electricity Generation Projects, to support its aims, and highlights the need for such projects.
Green Industrial Strategy	2024	The Green Industrial Strategy (Scottish Government, 2024c) has 'a single aim: to help Scotland realise the economic benefits of the global transition to Net Zero'. "*To ensure that the growth of the world's Net Zero economy translates into good, well-paid jobs across Scotland today and for future generations, and stimulate exports of Scottish energy, goods and services."*
Scotland's National Marine Plan 2	Emerging	The National Marine Plan 2 (NMP2) will update the NMP's current planning framework and is currently under development. It is expected to be adopted in 2027. The National Marine Plan 2 (NMP2) aims to support sustainable development of its seas, protect the marine environment, and deliver for Scotland's communities, in particular those living by, relying on, and visiting Scotland's seas. The NMP2 aims to support Scotland's blue economy vision, helping to tackle the 'twin crises of biodiversity loss and climate change' and realising the opportunities from the transition to Net Zero. The draft NMP2 Planning Position Statement (Scottish Government, 2024c) was subject to public consultation that closed in February 2025. Once finalised, NMP2 will provide clear direction for sustainable marine development and use to benefit Scotland's economy, society and marine environment. It will set out an updated planning framework that: • supports future licensing and consenting decisions; • sets the context for regional and sectoral planning; and • aligns with terrestrial planning.
Draft Scottish Energy Security and Just Transition Plan	Emerging	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 to 2030."* The Energy Strategy and Just Transition Plan is expected to be adopted by Scottish Government in 2025. The draft Energy Strategy has been considered where appropriate in this derogation case to ensure the Project remains compliant when adopted.

Policy / legislation	Year	Context
Updated Sectoral Marine Plan – Offshore Wind (draft)	Emerging	The draft updated Sectoral Marine Plan for Offshore Wind Energy (SMP-OWE) (Scottish Government, 2025a) 'sets out an integrated planning framework for both the ScotWind and Innovation and Targeted Oil and Gas (INTOG) leasing rounds alongside consideration of additional capacity for test and demonstration projects. It brings these elements into one planning document that: • updates the planning baseline from the 2020 SMP-OWE to take account of the level of ambition for offshore wind development in Scottish waters arising from the ScotWind leasing round; • Continues the planning process for INTOG, building on the INTOG Initial Planning Framework (IPF) (2022); and • Considers additional capacity for the development of Test & Demonstration offshore wind projects, in recognition of potential future need for further testing of technology'. The draft updated Plan defines refined Option Areas (OAs) within the spatial constraints of the Plan Options (POs) identified in the SMP-OWE 2020 and the Areas of Search (AoS) identified in the INTOG IPF, in order to reflect the outcome of the ScotWind and INTOG leasing rounds. It sets out key parameters for development which, alongside the Oas spatially defined in this draft updated SMP-OWE, should guide licensing and consenting decision-making and support projects to further progress through the leasing process, in accordance with the objectives and marine planning policies set out in the National Marine Plan (NMP). Therefore, for ScotWind sites, they represent the specific locations that have been granted Crown Estate Scotland (CES) Exclusivity Agreements, all of which sit within the AoS set out in the INTOG IPF. It sets out key parameters for development which, alongside the OAs spatially defined in this draft updated SMP-OWE, should guide licensing and consenting decision-making and support projects to further progress through the leasing process, in accordance with the objectives and marine planning polices set out in the adopted NMP. A plan-level monitoring programme is proposed for the updated SMP-OWE in line with recommendations set out in the Strategic Environmental Assessment Environmental Report to monitor the environmental effects of the implementation of the updated SMP-OWE and its proposed mitigation measures. The Scottish Government recently consulted on the updated SMP-OWE which SPR provided a response on behalf of MarramWind for, in addition to contributing to an industry-wide response delivered by Scottish Renewables.

Policy / legislation	Year	Context
Updates to Scottish Government Offshore Wind Policy Statement	Emerging	The Scottish Government recently consulted on updating its offshore wind ambition (Scottish Government, 2025b). "*The Scottish Government is resetting its ambition and aiming for the development of up to 40GW by 2035-2040 in addition to its existing operational capacity*." This ambition accounts for the Scotwind and INTOG leasing rounds and includes 1GW future Test and Demonstration projects included in the draft updated SMP-OWE. SPR on behalf of MarramWind Limited provided a response to this consultation.

3.3 Climate Change, Net Zero and decarbonisation

3.3.1 The Climate Emergency

3.3.1.1 Climate change is one of the largest global threats to humanity and the natural environment, with international summits being held and agreements made to combat this crisis across several decades. This is primarily organised by the United Nations (UN), with the first legally binding international policy dealing with the climate change emergency being The Paris Agreement (2015), which was adopted by 196 UN Member States, including the UK.

3.3.1.2 The Paris Agreement agreed 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.

3.3.1.3 With consideration of the importance of The Paris Agreement, all UK and Scottish policies and legislation subsequently published relating to the mitigation and combat of the climate change emergency are based on the agreement.

3.3.1.4 Based on the 6th Assessment Report (AR6), published in 2023 by the Inter-Governmental Panel on Climate Change (IPCC), human-induced warming has already resulted in a 1°C increase when compared to pre-industrial levels. The key messages from AR6 were:

- 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% 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.

3.3.1.5 AR6 concluded that there is a chance humanity can combat climate change in the timescale required, but that this is increasingly unlikely. A rapid and immediate change to non-fossil fuel energy sources is considered the best way to counter climate change within the timescales required.

3.3.1.6 In an Indicators of Global Climate Change Study by the University of Leeds (University of Leeds, 2025), at current emissions rates the globe has just over three years before using the remaining carbon budget to limit global warming to 1.5°C. The indicators show that human activities are increasing the earth's energy imbalance and driving faster sea-level rise compared to the AR6 assessment. The report states:

"Human-induced warming has been increasing at a rate that is unprecedented in the instrumental record, reaching 0.27 [0.2–0.4] °C per decade over 2015–2024. This high rate of warming is caused by a combination of greenhouse gas emissions being at an all-time high of 53.6±5.2 Gt CO2e yr^{-1} over the last decade (2014–2023), as well as reductions in

the strength of aerosol cooling. Despite this, there is evidence that the rate of increase in CO2 emissions over the last decade has slowed compared to the 2000s, and depending on societal choices, a continued series of these annual updates over the critical 2020s decade could track decreases or increases in the rate of the climatic changes presented here."

3.3.1.7 **Paragraph 3.3.1.6** highlights how imperative the reduction of GHG emissions is through Net Zero policy of the UK and Scottish Governments.

3.3.2 Decarbonisation and Net Zero

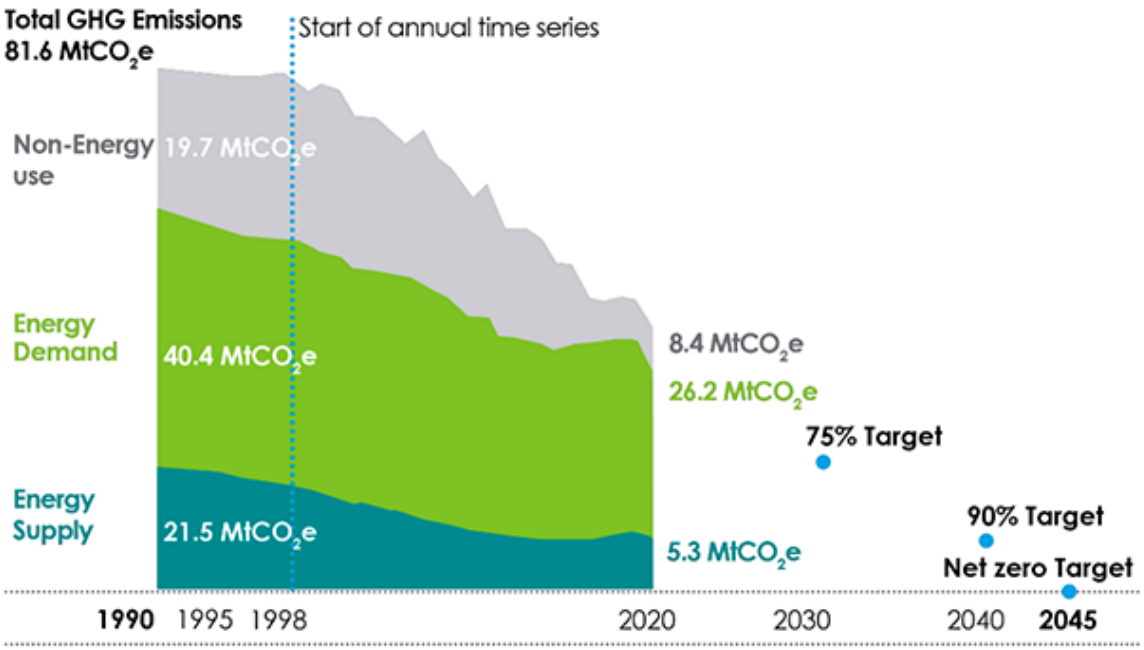
3.3.2.1 The Scottish Government officially declared a 'Climate Emergency' in April 2019 (Scottish Government, 2019b) stating that Net Zero and decarbonisation are considered the only ways to achieve long-term survivability against climate change.

3.3.2.2 There have been legal obligations established within the UK and Scotland to enforce Net Zero through amended legislation, specifically:

- Climate Change (Scotland) Act 2009, as amended by the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019, as amended by the Climate Change (Emission Reduction Targets) (Scotland) 2024; and
- The Climate Change Act 2008, as amended by the Climate Change Act 2008, 2050 Target Amendment Order 2019.

3.3.2.3 This legislation established a target for Net Zero emissions of all GHG by 2045 in Scotland (and 2050 in the UK as a whole), with additional carbon budgets established in Scotland leading up 2045. **Plate 3.1** presents the reduction in GHG emissions reductions needing to be achieved alongside what has been emitted since 1990.

Plate 3.1 GHG Emissions since 1990 within Scotland, and the target of Net Zero (Scottish Government, 2023b)



3.3.2.4 Decarbonisation is the process for achieving Net Zero by reducing the carbon footprint of energy use throughout Scotland and the UK. Reductions in GHG emissions will help minimise the warming effects caused by anthropogenic activities and is considered the only pathway to achieving Net Zero. This will be achieved through prioritising the development of renewable energy sources and removing the release of GHG produced by hydrocarbon-based energy sources.

3.3.2.5 It is recognised that the development of large-scale decarbonisation through new energy infrastructure such as nuclear power, offshore wind farms and solar plants, is a time-consuming process, often taking up to a decade from inception to energy production. With consideration of the significant threat that climate changes pose both to the UK, Scotland and the globe, there is an urgent need to develop and construct as many renewable energy projects as possible within a quick timescale, which is reinforced by the targets set.

3.3.2.6 The scale of decarbonisation within Scotland is established within the draft Energy Strategy and Just Transition Plan (Scottish Government, 2023b) and the commitment to a just transition to Net Zero is confirmed as an overarching spatial principle in the National Planning Framework 4 (Scottish Government, 2023a). The draft Energy Strategy establishes clear strategies, policy positions and maps out actions to provide focus towards government targets. It focuses on the transition to Net Zero, including considerations for affordability, community benefits and ownership for local communities. This transition can be led by the Scottish Government, however there are a number of aspects that are dependent on actions from the UK Government, including:

- 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.

3.3.2.7 With specific points relating to offshore wind including:

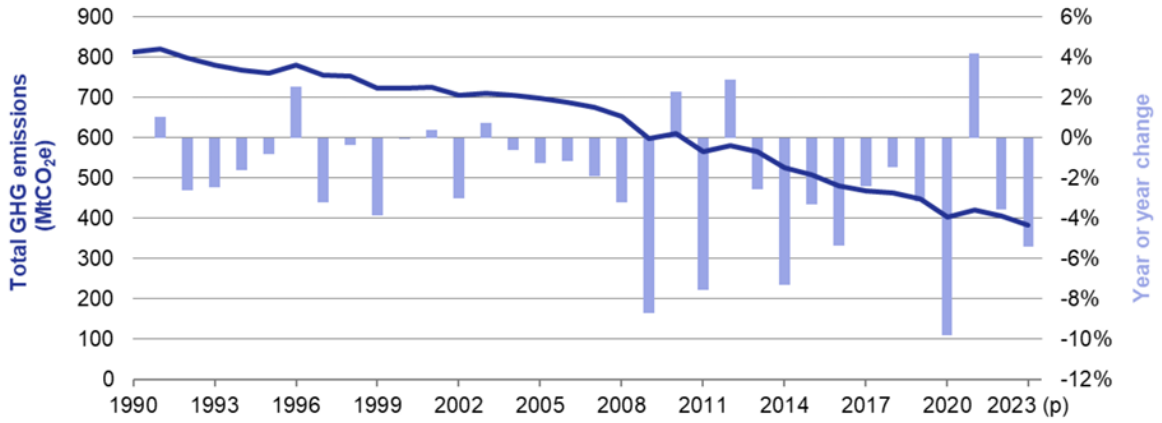
- improvements to the licensing and consenting system to allow an increased pace of development in Scottish waters; and
- a reform to the existing EIA and HRA processes to reduce the time for projects to achieve consent.

3.3.2.8 It is widely accepted that the need for reduction in GHG emissions is greater than just achieving the established targets for Net Zero, with there being a need to go above and beyond the national targets to try and counter and reverse the effects of climate change as quickly as possible.

How Decarbonisation has been achieved to Date

3.3.2.9 GHG emissions within the UK decreased by 52.7% in 2023 when compared to 1990 (**Plate 3.2**, DESNZ, 2024c) due to a reduction in gas demand from the generation of energy. GHG emissions from UK electricity generation fell by 19.6% (10.8 million tonnes of carbon dioxide equivalent (MtCO2e)) in 2023, mainly due to increased electricity imports from France, unlike 2022 where the UK had higher exports meaning less gas was needed to meet the electricity demand.

Plate 3.2 UK GHG emissions between 1990 and 2023 (DESNZ, 2024c)



3.3.2.10 The main reduction in GHG emissions has been attributed to a decrease in the amount of power produced from coal and gas-powered power stations. There has been a significant number of older coal and gas power stations decommissioned in the recent decades, with Scotland's last coal fuelled power stations closing in 2016, alongside the 11.5GW of other coal fired power stations being decommissioned between 2012 – 2015.

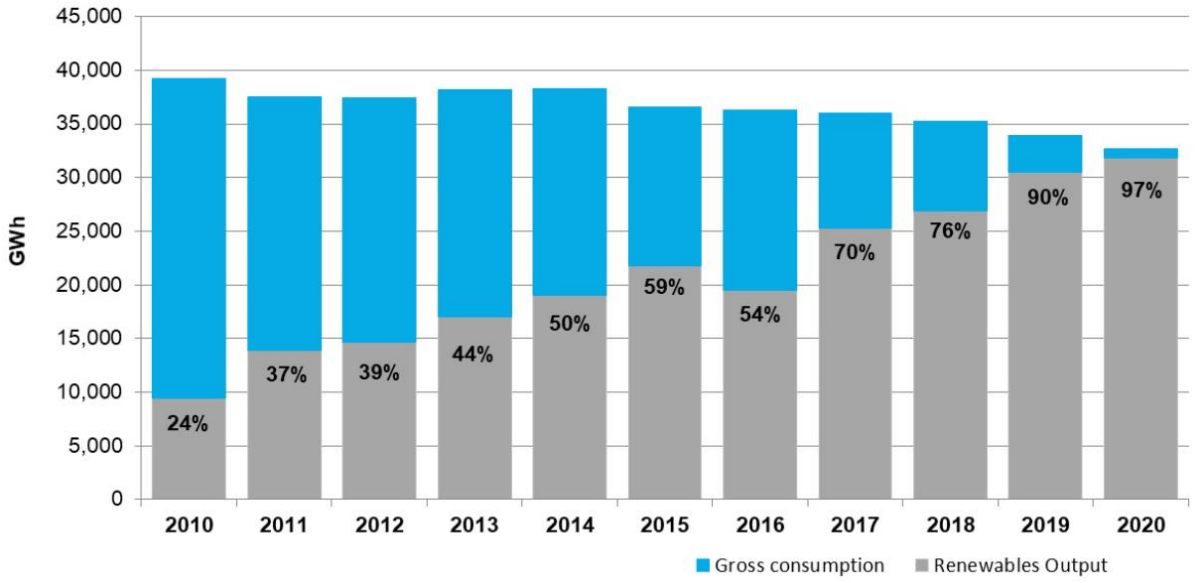
3.3.2.11 Other sectors are also reducing emissions, with emissions from buildings and carbon generating products having fallen by 6.2% (5.1 MtCO2e) in 2016, with high energy prices likely to have been a factor in reduced gas use for heating buildings. Industry sector emissions also fell by 8% (4.6 MtCO2e),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

3.3.2.12 There has been a 11.1% decrease in GHG emissions from domestic transport since 2019, however domestic transport remains the largest source of emissions in the UK, accounting for 29.1% in 2023 (DESNZ, 2024c).

3.3.2.13 The electricity supply from other sources has increased, with 97% of Scotland's gross electricity consumption being provided by renewable sources in 2020 (**Plate 3.3**).

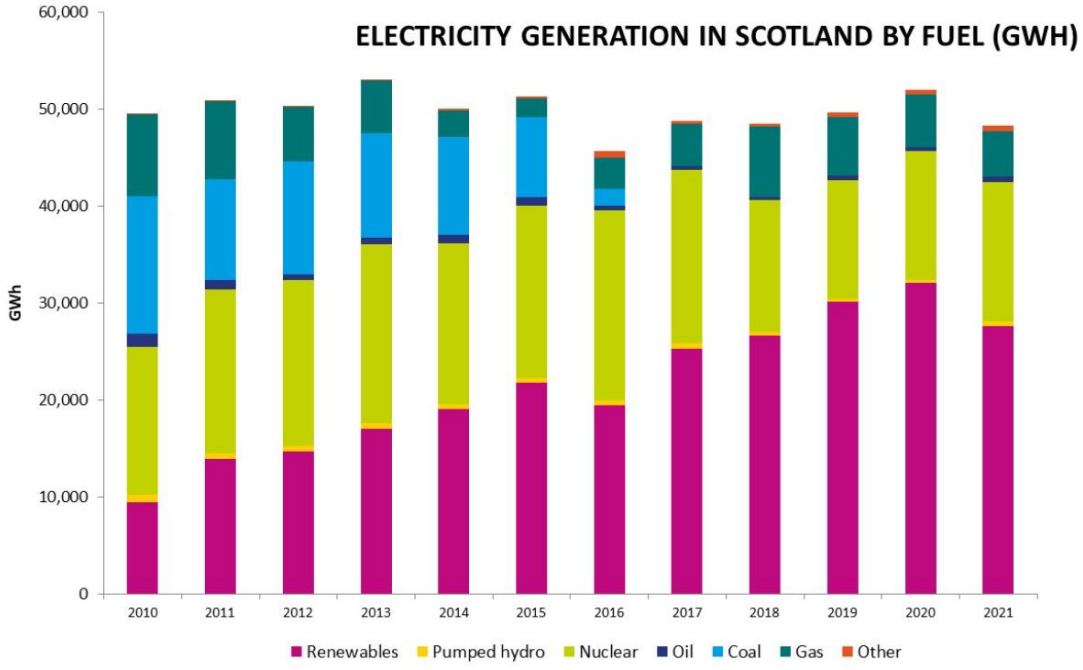
3.3.2.14 UK Government policy (HM Government, 2020b) outlines major shifts away from fossil fuels to electricity across multiple sectors, for example transitioning homes and buildings from gas boilers to electric heat pumps, phasing out petrol and diesel vehicles by 2030 (a zero emission vehicle mandate is now in place to phase these out by 2035 (HM Government 2025c)) and promoting electric vehicles and electrifying industrial processes where feasible. This shift is expected to double electricity demand by 2050, making electricity the dominant form of energy. Electricity from offshore wind is required to meet this rising demand. The 2025 Report to Parliament on Progress in Reducing Emissions (CCC, 2025) specifically highlights progress to date has been primarily driven by decarbonisation of the energy system through the use of renewable energy replacing coal and gas. Industrial energy use coming from electricity is currently at 28%, this could increase rapidly and the growth in the market share of EV sales reached 19.6% and has the mandated target by 2035. As the UK progresses towards electrification targets in these sectors, the renewables sector will be an important source of electricity for this additional demand.

Plate 3.3 Scottish gross electricity consumption and percentage renewables output (Scottish Renewables, 2024)



3.3.2.15 The sources of electricity have changed significantly since 2010, with renewables and nuclear power being the primary sources of power since 2018 (**Plate 3.4**).

Plate 3.4 Electricity generation in Scotland by fuel (Gwh) (Scottish Renewables, 2024)



3.3.3 Offshore wind and decarbonisation

3.3.3.1 Renewable energy production from offshore wind is, and will continue to be a critical and essential part of decarbonisation efforts within the UK and Scotland. The need for the renewable production of electricity will only grow if Scotland is going to meet its legislative Net Zero targets. Offshore wind is a proven low-carbon generation source that can be developed at scale and is becoming a significant asset in decarbonisation efforts across the UK and Scotland.

3.3.3.2 The National Grid Electricity System Operator (NGESO) established in a 2023 Future Energy Scenarios report (NGESO, 2023) that in all the scenarios considered by the report as ways for the UK to meet its Net Zero targets, a significant increase in reliance on renewables is required, in particular offshore wind. 39% of the UK's wind resource is located within Scottish territory and is therefore well placed to provide a large proportion of the UK's growing offshore wind generation capacity required to meet future energy demand.

3.3.3.3 The need for securing energy production from offshore wind has been highlighted in recent policy, Clean Power to 2030 Action Plan (DEZNZ 2024a) maintains that successful delivery will require rapid deployment of new clean energy capacity across the whole of the UK, reflecting the UK ambition of 43-50 GW of offshore wind by 2030 target, with a predicted capacity range of 72-89 MW derived from offshore wind under the 2035 Future Energy Scenarios predictions (HM Government, 2025d) providing a 10-year horizon for connection offers. The Updated EN-1 (HM Government, 2025a) recognises that meeting the net zero targets 'necessitates a significant amount of new energy infrastructure', and recognises offshore wind infrastructure as a significant pathway for the delivery of the Net Zero targets.

3.3.3.4 The Draft Updated Sectoral Marine Plan (Scottish Government, 2025a) and associated documents (for example, the Strategic Environmental Assessment, Plan Level Habitat Regulations Appraisal and Social and Economic Impact Assessment) establish the planning baseline for the sustainable development of offshore wind in Scotland with the aim of Scotland being a global leader for development of offshore wind and a key contributor to the UK's Clean Power to 2030 Action Plan. The Sectoral Marine Plan assesses the potential national and regional opportunities and constraints resulting from the potential development of up to 37.4 GW (consisting of the Scotwind Option Areas, the INTOG Option Areas and the potential development of up to 1GW of generating capacity from offshore wind testing and demonstrating sites).

3.3.3.5 The Scottish Government in June 2025 (Scottish Government, 2025b) sought views on increasing the offshore wind ambition to 40GW by 2040 (from its previous ambition of 8-11GW by 2030. The increase in ambition seeks to reaffirm the Scottish Government's commitment to the offshore wind sector and support national climate change targets.

3.3.3.6 The aforementioned policies all recognise offshore wind developments should be prioritised and progressed with urgency to ensure decarbonisation is carried out at a high pace, whilst also securing a renewable, long term energy supply.

Floating offshore wind farms

3.3.3.7 The primary type of offshore wind farm constructed to date has been with fixed-bottom foundations, however recent progression in technology has enabled the development and deployment of floating offshore windfarms on a commercial scale. They overcome the limitations of water depth enabling significantly more opportunities for the development of offshore windfarms.

3.3.3.8 The government is planning to have developed up to 50GW of offshore wind capacity by 2030. Further development of the UK's floating offshore wind farm capacity will be key to accelerating the rate of decarbonisation, particularly moving forwards from 2030 as it

unlocks a significant amount of wind resource that would otherwise be inaccessible. It is anticipated that floating offshore wind farms are going to be a key element in the future generation capacity.

3.3.3.9 There have been many trials testing the capability of floating wind turbine technology, which have established its potential as a reliable method of decarbonisation. The first commercial floating offshore wind farm in Europe, WindFloat Atlantic, was developed by Windplus, S.A. and has produced 345GWh of electricity since it became operational in 2020 (OceanWinds, 2025), highlighting the great potential this technology has to generate low-carbon electricity. Use of this technology both enables development of offshore wind farms in new locations previously inaccessible, as well as opening up new opportunities for expansion of existing wind farms constructed when floating technology had not been developed.

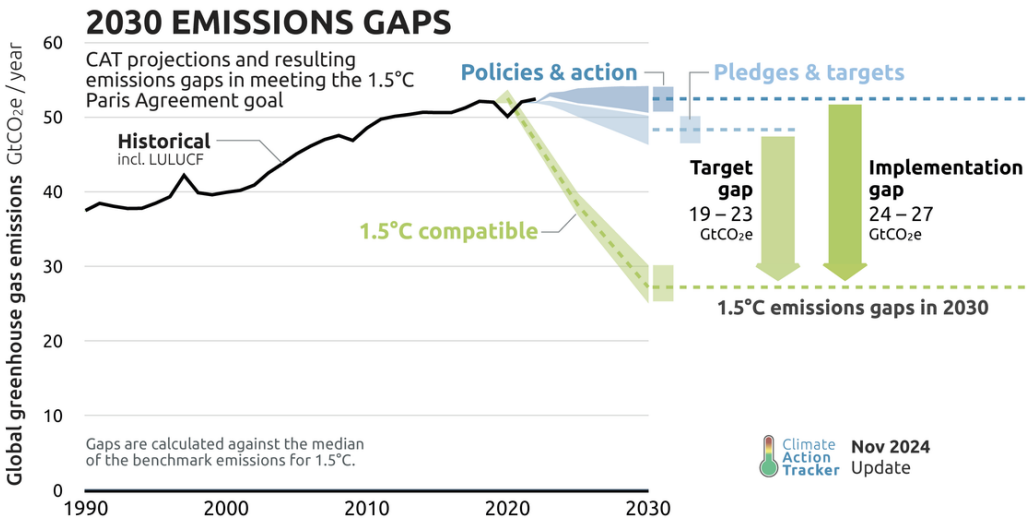
3.3.3.10 The Offshore Renewable Energy Catapult anticipates that the first large-scale and commercially viable floating offshore wind farm will be able to be deployed within the UK around 2030 or sooner. The Project's aim is to be one of the first to fully explore and utilise this technology within Scotland, and demonstrate how much potential it has to help combat the climate crisis through decarbonisation and electrification.

3.4 Energy requirements

3.4.1 The global energy gap

3.4.1.1 **Plate 3.5** highlights a significant global gap between current decarbonisation pledges, implemented policies, and the level of action required to limit temperature rise to below 1.5°C, as agreed under the Paris Agreement. Existing global policies are insufficient to meet these targets, and there is no certainty that international commitments will be fulfilled. In light of this global risk, the Applicant considers that increasing renewable energy generation is essential to addressing the climate crisis. Therefore, the generational potential of offshore wind should not be artificially constrained.

Plate 3.5 The emissions gap between current global policies, targets / pledges and the Paris Agreement target (Climate Action Tracker, 2024)



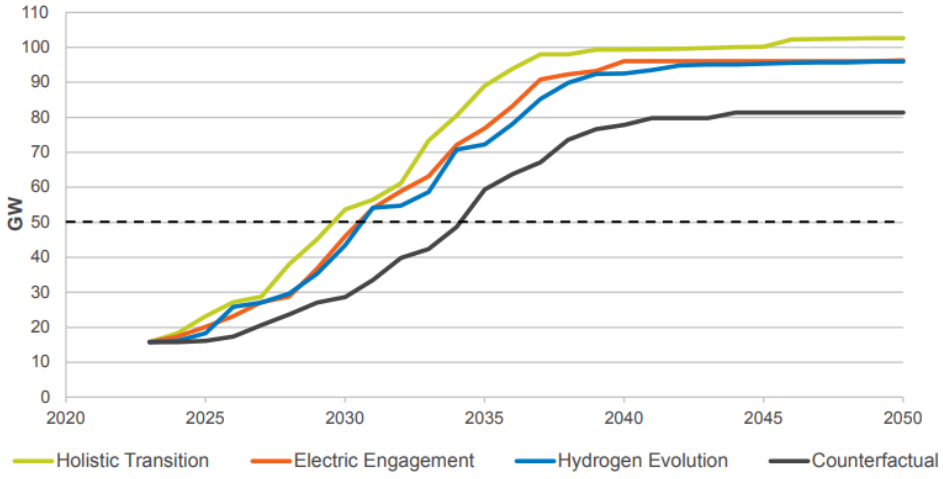
3.4.2 The need for additional offshore wind deployment

3.4.2.1 The Crown Estate (TCE) and CES control a significant proportion of the offshore seabed, which has the potential for developments, especially for utilisation of offshore wind. The deployment of renewable energy is increasing around the globe and offshore wind is anticipated to be essential in meeting targets, with floating wind playing an increasing role in meeting this demand. The UK and Scotland are well placed to take advantage of floating wind technology with generations of expertise and a globally leading role in offshore renewables. The UK's commitment to further utilising this developing technology is highlighted by Leasing Round 5 for offshore wind solely comprising of floating offshore wind projects located in the Celtic Sea (TCE, 2023), with further opportunities anticipated within Leasing Round 6.

3.4.2.2 With the consideration of the policies in **Table 3.2** it is clear that the UK and Scottish Governments consider the deployment of further offshore wind farms to be critical in delivering climate change policy going forward into 2030 and onwards. The surplus energy provided by the Project to the grid will be an important contribution to decarbonisation targets and combatting climate change.

3.4.2.3 Currently the UK has 14.7GW of operational offshore wind developments (NESO, 2024). However, as shown in **Plate 3.6**, a substantial increase in the amount of offshore wind is needed to meet all of the considered pathways. The 2030 target of 50GW of offshore wind is only achieved by the Holistic Transition pathway. This establishes the significant need to develop offshore wind capacity to ensure this target is achieved.

Plate 3.6 Offshore wind capacity in GW, excluding non-networked wind (NESO, 2024)



3.4.2.4 Furthermore, it is notable that whilst many offshore wind farm projects have been proposed, it's unlikely that all will be developed through to operation, with a number also likely having reduced capacities than originally proposed due to environmental, physical or socio-economic constraints. This reinforces the need that as many offshore wind farm projects are consented as possible to ensure that the UK has the best chance possible to meet relevant policy targets.

3.5 Security of supply

3.5.1.1 Securing the supply of energy is an important issue for both the UK and Scotland, and is considered essential for public health and safety, in addition to increasing prosperity and commercial growth within the country. With the advent of COVID-19 and Russia's invasion of Ukraine, the price of imported gas and coal has significantly increased (over 200% and 100% in 2021 respectively).

3.5.1.2 The primary aspect of securing the energy supply is ensuring that there is enough energy within the UK-wide system to cover peak demand (not relying on energy imports or supplies based on fuel imports such as gas), including any unexpected increases in usage or reductions in supply (e.g. closure of a power station). Limited technology is available to store surplus generated energy during periods of low demand to cover for periods of peak demands, therefore increasing the number of sources is key to improving the resilience of the grids supply. The diversity of the sources of energy also has energy security implications, with the war in Ukraine having a significant impact on global oil and gas (O&G) supply prices and supply in general highlighting the risk of reliance on imported hydrocarbons as a source of energy. Considering the ample capacity in the UK for renewable energy generation, it is considered a move towards using them as the primary source of energy within the UK would improve energy security within the UK, significantly reducing our need to import supply.

3.5.1.3 Scotland has established offshore wind generation with an existing energy transmission system with connection possibilities to increase the grids capacity. Increasing Scotland's offshore wind generation and capacity is therefore a logical approach to reducing Scottish and UK reliance on imported supply, in addition to contributing to the Net Zero and decarbonisation targets.

3.6 Affordability of supply and wider socio-economic benefit

3.6.1.1 Offshore Wind Policy Statement (Scottish Government, 2020b) states 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."

3.6.1.2 NPS EN-1 (HM Government, 2023a) states:

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

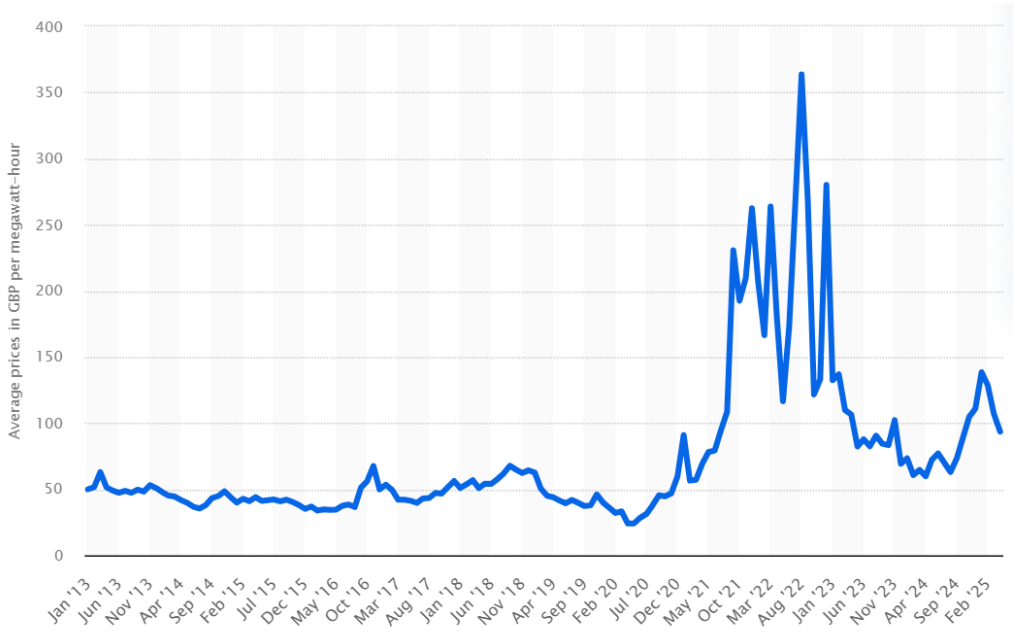
3.6.1.3 EN-1 establishes that a secure, reliable, affordable and Net Zero consistent system in 2050 is likely to be composed mainly of wind and solar. The UK is world leading in its offshore wind sector and is well placed to benefit from continued investment in renewables innovation. Scotland has a considerable volume of suitable seabed resource available for exploitation, which enables the large-scale deployment of offshore wind for achieving the long-term ambition of lowering cost to the consumer and low-carbon energy.

3.6.1.4 Offshore wind farms are proven to be developable at scale for consumers, as opposed to other low-carbon energy sources such as tidal or nuclear, which are considered to be less technically and commercially feasible compared to offshore wind. While all low-carbon energy projects should be considered and pursued to achieve Scottish and the UK's decarbonisation targets, offshore wind is well established enough to produce a significant amount of affordable energy at the required pace, the development of FLOW at scale with the aim of improving affordability to the consumer in the long term is also a key objective

for the Project. It is therefore considered the best approach to improve supply and affordability, which is especially relevant with the current cost of living crisis.

3.6.1.5 The cost of energy in the UK has grown significantly since 2020, with an average cost of £32.04 per megawatt hour (MWh) in February 2020 compared to £93.5MWh in April 2025, a near triple increase in cost (291%) as presented in **Plate 3.7**.

Plate 3.7 Average price of energy MWh since January 2013 until April 2025 (Statista Research Department, 2025)



3.6.1.6 A combination of the COVID-19 pandemic and a lower demand for fossil fuels and falling international gas prices resulted in a low cost of £24.01MWh in April 2020. However, prices promptly began to rise in 2021, the peak coinciding with the Russian invasion of Ukraine prompting a dramatic increase in prices across Europe and the world, peaking at £363.73 MWh in August 2022. These fluctuations in prices and influence from foreign nations highlights the urgent need for the establishment of reliable, domestic sources of energy that is secure to ensure costs remain affordable and stable.

3.6.1.7 The Project aims to improve affordability in the long term by increasing supply to the domestic market, limiting the impacts of international fluctuations in costs on the consumer. Policies are in place for offshore wind farms to ensure that the price of the energy produced is as affordable as possible for customers through the Contract for Difference (CfD) auction process for generation assets and the offshore transmission owner regime for transmission assets. The polices provide a long-lasting fiscal framework, which also encourages competitive pressures which are beneficial for the consumers.

3.6.1.8 The Project is being constructed and energised in phases, which allows for security and certainty in the construction pipeline over a period of 12 years, this could contribute to affordability in the long term by allowing suppliers investment security to enable the refinement and development of the FLOW technology at scale.

3.7 Supply chain development for large scale floating offshore wind

3.7.1.1 The Scottish Energy Strategy (Scottish Government, 2017) clarifies 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 O&G 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."

3.7.1.2 The Scottish Government's Draft Energy Strategy and Just Transition Plan (2023b) states:

"Maximising opportunities for growing Net Zero 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."

3.7.1.3 These plans highlight that the Scottish Government recognise the importance for developments to be connected to the grid and that the capacity of the supply chain is capable to service a major step change in construction. There is a current pipeline of Scottish projects that are progressing through all stages of planning consent and development that encourages investment in improving supply chain capacity and enabling local expansion.

3.7.1.4 The Project is adopting policies for using supply chains and suppliers in Scotland. This will result in the potential supply chain benefits of increased demand and market within Scotland, with the supply contract encouraging further investment and capacity increases across the sector. The phased approach of the construction timeline will provide longer term security to the supply chain within Scotland, enabling the refinement and development of FLOW technology of benefit not only to this Project but also the future deployment of FLOW across Scotland.

3.8 Summary of the need for the Project

3.8.1.1 It is established above that there is a global climate crisis in addition to a cost-of-living crisis, with energy sources and fuel costs being a significant driving component of both. In recognition of this, the UK and Scottish Governments have set out legally binding targets for the production of renewable energy to ensure there is incentive to move towards Net Zero on GHG emissions and encourage decarbonisation efforts as part of a Just Transition. Based on modelling, and the current pipeline of proposed projects, it is recognised that there is a risk of the UK failing to meet these decarbonisation and Net Zero targets, notwithstanding the UK and Scottish Governments having declared a climate emergency.

3.8.1.2 The Project will deliver low carbon electricity to the UK grid generated by floating technology. The Project therefore has a significant contribution to securing the UK's and Scotland's energy supply and meeting decarbonisation and Net Zero targets, with the further benefit of developing and supporting the supply chain for FLOW in Scotland. The Project is essential for the UK and Scotland to have the ability to deliver its legally binding targets, whilst also enabling the UK to be a front runner, leading the way encouraging the global community to achieve the targets of the Paris Agreement.

4. No Alternative Solutions

4.1 Approach to demonstrating the absence of alternative solutions

4.1.1 Introduction

4.1.1.1 This Section identifies and assesses whether there are any alternative solutions to the Project. Alternative solutions range from 'do nothing' to assessing alternative sites, designs, scales and methods of bringing forward the Project. This Section demonstrates the absence of alternative solutions to the Project, in accordance with the Habitats Regulations and associated guidance.

4.1.1.2 There is no prescribed process within the Habitats Regulations for reviewing potential alternative solutions, and no guidance from the Scottish Government. Therefore, the methodology and approach to demonstrating the absence of alternative solutions is guided by the appropriate UK and European guidance, and from precedent set by previous offshore wind farm projects that have submitted derogation cases in both the UK and Scotland.

4.1.1.3 The relevant guidance documents for the alternatives test are:

- Habitat Regulations Appraisal (NatureScot, 2024).
- EC Methodological Guidance - Assessment of plans and projects significantly affecting Natura 2000 sites (the Methodological Guidance), (European Commission, 2021b).
- DTA Ecology (2021a) in draft - Policy guidance document on demonstrating the absence of alternative solutions and imperative reasons for overriding public interest under the Habitat Regulations for Marine Scotland (DTA, 2021a; in draft).
- Habitats Regulations Assessments: protecting a European site (Defra, 2021a).
- Draft best practice guidance for developing compensatory measures in relation to Marine Protected Areas (Defra, 2021b).
- Managing Natura 2000 Sites (MN2000) - 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 (European Commission, 2018).
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (Article 6(4) Guidance) (European Commission, 2007).

4.1.1.4 Key documents within the **EIA Report** that support the assessment of alternatives, with reference made throughout, are:

- **Volume 1, Chapter 3: Site Selection and Alternatives** of the **EIA Report**; and
- **Volume 1, Chapter 4: Project Description** of the **EIA Report**.

4.1.1.5 Based on the guidance documents above, the assessment of alternatives is presented using the following three step process:

- Step 1: Identification and characterisation of the Project objectives;
- Step 2: Consideration of the 'do nothing' scenario; and
- Step 3: Identification of any feasible alternative solutions.

4.1.1.6 Alternatives need to meet the original objectives of the proposal. An alternative solution is acceptable if it:

- achieves the same overall objective as the original proposal;
- is financially, legally and technically feasible; and
- is less damaging to the European site and does not have an AEoSI of this or any other European site.

4.1.2 Step 1 – core objectives of the Project

4.1.2.1 It is considered that for an alternative solution to be considered feasible, it must achieve the same core objectives of the Project. Therefore, it is important to the assessment of alternatives that the core objectives are defined to determine if it is theoretically possible to achieve the same results, in a feasible manner, through different methods that themselves have no adverse effects on the integrity of a protected site. In the context of the derogation provisions, an alternative solution is one that delivers the same objectives in a way that is less damaging to, and does not have an adverse effect on, the European site when compared to the original proposal.

4.1.2.2 The core objectives that frame the search for alternatives must respond to and must be understood in the context of the relevant policies and the needs case that the Project serves, as set out in **Chapter 3** of this **Derogation Case**. The core objectives for the Project are identified within **Section 3.1** with consideration for supporting policy in **Section 3.2**.

4.1.2.3 Scottish Ministers when considering the Derogation Case will have regard to the objectives identified by the Applicant and consider them in the context of Scottish and UK policy frameworks, including the Scottish Government's legislative commitments and policy framework, which sets out national ambitions for Scotland's energy future to achieve Net Zero emissions by 2045 to mitigate the effects of climate change, decarbonisation and the improvement of the Scottish energy supply.

4.1.2.4 This includes but is not limited to:

- Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025a).
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2024.
- Clean Power to 2030 (DESNZ, 2024a).
- Draft Energy Strategy and Just Transition Plan (Scottish Government, 2023b).
- Ministers will also have regard to UK Government's Overarching National Policy Statement for energy (EN-1, HM Government 2023a) and renewable energy infrastructure (EN-3, HM Government, 2023b).
- BESS (HM Government, 2022).

4.1.2.5 For example, in the recent West of Orkney Offshore Wind Farm Derogation Case (Scottish Government, 2025c), Scottish Ministers considered the following policies in deciding on the appropriate and primary objectives for that project:

- Part one of the Climate Change (Scotland) Act 2009 and the Scottish Government's Offshore Wind Policy Statement (2020) together with the draft 'Update to the 2020 Offshore Wind Policy Statement: Scotland's Offshore Wind Ambition (2025).
- Scottish Government's draft Energy Strategy and Just Transition Plan (2023).

- UK Government's Overarching National Policy Statement for energy (EN-1), and National Policy Statement for renewable energy infrastructure (EN-3). "*These policies provide a framework for delivering the UK's international commitments on climate change. The Scottish Ministers have taken particular account of EN-1's identification of nationally significant low carbon infrastructure (which includes offshore wind) as a critical national priority ("CNP") such that when considering derogations under the Habitat Regulations the starting point for Derogation Case for West of Orkney Offshore Wind Farm CNP infrastructure should be the overarching need for energy security and decarbonising the power sector to combat climate change."*
- UK Government's BESS (2022) "*and the contribution which Scotland can make to the target of 50GW of offshore wind by 2030 across the UK"* together with the UK Government's Clean Power 2030 Action Plan.
- CCC's 'Progress in reducing emissions' 2023 Report to Parliament, *"which highlights that an average annual deployment rate of 4.5GW is required to deliver 50GW of offshore wind by 2030"* (p.204). The Scottish Ministers have further considered the CCC 'Progress in reducing emissions' 2024 Report to Parliament, which notes low levels of offshore wind deployment in 2023 (p.56) and the need to get rates back on track given offshore wind's essential contribution to Net Zero and government renewables targets.

4.1.3 Step 2 – the 'do-nothing' scenario

4.1.3.1 Step 2 in the derogation process involves consideration of the 'do nothing' scenario, which assesses the outcome if the Project does not proceed.

4.1.3.2 This scenario provides a baseline against which the need for compensation measures and public benefits can be evaluated.

4.1.3.3 The European Commission's 'Managing Natura 2000 Sites' guidance states:

"Crucial is the consideration of the 'do nothing' scenario, also known as the 'zero' option which provides the baseline for compensation alternatives."

4.1.3.4 The draft DTA 2021 guidance suggests that presenting a 'do-nothing' scenario is useful for comparing alternatives and assessing public benefits. It notes that this scenario is most relevant where limited or no tangible public benefit can be demonstrated. In the case of an offshore wind farm, a 'do nothing' approach would fail to deliver any of the core Project objectives and would likely be discounted in decision-making, given the clear public benefit associated with proceeding.

4.1.3.5 Nonetheless, the 'do nothing' scenario is assessed here for completeness and in line with precedent set in previous offshore wind farm decisions, including the Green Volt Offshore Wind Farm Derogation Case (*Scottish Government, 2024b*), where Scottish Ministers stated:

"Identification of reasonable alternative solutions will consist of either a 'Do Nothing' approach, or consideration of an alternative project location, scale or design."

4.1.3.6 If it is determined that the 'do nothing' option is not an alternative solution, other options should be identified to see if they meet the core objectives of the Project while avoiding or reducing damage to the European site.

4.1.4 Step 3 – identify alternative solutions

4.1.4.1 Once the core objectives of the Project are established, relevant guidance requires that all potential alternative solutions be identified and assessed.

4.1.4.2 On the matter of alternatives, the European Commission's Managing Natura 2000 Sites guidance states:

"It is for the competent national authority to ensure that all feasible alternative solutions that meet the plan/project aims have been explored to the same level of detail."

4.1.4.3 The use of Project objectives as a basis for assessing alternatives was endorsed by the English High Court in Spurrier v Transport Secretary (2019), which stated:

"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."

4.1.4.4 The Secretary of State states in the Hornsea Four Offshore Wind Farm decision letter (BEIS, 2023a), and reiterated in the Rampion 2 Offshore Wind Farm Habitats Regulations Assessment (DEZNZ, 2025e), stated:

"The Secretary of State has considered alternative forms of energy generation in the context of the alternative solutions test and is satisfied that, in line with the 2021 joint guidance, alternative forms of electricity generation would not meet the objectives of the project. Furthermore, other OWF proposals do not present an alternative solution as all available OWF projects are required in order to meet UK targets for renewable energy."

4.1.4.5 Further guidance was provided by the Scottish Ministers in the Green Volt Offshore Wind Farm Derogation Case (Scottish Government 2024b), where it was 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."

4.1.4.6 As detailed above, guidance clarifies that alternative energy generation sources do not count as alternative solutions, a precedence that has been applied throughout other derogation cases for offshore wind farms throughout Scotland and the UK.

4.1.4.7 In the recent West of Orkney Offshore Wind Farm (Scottish Government 2025c), Salamander Offshore Wind Farm (Scottish Government 2025d) and Berwick Bank Offshore Wind Farm (Scottish Government 2025e) consent Scottish Ministers confirmed:

"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."

4.1.4.8 Guidance suggests alternatives could theoretically include alternative locations, scale or design of the Project. However, alternatives that lack practical feasibility do not need to be considered. European Commission (2018), relevant European Court of Justice (ECJ) case law, and 'Managing Natura 2000 Sites' makes clear that the consideration of alternative

solutions should be limited to those that are "*feasible*". Defra guidance (2021b) further clarifies that a potential alternative must be "*financially, legally and technically feasible*". This approach was confirmed by the Scottish Ministers in the Green Volt Offshore Wind Farm Derogation Case (Scottish Government, 2024b) (see **paragraph 4.1.4.5**).

4.1.4.9 Once alternatives are identified, each must be assessed to determine whether it constitutes a viable alternative solution to the Project. Feasibility is assessed across three categories: financial, legal and technical. Financial feasibility means that while an alternative may be more expensive than the original proposal, it must not be prohibitively so; the alternative must remain economically viable for the developer.

4.1.4.10 An alternative would not be considered technically feasible if the design is unsound, untested, or relies on unsafe technologies, fails to meet industry safety and regulatory standards, or cannot be delivered within the required timeframe. Technologies that are still in development or have not undergone rigorous testing and demonstration are not considered technically feasible, even if theoretically possible. To ensure a robust development, alternative solutions must be based on technologies that are proven, available, and capable of being procured at the point of construction. This includes the technical feasibility of integrating different components of the Project - for example, the compatibility of the floating unit with the selected WTG design.

4.1.4.11 Legal feasibility means that there are no legal or consenting impediments to the potential alternative proceeding. In this context, it is considered that alternative locations must be within areas currently identified for leasing by CES. This position was confirmed in the Scottish Ministers' decision for the Green Volt Offshore Wind Farm Derogation Case (Scottish Government 2024b):

"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 Scottish O&G platforms."

4.1.4.12 As the objectives of the Project extend beyond Scotland's Net Zero ambitions, UK-wide Net Zero targets have been included and therefore further examples from English offshore wind farm derogation decisions are relevant.

4.1.4.13 In the HRA for Rampion 2 (DESNZ, 2025b), the Secretary of State concluded:

"The Secretary of State considers that offshore wind farm projects which are located outside of UK territorial waters are not an alternative to the project as this would not meet the objective to support decarbonisation and security of the UK's energy supply."

4.1.4.14 Regarding the identification of specific alternative locations, the Secretary of State further noted in Rampion 2 HRA:

"*Within the UK, all offshore wind farms are required to secure an Agreement for Lease from the Crown Estate or Crown Estate Scotland. The Crown Estate/Crown Estate Scotland identify suitable locations for offshore wind through leasing rounds informed by HRA and Strategic Environmental Assessment. The Applicant considers that this precludes the use of sites which have not been identified through the leasing rounds… The Secretary of State agrees that a compelling need in the public interest for the project is clearly established, and the use of alternative locations or the repowering of existing offshore wind farms would fail to meet the aims and objectives of the project*."

4.1.4.15 Similarly, in the HRA for Hornsea Project 4 (DESNZ, 2023b), the Secretary of State concluded that feasible alternative locations must be within areas or sites currently identified by CES or TCE:

"In his assessment of alternatives, the Secretary of State has not constrained himself solely to those alternatives that could be delivered by the Applicant. Nevertheless, the Secretary of State acknowledges that any alternative must be economically feasible for the developer and allow the developer to fulfil the terms of its lease with TCE."

4.1.4.16 Scottish Ministers may also take into consideration the policy on alternatives set out in the UK's NPS EN-1. EN-1 recognises 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 across the UK, and that each location should maximise its generation capacity. On this basis, EN-1 notes:

"*other potential 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 the objectives and therefore be treated as an alternative solution*".

4.1.4.17 In the West of Orkney Offshore Wind Farm Derogation Case, Scottish Ministers (Scottish Government 2025c) stated:

"The Scottish Ministers have also had due regard to the UK Government's Overarching National Policy Statement for energy (EN-1), published in January 2024, and its National Policy Statement for renewable energy infrastructure (EN-3), published in November 2023."

4.1.4.18 If a potential alternative solution is identified that meets the objectives of the Project and is legally, technically, and financially feasible, it must be subject to further assessment in terms of its relative effects on the integrity of the UK NSN, compared to the Project. A potential alternative cannot be considered a valid alternative solution if it results in the potential for an AEoSI. Furthermore, it must be materially less damaging to the European site(s) in question and must not result in the potential for an AEoSI for any other European site. Potential alternatives that are likely to give rise to similar potential adverse effects on the relevant European site or the UK NSN can therefore be discounted.

4.1.4.19 Where alternative solutions exist, they must be assessed not only in relation to the specific European site and qualifying features for which the potential for AEoSI could not be ruled out for the Project, but also in terms of their potential impact on the NSN as a whole. It is important to note that an alternative solution with a lesser impact than the original proposal does not automatically pass the alternatives test. According to CMS (2021), there must be a *significant and material reduction* in impact for an alternative to be considered effective.

4.2 No alternative solutions: Step 1 – core objectives of the Project

4.2.1.1 The need for the Project forms the overarching rationale for the consent application, as outlined in **Chapter 3** and further detailed in the **Offshore Planning Statement**. 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 generate low carbon electricity.

4.2.1.2 The Project objectives alongside the rationale for their inclusion are presented in **Table 4.1.** Each Project objective addresses different aspects of the need for the Project as identified in **Chapter 3**.

Table 4.1 Rational for the Project objectives

ID	Objective	Rationale
1	**Contribution to Net Zero and Offshore Wind Targets.** To export a significant volume of renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation. This includes making an important contribution to the achievement of the Scottish Government's updated offshore wind ambition of 40GW of new deployment by 2035 to 2040.	Floating offshore wind is essential to achieving the UK and Scotland's legally binding Net Zero targets - 2045 for Scotland and 2050 for the UK. MarramWind will generate up to 3GW of renewable electricity, significantly displacing carbon-intensive generation and contributing to long-term decarbonisation. The Project will play a critical role in sustaining emissions reductions beyond 2030. It also supports Scotland's ambition for 40GW of offshore wind deployment by 2035 to 2040, helping to meet future energy demand with clean, homegrown power.
2	**Enhancing Energy Security.** To increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.	By generating 3GW of homegrown electricity, MarramWind will reduce reliance on imported fossil fuels and enhance the UK's energy independence. This will help insulate consumers from global energy price volatility and geopolitical instability, which have disrupted energy markets in recent years. A more resilient and diversified domestic energy mix will reduce exposure to external shocks and contribute to long-term affordability and stability for consumers.
3	**Unlocking Deep-Water Potential.** To support the realisation of Scotland's deep-water potential and maximise use of the available seabed in synergy with other users.	Scotland's deeper offshore waters offer some of the strongest and most consistent wind resources in Europe but are inaccessible to fixed-bottom turbines. MarramWind will unlock this potential through floating technology, enabling large-scale clean energy generation in areas previously undevelopable. By locating further offshore, the Project makes efficient use of limited seabed and benefits from higher wind speeds, resulting in more reliable and higher-yield electricity generation. This translates to a higher capacity factor and reduced intermittency compared to near-shore sites.
4	**Strengthening the Scottish Supply Chain.** To support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters, providing continuity and security for supply chain development.	The Project's phased construction over a 12-year period will provide long-term certainty to the Scottish offshore wind supply chain. As one of the largest floating wind projects in development, it will anchor investment, stimulate innovation, and create sustained demand for local manufacturing, fabrication, and services. This continuity will help build a globally competitive supply chain and support the growth of a green industrial base in Scotland.

ID	Objective	Rationale
5	**Driving Technological Innovation.** To drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.	The Project will deploy floating wind technology at commercial scale, moving beyond pilot projects to full-scale infrastructure. With the aim of driving down costs through economies of scale and technical innovation, this Project will accelerate learning and help position the UK as a global leader in floating offshore wind. Scotland has an early mover advantage through projects like Hywind and Kincardine, and leasing rounds such as ScotWind and INTOG. MarramWind will build on this foundation to further advance floating wind technology and cement the UK's leadership in this emerging sector.
6	**Supporting Socio-economic Growth.** To support socio-economic growth in Scotland and contribute to achieving a Just Transition.	Facilitating socio-economic development is a key ambition in Scotland's Just Transition Plan, which aims to maintain or increase employment as the sector moves from high carbon to low carbon energy generating technologies, such as floating wind. The Project will facilitate socio-economic development by generating new low-carbon jobs, increasing opportunities for Scottish suppliers and helping to develop the future offshore workforce, skills and employability. Given the scale of the Project and the 12-year phased construction period, the socio-economic benefit is expected to be wide reaching, with significant beneficial impacts identified within **Volume 1, Chapter 30: Socio-Economics** of the **EIA Report**.

4.3 No alternative solutions: Step 2 – 'do nothing' scenario

4.3.1.1 The 'do-nothing' scenario assesses the potential impacts of not progressing the Project.

4.3.1.2 Not proceeding with the Project would mean the loss of 3GW of offshore wind generation capacity. This would negatively impact Scotland's delivery of renewable energy production from offshore wind, which is and will continue to be a critical and essential part of combatting climate change and delivering decarbonisation efforts within Scotland and the UK. The Project will be an essential contribution towards Scotland meeting its legislative Net Zero targets, this would not be achieved under the 'do nothing' scenario and would not be consistent with the emissions reduction requirements of the Climate Change (Emissions Reductions Targets) (Scotland) Act 2024.

4.3.1.3 The Scottish Government is clear in its commitment to working with the UK Government to deliver Clean Power 2030 ambitions (as confirmed in the draft SMP-OWE, Scottish Government, 2025a). Clean Power 2030 commits to helping achieve the UK Net Zero target by 2050, setting an ambition to transition to a 95% clean energy system across the UK by 2030 by producing up to 50GW offshore wind by 2030, 'doing nothing' will not aid the Scottish Government in supporting the UK Government with its ambitions. The Scottish Government has also opened a consultation on its Offshore Wind Policy Statement to increase the ambition for offshore wind in Scottish waters to up to 40GW by 2040 (Scottish Government, 2025b).

4.3.1.4 Offshore wind is a proven low-carbon generation source that can be developed at scale and is becoming a significant asset in decarbonisation efforts across the UK and Scotland. As discussed in **Section 3.4**, the Future Energy Scenarios 2023 report (NGESO, 2023), highlighted the need for increased capacity within the UK as a whole, emphasising the role of offshore wind. It is widely recognised that the speed of how quickly the UK moves away from the use of fossil fuels is key in successfully achieving Net Zero. It is clear that 'doing nothing' will not provide any contribution to these needs and identified future growth.

4.3.1.5 The 'do nothing' scenario would also hinder security of supply efforts and ignore the clear and urgent need for large scale offshore wind farm development within the UK. The importance of energy security and affordability mean that all viable offshore wind farm projects should be considered for development. Doing nothing would hinder the ambitions set out in the BESS (HM Government, 2022).

4.3.1.6 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 the 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.

4.3.1.7 Therefore, the 'do nothing' option is discounted as an alternative solution to the Project as it would not meet any of the Project objectives (1 to 6) as summarised in **Table 4.2**.

Table 4.2 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 export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
Do nothing scenario	No - would not contribute towards the Scottish Governments updated offshore wind ambition of 40GW of new deployment.	No - would not contribute to increasing energy security.	No - the seabed would remain underutilised, missing synergy opportunities.	No - would hinder the ability of the floating offshore wind supply chain to scale up within the region.	No - would not advance FLOW technology or cost reduction.	No - would not provide job creation, community benefit or regional economic uplift.	Yes	Yes	Yes	The 'do-nothing' scenario does not meet any of the Project objectives and therefore is not considered an alternative solution.

4.4 No alternative solutions: Step 3 – identify feasible alternative solutions

4.4.1 Scope of alternatives considered

4.4.1.1 The scope of the alternatives considered in this Section has been informed by recent offshore wind farm derogation cases, guidance and decisions made by the Secretary of State (SoS) and Scottish Ministers as discussed in **Section 2.3**. Consistent with the thirteen UK offshore wind farm HRA decisions to date, the consideration of feasible alternative solutions is limited to alternative offshore wind farm project locations and designs (see **paragraph 4.1.2.1** *et seq.),* non-offshore wind energy generation would not meet any of the Project objectives or support the offshore wind farm and renewables Scottish or UK Government policy aims indicated in **Chapter 3**. Therefore, the scope of consideration for alternatives is as follows:

- Alternative offshore wind farm array locations, including:
  - locations outside the UK REZ;
  - locations within the UK REZ, outside of Scottish waters;
  - other locations within Scottish waters; and
  - other locations within ScotWind Leasing and OAA.
- Alternative Project designs, including:
  - increasing / decreasing the size of the developable area/overall number of WTGs;
  - increasing the size of the air gap;
  - alternative foundation design;
  - reducing rotor size/swept area; and
  - considering alternative operative protocols.

4.4.1.2 Each of these options is considered in turn below, in the context of the core objectives of the Project and with regards to their technical, financial and legal feasibility.

4.4.2 Alternative OAA locations

Locations outside of the UK REZ

4.4.2.1 Alternative locations outside of the UK REZ do not deliver on the following Project objectives (see **Section 4.2**), to support UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation (objective 1), to increase security of supply for Scottish and UK consumers by being one of the largest floating offshore wind farm projects in Scottish waters (objective 2), to support the realisation of Scotland's deep-water potential and maximise use of available seabed with other users (objective 3), to support and secure the development of the Scottish supply chain development (objective 4), to drive technological innovation with the aim of lowering the costs to Scottish and UK consumers (objective 5) and to support socio-economic growth in Scotland (objective 6).

4.4.2.2 The UK has domestic statutory obligations and targets in relation to carbon emission reductions (see **Section 3.3.2**) and other International and EU countries similarly have their own legally binding targets through The Paris Agreement or other legal policy. It has been confirmed by the Scottish and UK Governments that sites outside of the UK are not available for a contribution towards Scottish or UK targets as those countries need that available space to maximise their own renewable energy resource and meet their own climate change or renewable energy obligations.

4.4.2.3 For example, in the HRA for Rampion 2 (DESNZ, 2025b) the SoS stated:

"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."

4.4.2.4 Scottish Ministers in the Green Volt Offshore Wind Farm Derogation Case (Scottish Government, 2024b) further considered that alternative locations outside of Scottish territorial waters are not an alternative for projects within its Scottish waters:

"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."

4.4.2.5 It is considered that any location outside the UK REZ would fail to meet Project objectives 1 and 2, as the development would not contribute to UK or Scottish offshore wind targets, nor enhance energy security for UK consumers. Furthermore, such a location would not support objectives 3, 4, 5 and 6, as it would not utilise Scotland's deep-water potential, engage the Scottish supply chain, drive UK-based technological innovation, or deliver socio-economic benefits within Scotland and the wider UK.

4.4.2.6 Therefore, locations outside of the REZ are discounted as a feasible solution for failing to achieve all of the Project objectives described in **Table 4.1**.

Locations within UK REZ but outside of Scottish waters

4.4.2.7 As stated above, the Scottish Minister stated within the derogation case for Green Volt Offshore Wind Farm (Scottish Government 2024b), West of Orkney Offshore Wind Farm (Scottish Government 2025c), Salamander Offshore Wind Farm (Scottish Government 2025d) and Berwick Bank Offshore Wind Farm (Scottish Government 2025e) 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 solution to the Project.

4.4.2.8 Locations in other devolved nations within the UK do not deliver on the Scottish Government's commitments to Net Zero (as per objective 1). Locations identified by The Crown Estate in prior leasing rounds are also already under exclusivity agreements to other offshore wind developers. These locations are not legally available and do not constitute feasible alternatives.

4.4.2.9 Furthermore, EN-3 highlights the need to maximise capacity to deliver UK wide decarbonisation and Net Zero targets. All sites with the potential for use for offshore wind need to be developed, and therefore not developing one, such as the MarramWind Offshore Wind Farm, to instead use a different leasing site would result in a reduction in wind utilisation.

4.4.2.10 It is considered that any location within the UK REZ but outside Scottish waters would partially fail to meet Project objectives 2, 3, 4, and 6, as it would not directly support Scottish energy security, the utilisation of Scotland's deep-water potential, the development of the Scottish supply chain, or the delivery of socio-economic benefits within Scotland. While such locations may contribute to UK-wide targets (objective 1) and innovation (objective 5), they would not fully align with the strategic aims of the Project in a Scottish context.

Location within Scottish waters

4.4.2.11 Consideration of other locations in Scottish waters as an alternative solution to the proposed location for the Project are considered below.

4.4.2.12 Locations outside of the established leasing rounds and Draft Updated Sectoral Marine Plan (Scottish Government, 2025a) within Scotland are not legally, technically or commercially available to the Applicant and they would be subject to a new leasing round prior to being available to the Applicant, no other leasing rounds are currently planned for Scottish waters There were 15 Plan Option Areas within the ScotWind leasing round in addition to INTOG sites, with the Applicant securing development rights to NE7. All of these sites, within the original SMP and the current draft updated SMP have been subject to strategic level HRAs. The purpose of the remaining ScotWind and INTOG projects is to provide additional capacity towards Scottish and UK renewables and offshore wind targets. However, it is considered that substantially more offshore wind capacity is required in Scotland to meet Net Zero and decarbonisation targets, and therefore Project objective 1. Therefore, other ScotWind and INTOG projects are not a suitable alternative as all are required and needed. Furthermore, it is also considered that given the wide foraging range of seabird species associated with SPAs in Scotland, other project locations will also have connectivity with the NSN and therefore may not have a reduced impact on those sites.

4.4.2.13 Even if other areas were legally available to the Applicant, they would also need to possess the environmental, geotechnical and geophysical datasets to allow acceleration of the site development activities to meet phase one of the Project's 2037 anticipated fully operational timeline and it would need to have suitable connection to the UK grid. This is not technically or commercially feasible and so would lead to delays in the delivery of the Project.

4.4.2.14 Future offshore wind farm development is also not an alternative solution and CES has not indicated its intention to hold any future leasing rounds in the short-term. Whilst future leasing rounds may be available at some point, there is no sight of when these potential leasing rounds may occur in the short-term and so they will not meet Project objectives. The draft SMP-OWE (Scottish Government, 2025b) proposes the allocation of 1GW capacity for Testing and Development projects to consider future demand. However, they are not of a sufficient capacity or location to deliver on any of the Project objectives to the same degree, nor is the any active plan for developing this as a new leasing round at this point. Furthermore, any such projects would not necessarily represent alternative solutions with less damaging ecological impacts, and they will not maximise the identified opportunity within NE7. The huge scale of Scottish and UK targets for decarbonisation by 2045 and 2050 respectively and the current operational capacity achieved to date (14.7GW) mean that any lost capacity cannot necessarily be offset by any future leasing rounds.

Conclusions

4.4.2.15 **Table 4.3** below presents the conclusions for each alternative location with respect to the objectives of the Project.

Table 4.3 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 export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
Alternative locations outside of UK REZ	No - it does not contribute to UK/Scottish renewable energy targets and the ambition of 40GW offshore wind deployment by 2035- 2040.	No - electricity generated outside the UK REZ cannot be guaranteed to feed into the UK grid in a secure, reliable, or strategic manner. This undermines the Project's ability to enhance energy security for Scottish and UK consumers, particularly as one of the largest floating offshore wind farm projects intended for Scottish waters.	No - development outside the UK REZ does not utilise Scotland's deep-water offshore wind potential or contribute to strategic seabed use in coordination with other Scottish marine sectors. This undermines the opportunity to optimise national marine resources and spatial planning within Scottish waters.	No - development outside the UK REZ is unlikely to engage or benefit the Scottish supply chain. Procurement, fabrication, and servicing activities would likely be based in the host country or region, limiting opportunities for Scottish businesses and workforce participation in the Project.	No - projects located outside the UK REZ are less likely to contribute to UK-specific technological advancement or deliver cost reductions for Scottish and UK consumers.	No - socio-economic benefits such as job creation, community investment, and regional development would be realised outside Scotland and the UK. This limits the potential for local employment, infrastructure growth, and economic uplift that the Project is intended to deliver within the Scottish context.	Not assessed as not a feasible alternative solution.	No	Not assessed as not a feasible alternative solution.	Locations outside of the UK REZ are not feasible alternative solutions, as they fail to meet all of the Project objectives, particularly those relating to UK and Scottish energy policy, supply chain development, and socio-economic benefit. While technically and financially feasible, such locations are not considered legally feasible under UK marine planning frameworks. They are therefore not considered a viable alternative solution.

Alternative solution	Does it meet the Project objectives?						Is it financially feasible?	Is it legally feasible?	Is it technically feasible?	Conclusion
	1. To export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
Locations within the UK REZ but outside Scottish waters	Partially - such locations may contribute to UK-wide offshore wind generation and Net Zero targets. However, they do not support the Scottish Government's specific ambition of 40GW offshore wind deployment by 2035–2040 and therefore fall short of fully meeting objective 1.	Partially - such locations may contribute to UK-wide energy supply. However, they do not directly enhance energy security for Scottish consumers or support Scotland's ambition to host one of the largest floating offshore wind farm projects in its own waters.	No - these locations do not utilise Scotland's deep-water offshore wind potential or contribute to the strategic use of Scottish seabed resources.	Potentially - projects located outside Scottish waters are less likely to directly engage or benefit the Scottish supply chain. While some indirect opportunities may arise, the scale and focus of supply chain development would likely shift to other regions.	Partially - projects in other parts of the UK REZ may contribute to technological innovation and cost reduction at a national level. However, they may not fully support innovation pathways specific to Scotland's deep-water FLOW potential.	No - socio-economic benefits such as job creation, community investment, and regional development would be concentrated outside Scotland. While there may be UK-wide economic gains, the direct benefits to Scottish communities and the local economy would be significantly reduced compared to a development located within Scottish waters.	Not assessed as not a feasible alternative solution.	No	Not assessed as not a feasible alternative solution.	Locations within the UK REZ but outside Scottish waters are not feasible alternative solutions, as they do not meet several key Project objectives, particularly those specific to Scotland's energy security, seabed use, supply chain, and socio-economic benefit. Although legally feasible under UK frameworks, they do not fully align with the strategic aims of the Project in a Scottish context. They are therefore not considered a viable alternative solution.
Locations within Scottish waters	Yes - locations within Scottish waters are well-positioned to	Yes - developments within Scottish waters enhance	Yes - Scottish waters offer significant deep-water potential	Yes - projects located within Scottish waters are more likely to	Yes - floating offshore wind projects in Scottish waters promote	Yes - developments within Scottish waters generate	Not assessed as not a feasible alternative solution.	No	Not Assessed as not a feasible alternative solution.	Although locations within Scottish waters may meet the Project

Alternative solution	Does it meet the Project objectives?						Is it financially feasible?	Is it legally feasible?	Is it technically feasible?	Conclusion
	1. To export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
	export significant volumes of renewable electricity to the National Grid. This directly supports UK and Scottish Government targets for Net Zero emissions and offshore wind generation, including a meaningful contribution to Scotland's ambition of 40GW offshore wind deployment by 2035–2040.	domestic energy generation capacity, contributing directly to the security of supply for both Scottish and UK consumers.	suitable for floating offshore wind. Development in these areas enables optimal use of available seabed in coordination with other marine users, supporting sustainable marine spatial planning.	engage local suppliers, ports, and workforce. This supports the growth and resilience of the Scottish supply chain, delivering long-term economic and industrial benefits.	innovation in deep-water technologies, infrastructure, and operations. These advancements contribute to reducing costs and improving efficiency for Scottish and UK consumers.	substantial socio-economic benefits, including job creation, skills development, community investment, and regional economic uplift across Scotland.				objectives, it is not considered legally feasible. It is therefore not considered as an alternative solution.

4.4.3 Alternative design solutions for the Project

4.4.3.1 Since the submission of the Scoping Report (MarramWind Ltd., 2023), several design refinements have been made to the design envelope for infrastructure components within the OAA, as presented within **Volume 1, Chapter 3: Site Selection and Consideration of Alternatives** of the **EIA Report**. These changes and design decisions reflect the evolving understanding of site-specific conditions, stakeholder feedback, and continued design progression.

4.4.3.2 The key refinements represent a narrowing of options in response to new data, feasibility assessments, and environmental considerations. The identification and selection of the Project's components have been shaped by an iterative site selection and design process. This process recognises that the selection of individual components - such as turbine layout, foundation type, and cable routing - are inherently interdependent. As such, decisions were not made in isolation; rather, each component was considered in the context of the overall design to ensure technical compatibility, environmental sensitivity, and alignment with Project objectives.

4.4.3.3 Alternative solutions for the Project are ones that the Applicant can have confidence are technically proven and available to procure at the point of construction. This critically also includes the technical feasibility of integration of different elements of the Project together (e.g. the floating unit with the chosen WTG design).A range of alternative design solutions have been considered to understand if they represent an alternative solution for the Project that could lead to a reduction in impacts. Each of these are considered below in turn.

Number of wind turbine generators

4.4.3.4 A reduction in the maximum number of wind turbines from the proposed maximum of 225 to be deployed would directly reduce the generation capacity of the Project as a whole. The current proposed maximum number of turbines represents the number of turbines required to deliver the required capacity based on current supply chain availability and available technology.

4.4.3.5 The maximum of 225 WTGs relates to a design scenario using 14MW WTGs. The EIA has also considered an alternate scenario that proposes a maximum of 126 WTGs with a design scenario using larger 25MW WTGs. This second scenario represents the maximum characteristics of turbine models that are expected to be available at the time of procurement.

4.4.3.6 Consideration of future technology as a method of further reducing the number WTGs required to achieve the required capacity is not considered a viable alternative at this point and it would put the construction timeline at risk putting Project objective 1, 2 and 3 at risk, whilst potentially not being financially viable. As highlighted within EN-3, a reduction in capacity is not suitable, and all project must maximise capacity where possible to ensure Net Zero and De-carbonisation targets are met.

Air gap

4.4.3.7 In the UK, the minimum air gap permissible between the blade tip and mean sea level is 22m in accordance with statutory requirements. Since the Scoping stage, supply chain analysis and investigations for the procurement of the Project has concluded that the maximum WTG air gap for technology available and financially feasible for the Project is 22m. The floating WTG supply chain has not developed as quickly as anticipated since the Project's Scoping stage, which has resulted in a requirement to reduce the air gap from 24m to 22m. It is considered that committing to an air gap higher than 22m at this time may

put the delivery of the Project within the needed timeframes at significant risk, potentially resulting in Project objective 1 not being achieved.

4.4.3.8 Technical considerations for constructing a WTG with a 24m air gap has resulted in significant uncertainty around their deliverability, consideration of the scale of the Project and lack of a reliably developed supply chain within Scotland to provide the supply within the needed timescale. Therefore, maximum flexibility in the design is required to ensure that the Project is deliverable within a suitable timescale.

4.4.3.9 No alternatives are available whilst achieving the Project objectives whilst being technically feasible from a supply chain perspective. Further details around the Supply Chain analysis carried out which support the conclusion that a 24m air gap is no longer feasible, are presented in **Appendix B: WTG Air Gap Supporting Note**.

Alternative foundations

4.4.3.10 During the OAA site selection stage, consideration was given to sites that had ground conditions and water depths suitable for floating units or fixed base foundations. Water depths exceeding 60m were considered only suitable for floating units, and the area available at specific water depth ranges needed to be sufficiently large to enable a commercially viable project. Based upon the commercial and development objectives of the Applicant, this led to a focus on floating technology only for the Project, with fixed base foundations excluded for the WTGs. Different floating foundation types are not considered alternatives for this Project as they would not result in a significant or material reduction to the potential for AEoSI.

Size of the rotors / swept area

4.4.3.11 Size of rotor / swept area is considered directly in relation to number of WTGs above. A reduction in the size of the rotors would result in reduced generation capacity, which would conclude in the Project failing to achieve Project objective 1 and put the Project's financial viability at risk.

4.4.3.12 An increase in the number of WTGs would be required to offset the reduction in generation as an alternative. However that would result in an increase in impact on ornithological receptors. Therefore, reduction in the size of the rotors / swept area is not considered a feasible or viable alternative.

Conclusions

4.4.3.13 None of the potential alternative design options for the Project considered above are considered financially or technically feasible, or they fail to meet the Project objectives for the reasons provided.

4.4.3.14 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, and optimisation within identified environmental and technical constraints is imperative and necessary to meet legally binding targets for decarbonisation.

4.4.3.15 Policy EN-1, to which the Scottish Ministers have regard for the Green Volt, West of Orkney, Berwick Bank and Salamander Offshore Wind Farm derogation case decisions, confirms that "*the existence of another way of developing the proposed project which results in a significantly lower generation capacity is unlikely to meet the objectives and therefore be treated as an alternative solution*."

4.4.3.16 **Table 4.4** below presents the conclusions for each alternative design solutions with respect to the Project objectives.

Table 4.4 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 export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
Overall number of WTGs	No - Modifying the size of the developable area or reducing the number of WTGs would not deliver capacity requirements and therefore not meet objective 1 and would undermine the Project's strategic value in helping achieve national and Scottish offshore wind deployment targets.	Partially - Modifying the size of the developable area or reducing the number of WTGs would partially meet objective 2 but would reduce the overall contribution to energy security. A smaller project would deliver less capacity and resilience to the grid, undermining its role as one of the largest FLOW projects in Scottish waters.	No - Reducing the developable area would fail to meet objective 3 as it would limit the full utilisation of Scotland's deep-water seabed potential. It would also reduce the opportunity to demonstrate effective co-use with other marine stakeholders at scale.	Partially - A smaller project would partially meet objective 4 but would reduce the scale and duration of supply chain engagement. Fewer WTGs and reduced infrastructure demand would limit opportunities for fabrication, assembly, and logistics within Scotland.	Partially - Modifying the project scale would partially meet objective 5, but reduced economies of scale may hinder cost reductions. Larger projects enable more efficient deployment of innovative floating technologies and infrastructure, which in turn helps lower long-term costs to consumers.	Partially - Would ensure that long-term employment and economic benefit is secured in Scotland but if less capacity is provided then reduced economies of scale might not provide the most benefit to the economy.	Potentially not – reducing the number of WTGs would potentially have an impact on the commercial viability of the project.	Yes	Yes	Modifications to the size of the developable area and number of WTGs does not meet all of the Project objectives and is also not potentially not financially feasible.
Increased air gap	Partially – Due to supply chain constraints and market immaturity around floating wind supply, committing to	Yes - Increase the minimum air gap would not result in an impact on the objective.	Yes - Increase the minimum air gap would not result in an impact on the objective.	Partially - Increase the minimum air gap would result in the potential need for the Applicant to look elsewhere for supply due to	Partially - Increase the minimum air gap would result in the potential need for the Applicant to look elsewhere for supply due to	Partially - Increase the minimum air gap would result in the potential need for the Applicant to look elsewhere for supply due to	No – The potential increase in cost associated with increasing the height of the air gap would put the financial viability of	Yes - there is no legal reason preventing the air gap from being raised.	No – Due to the immaturity of the floating wind supply chain, alternative models that would enable a higher air gap are	Although raising the air gap does not prevent the achievement of the majority of the project objectives, due to financial and

Alternative solution	Does it meet the Project objectives?						Is it financially feasible?	Is it legally feasible?	Is it technically feasible?	Conclusion
	1. To export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
	increasing the air gap at this point may put the delivery timeframe at significant risk, resulting in not contributing to Scotland's ambitious targets. Therefore, maximum flexibility in design at this time is required to be able to deliver within a suitable timeframe.			constraints related to increasing the air gap.	constraints related to increasing the air gap.	constraints related to increasing the air gap.	the Project at significant risk.		not available, and would potentially result in a significant delay in the delivery of the project. Maximum flexibility in design is required at this time to be able to deliver the Project within a suitable timeframe to achieve Project objective 1.	supply chain constraints it is not technically nor financially feasible, whilst potentially preventing the achievement of Project objective 1, and is therefore not considered a viable alternative.
Foundation design	No -fixed foundation technology does not meet objective 1 as the available seabed within the selected site lacks suitable shallow water conditions and area to support a commercially viable fixed-base project. Therefore, fixed foundations were excluded	No - fixed foundations do not meet objective 2, as the site lacks suitable shallow water areas to support a commercially viable fixed-base project, limiting its ability to deliver comparable energy volumes.	No - fixed foundations do not meet objective 3, as they are restricted to shallower waters and cannot access the deep-water areas identified during site selection.	No - fixed foundations may partially meet objective 4 but are less aligned with Scotland's strategic focus on floating wind and may not stimulate the same level of innovation or regional supply chain development.	No - fixed foundations do not meet objective 5, as they are not viable for the selected site and would not advance floating wind technologies needed for Scotland's offshore wind future.	No - fixed foundations do not meet objective 6, as they are not feasible for the site and would not deliver the same scale of socio-economic benefit.	No - Fixed base foundations are generally more cost-effective in shallow waters, but their costs increase significantly with depth due to larger structures, more complex installation, and higher material demands. In contrast, floating foundations offer	Yes - There are no legal barriers to using fixed base foundations in UK waters. Both fixed and floating technologies are permitted under UK marine planning and consenting frameworks, provided they meet environmental, navigational, and	Yes - Fixed base foundations are technically feasible, particularly in shallower waters (<60m). In this case, the predominance of water depths >60m across the selected site made fixed base solutions less technically optimal, especially considering seabed	While fixed base foundation technology is legally, and financially feasible in general, it was not technically suitable for this specific project due to: Predominant water depths exceeding 60m, Limited area at shallower depths

Alternative solution	Does it meet the Project objectives?						Is it financially feasible?	Is it legally feasible?	Is it technically feasible?	Conclusion
	1. To export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
	during site selection, and floating technology was identified as the only feasible solution to meet the Project's scale and strategic objectives.						cost advantages in deeper waters by simplifying installation and enabling access to better wind resources. Given the depth profile and spatial constraints of the selected site, floating technology was deemed more financially viable for the Project.	spatial planning requirements. Thus, fixed base foundations are legally feasible but were not pursued due to site-specific and commercial considerations.	conditions and installation logistics.	for commercial scale, Alignment with the Project objectives.
Size of the rotors / swept area	No - Reducing the size of rotor / swept area would not deliver the capacity required and therefore not meet objective 1and would undermine the Project's strategic value in helping achieve national and Scottish offshore wind deployment targets.	No - Reducing the size of rotor / swept area would not deliver the capacity required and therefore would not meet objective 2 and would reduce the overall contribution to energy security. A smaller project would deliver less capacity and resilience to the grid, undermining	Partially - Reducing size of rotor/swept area would partially meet objective 3 but would limit the efficient utilisation of Scotland's deep-water seabed potential.	Yes - Use of smaller rotors would not impact the use of local supply chain and therefore would not impact objective 4. However, it would reduce the profitability of supply chain engagement.	Partially - Modifying the size of the rotors and therefore the generation capacity would partially meet objective 5, but reduced economies of scale may hinder cost reductions. Higher generation projects enable more efficient deployment of innovative floating	Partially - Would ensure that long-term employment and economic benefit is secured in Scotland but if less capacity is provided then reduced economies of scale might not provide the most benefit to the economy.	No - a smaller sized rotor is not financially feasible.	Yes - There is no legal requirement to use a set size of rotor.	Yes - The design options do exist and function.	Whilst technically and legally feasible, the reduction in generation capacity would result in the Project potentially no longer being financially feasible whilst not achieving Project objectives 1, 2 and 3.

Alternative solution	Does it meet the Project objectives?						Is it financially feasible?	Is it legally feasible?	Is it technically feasible?	Conclusion
	1. To export a significant renewable electricity to the National Grid in support of UK and Scottish Government targets, ambitions and commitments for Net Zero emissions and offshore wind generation, including a contribution to Scotland's ambition of 40GW offshore wind deployment by 2034-2040.	**2. Increase security of supply for Scottish and UK consumers by being one of the largest FLOW projects in Scottish waters.**	**3. Support the realisation of Scotland's deep-water potential and maximise the use of available seabed in synergy with other users.**	**4. Support and secure the development of the Scottish supply chain by being one of the largest FLOW projects in Scottish waters.**	**5. Drive technological innovation with the aim of lowering the costs to Scottish and UK consumers.**	**6. Socio-economic benefit.**				
		its role as one of the largest FLOW projects in Scottish waters.			technologies and infrastructure, which in turn helps lower long-term costs to consumers.					

4.5 Summary of alternative solutions

4.5.1.1 The evidence presented within this Section objectively illustrates the absence of feasible alternative solutions to the Project. A comprehensive design process has been undertaken for the Project, which has continued to evolve until reaching the final design presented within this application.

4.5.1.2 The consideration of alternative solutions has been approached proportionately, in relation to the genuine Project objectives and need of the development. All potential alternatives (as advised by guidance) have been identified and assessed, with no feasible alternative.

4.5.1.3 A summary of the conclusions is presented in **Table 4.5**.

Table 4.5 Summary of potential alternatives

Potential alternative	Summary of potential alternatives
Do nothing scenario	The 'do nothing' scenario does not fulfil the need of the Project as it fails to meet any of the Project objectives 1 to 6 and therefore is not considered an alternative solution.
Alternative locations outside of UK REZ	Locations outside of the UK are not feasible alternatives because they do not fulfil the need of the Project by failing to meet any of the Project objectives 1 to 6 and are not legally feasible, therefore it is not an alternative solution.
Locations within the UK REZ but outside Scottish waters	Locations within the UK REZ but outside Scottish waters do not meet key objectives of the Project, specifically objectives 2, 3, 4, and 6, which relate to Scotland's energy security, seabed use, supply chain development, and socio-economic benefits specific to Scotland.
Locations within Scottish waters	While locations within Scottish Waters may meet the Project objectives 1 to 6, the legal and consenting framework does not support developments outside of existing lease areas and existing lease areas are already under Exclusivity Agreements with other developers and so are not available to the Applicant. They are therefore not legally feasible and not considered an alternative solution to the Project.
Alternative designs	None of the alternative designs are considered an alternative solution as they either fail to fully meet the Project objectives 1 to 6, result in increased ecological impacts or are not optimal solutions and are not technically or financially feasible for the Applicant. The evolution of the Project design reflects the most optimum design to balance environmental, economic and technical constraints. There are no other alternative design solutions.

5. Imperative Reasons for Overriding Public Interest (IROPI)

5.1 Approach to the assessment of IROPI

5.1.1 Overview

5.1.1.1 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. This is validated within Regulation 64[4] of the Habitats Regulations 2017 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."*

5.1.1.2 The consideration of IROPI requires a balance between preserving the conservation objectives of European sites and the UK's NSN as a whole based on the adverse effects from the Project, and the benefits provided by the Project. For the Project to be consented, the Competent Authority must be confident that the public benefits from the Project override any residual predicted adverse effects on the NSN.

5.1.2 Content and structure

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

- Step 1: Imperative Reasons – demonstrating how the plan or project is 'required' and that it is important that the plan or project proceeds;
- Step 2: Public Interest – illustrating the public benefit served by the plan or project in addition to the private interest;
- Step 3: Long-term interest – establishing the long-term nature of the plan or projects benefits; and
- Step 4: Overriding – weighing the public interest against the potential impacts of the Project to ensure that they must demonstrably outweigh the potential harm to the site.

[4] Equivalent regulation is Regulation 29 in The Conservation of Offshore Marine Habitats and Species Regulations 2017 and Regulation 49 in The Conservation (Natural Habitats, &c.) Regulations 1994.

5.2 IROPI Case: Step 1 – imperative reasons

5.2.1 Introduction

5.2.1.1 The imperative reasons that justify the Project are all based around the needs case, as summarised in **Chapter 3** of this Derogation Case, 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. Economic and social benefits form the other strand contained within guidance for establishing IROPI, as there are no priority features impacted by the Project, therefore the IROPI reasons consider human health, public safety, beneficial consequences of primary importance to the environment as well as other factors such as societal and economic factors, these are all discussed below.

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

Human health

5.2.2.1 As described within **Section 3.3**, climate change is a significant risk to human health globally. 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, any delay in concerted global action will result in the loss of a 'liveable' future. 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 water resources and agricultural systems, threatening citizens of Scotland and the UK. With consideration of the significant threat that climate changes pose to the UK, Scotland and the globe, there is an urgent need to bring forward substantial volumes of renewable generation capacity as quickly as possible to urgently decarbonise the national grid.

5.2.2.2 The scale of decarbonisation within Scotland is established within the draft Energy Strategy and Just Transition Plan (Scottish Government, 2023b) though it is widely accepted that the need for reduction in GHG emissions is greater than just the established targets, with there being a need to go above and beyond the national targets to try and counter climate change as quickly as possible.

5.2.2.3 The Scottish Government has a statutory commitment under the Climate Change (Emission's Reductions Targets) (Scotland) Act 2024 to reduce GHG emissions to Net Zero by 2045, whilst the UK Government in the Clean Power 2030 Action Plan (DESNZ 2024a) has set an ambition to transition to 95% clean energy across the UK by 2030.

5.2.2.4 Fundamental to the protection of the environment, including changes affecting marine and terrestrial ecosystems, flood risk, food security, coastal processes and climate is reducing GHG and limiting climate change as much as possible. This Project will directly contribute towards the targets designed to protect the environment and human health.

Public safety

5.2.2.5 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 3.5**), it is considered that security of supply

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

5.2.2.6 As stated in the BESS (HM Government, 2022), this need for increased UK supply has been evidenced by Russia's invasion on Ukraine, which resulted in a significant increase in the price of imported gas and coal (over 200% and 100% in 2021 respectively) and the electricity price cap increase by over £1300 in a year, peaking at £2,000 (OFGEM, 2024). The BESS 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."

5.2.2.7 Also highlighted in Clean Power 2030 (DESNZ 2024a):

"In an era of heightened geopolitical risk, switching fossil fuelled generation for homegrown clean energy from renewables and other clean technologies offers us a security that fossil fuels simple cannot provide."

5.2.2.8 It is clear there is an urgent need for electricity sources that are UK based and not reliant on imports of fossil fuels. This will help to protect consumers from rapid fluctuations in energy process which impacts their quality of life, as well as increasing our predictability of supply. By building a diverse energy system using the UK's abundant natural resources can help to protect consumers from future price fluctuations. For additional context please see **Section 3.6**.

5.2.2.9 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.

Beneficial consequences of primary importance to the environment

5.2.2.10 The impacts of climate change on the environment are not limited to human impacts, the impact of increasing global temperatures above the suggested 1.5°C would 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, and marine species, habitats, fisheries and seabirds.

5.2.2.11 The Scottish Seabird Vulnerability Report (Scottish Government, 2024f) highlighted:

"Climate change is a major driver of global biodiversity loss (IPBES, 2019) and poses a significant threat to seabirds. While there has been considerable research on its impacts, the effects of climate change are complex and often indirect and operate at the ecosystem level making them hard to distinguish from other pressures (Burton et al, 2023, Johnston et al. 2021, Mitchell et al. 2020)."

5.2.2.12 Given the qualifying features for which this Derogation Case is provided are all seabirds, they will be affected by direct and indirect effects of climate change and when considering all development proposals significant weight will be given to the global climate and nature crises under NPF4 Policy 1 (Scottish Government, 2023a), the impacts of climate change on seabirds species are highlighted in the section below.

Direct impacts of climate change on bird species (The Scottish Seabird Vulnerability Report, 2024):

5.2.2.13 Climate change can cause the following direct impacts on seabirds:

- Exposure to extreme weather conditions. Severe weather can disrupt foraging, lead to poor body condition, and cause mass mortality events (e.g., Fullick *et al.,* 2022; Morley *et al.,* 2016).
- Warming seas have been linked to lower breeding success in species such as guillemot and kittiwakes (Burton *et al.,* 2023).
- High winds increase energy expenditure during flight and foraging (Daunt *et al.,* 2006; Frederiksen *et al.,* 2008).
- Heavy rainfall and flooding during nesting can chill eggs, kill nestlings, and cause breeding failures (Aebischer, 1993).
- Warmer air temperatures as a result of climate change are an important additional stressor on seabirds (Jeglinski *et al.,*2024). As temperatures warm, parents may increasingly need to trade-off offspring protection and provisioning against their own thermoregulatory needs. For example, studies showed parental nest attendance decreased with rising air temperatures, increasing breeding failure in common guillemots (*Uria aalge*) because abandoned chicks died of heat stress or predation (Olin *et al.,* 2024).
- Rising sea levels threaten breeding sites for shore-nesting species like terns (Ivajnšič *et al.,* 2017).
- Seabirds are also vulnerable to extreme heat, which can affect both them and their food sources (Choy *et al.,* 2021; Piatt *et al.,* 2020).

5.2.2.14 These global impacts compound local threats, reducing species' ability to adapt (MCCIP, 2020).

Indirect impacts of climate change on bird species (The Scottish Seabird Vulnerability Report, 2024f)

5.2.2.15 Climate change can cause the following indirect impacts on seabirds:

- Changing the distribution and availability of fish prey (Daunt and Mitchell, 2013, Johnstown *et al.,* 2013, Pearce Higgins, 2021) through rising sea temperatures. Rising sea temperatures reduce phytoplankton, affecting the food chain and seabirds (Heath *et al.,* 2012) and warming seas has altered sandeel distribution (OSPAR, 2017) and may shift fish species like sprat northward (Kjesbu et al., 2022).
- Changes in timing of peak prey availability and high energy demands of seabirds due to rising temperatures may disrupt their synchronisation and lead to 'trophic mismatches' (Keoghan *et al*., 2021, 2018).
- Climate change is predicted to cause an increase in ocean acidification and toxic algal blooms, which pose a threat to seabirds (Casero *et al.,* 2022).

Scottish seabirds evidence of climate change impacts

5.2.2.16 The latest seabird census, shows that nearly two thirds of Scotland's breeding seabird species have declined over twenty years (Joint Nature Conservation Council (JNCC), 2023 and Royal Society for the Protection of Birds (RSPB), 2023). One of the key 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).

5.2.2.17 One of the most notable climate related impacts to seabird prey species are 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.

5.2.2.18 It is clear that climate change will provide a significant threat to the populations of seabirds in Scotland and the UK and therefore reducing climate change through implementing the immediate, rapid, and large-scale decarbonisation of the UK's energy supply is one of the established ways of preventing climate change from worsening and therefore resulting in beneficial consequences to the environment.

Summary

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

5.2.3 Economic and social benefits

5.2.3.1 The socio-economic effects of the Project are considered to be beneficial, as concluded in **Volume 1, Chapter 30: Socio-economics** of the **EIA Report**.

5.2.3.2 While socio-economic benefits are not a primary factor in the Derogation Case for the Project, it is still an important factor to consider within the overall balance of the Project.

5.2.3.3 For the Project, the level of gross value added (GVA, which is an economic measure of the contribution of entities to the economy, sector or region), from the construction and operational Project employment projections is an average of £66.0 million annually over the construction stage rising to and remaining at £95.4 million annually as the proportion of operational jobs rises with the installation of more WTGs, with a peak employment of up to 1,490 jobs in Scotland. In the operation and maintenance (O&M) stage, the Project will provide a peak employment of 1,065 jobs until decommissioning.

5.2.3.4 Throughout the whole lifecycle of the Project, there will be a significant socio-economic benefit to both Scotland and the UK. This is greatest during the construction stage through job generation and supply chain. However, the operational stage still provides additional input to the economy of Scotland and the UK.

5.2.3.5 The Project has some key socio-economic benefits including job creation, both directly during the construction, O&M and decommissioning stages and indirectly through the supply chain for manufacturing, transport and services to the Project. It will also create some induced employment benefits through spending by workers in the local economy boosting demand for products and suppliers.

5.2.3.6 MarramWind Ltd has developed a Supply Chain Development Statement (MarramWind Ltd, 2023) that establishes commitments to support businesses and suppliers in Scotland. The Project will lead to an enhancement of the supply chain through increased demand for Scottish and UK based suppliers for components, port services and logistics over the 12-year construction stage and beyond throughout the lifetime of the Project, which enhances the potential for growth in specialist sectors such as fabrication and assembly and maintenance services. The phased 12-year construction stage will also provide security in the supply chain to help drive technological evolution and refinement of WTG and foundation design. The Project also highlights, in **Volume 1, Chapter 30: Socio-economics** of the **EIA Report,** opportunities for training and re-skilling of local workforce to participation in offshore wind roles and partnerships with education facilities to build long

term skills capacity. These benefits all support the aims of the Scottish Governments Draft Energy Strategy and Just Transition Plan that aims to maximise benefits to Scotland's economy, businesses and workers and maximise supply chain opportunities and support the transition of jobs in the oil and gas sector to jobs in the renewable energy sector.

5.2.3.7 There is potential for residual adverse minor impacts during the construction stage, and moderate adverse impacts from the O&M stage of the Project, resulting from population change (based on the conclusions within **Volume 1, Chapter 30: Socio-economics** of the **EIA Report)**, such as pressure on housing and services caused by the workforce / employment associated with the Project. However, these are not considered significant, population growth in the Highlands region and the North of Scotland is a strategic goal of the Scottish Government (Scottish Government, 2024e). In the long term, developments such as the Project are likely to result in improved housing availability as rural areas where large developments are taking place become more attractive to developers with an increase in demand from working-age people.

5.2.3.8 Furthermore, given the overlap in skill sets required between the O&G sector, and the offshore renewables sector and the likely decline in O&G employment in the North of Scotland, it is likely that many of the people who will be employed during the O&M stage will be those who had previously worked in the O&G sector and are not new to the area. This is highly beneficial and highlights the importance of projects like this in supporting the aims of the Scottish Government's draft Energy Security Strategy and Just Transition Plan (Scottish Government, 2023b), which states:

"Irrespective of the climate imperative, as an already established mature basin in gradual decline, planning for a just transition to our Net Zero energy system and securing alternative employment and economic opportunities for workers is essential if Scotland is to avoid repeating the damage done by the deindustrialisation of central belt communities in the 1980s, and to fully capitalise on our potential as a location for low carbon and renewable energy expertise."

5.2.3.9 A priority of the National Planning Framework 4 (North East) (Scottish Government, 2023a), focussing on Aberdeen City and Aberdeenshire is to deliver sustainable places, the policy states 'Regional Spatial Strategies and Local Development plans should plan infrastructure and investment to support the transition from oil and gas to Net Zero, whilst protecting and enhancing blue and green infrastructure and decarbonising connectivity', the Project will contribute to this aim by providing a continued source of employment in the region and opportunities for retraining and skills enhancement.

5.2.3.10 As noted above, these benefits are material factors in the balancing exercise for this derogation case.

5.3 IROPI Case: Step 2 – public interest

5.3.1.1 As set out in **Chapter 3**, there is a clear public interest in pursuing the domestic policies that seek to reduce climate change such as those discussed in this Derogation Case, which the Project will contribute towards.

5.3.1.2 The Project responds to the combined drivers of the need to increase energy security, reduce GHG emission and increase offshore wind capacity. In this respect, the Project is contributing towards Government-pursued objectives of increased electricity supply in the public interest.

5.3.1.3 The extent of the socio-economic public interest of the Project can be seen when reviewing the current policy context:

- The Modern Industrial Strategy (HM Government, 2025c), sets out the Government's aim to be a global leader in clean energy industries, creating jobs and becoming a world-leading exporter of low-carbon products, service and innovation, In floating offshore wind, the Government wants the UK to leverage its existing expertise in the deployment of floating substructures, including fabrication and mooring and anchoring, gained from the O&G sector.
- The Offshore Wind Policy Statement (Scottish Government, 2020b) sets out ambitions to capitalise on offshore wind development and discusses the role this technology could play in meeting the Net Zero by 2045 target and sets the context for the Sectoral Marine Plan for Offshore Wind. It identifies barriers and opportunities for deployment including supply chain, skills and innovation and cost reduction and established that as much as 11GW of offshore wind capacity is possible through Scottish waters by 2030. The draft Offshore Wind Policy Statement (Scottish Government, 2025b) updates this ambition to up to 40GW by 2040.
- The North Sea Transition Deal (NSTD DESNZ, 2021) is a sector wide deal between the UK Government and the O&G industry that aims to facilitate the decarbonisation of the O&G 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.
- The draft Energy Strategy and Just Transition Plan (Scottish Government, 2023b) sets out a clear vision to capitalise on the opportunities that a Net Zero energy system offers the industry, the climate and local communities / economies through just transition.
- In 2023 the Scottish Government committed £500 million to a new 10-year Just Transition Fund to accelerate the energy transition in Aberdeen and the north-east and establish the region as a world-leader in the transition to a Net Zero economy.
- The Clean Power 2030 Action Plan (DEZNZ, 2024a) highlighted the public interest benefits that clean energy industries like offshore wind can deliver:

  "*With 90% of global GDP covered by Net Zero targets, clean energy industries represent a significant potential growth area. These industries can generate new jobs through domestic manufacturing and services and preserve our Energy Intensive Industries in a decarbonised economy. Additionally, the only way to guarantee our energy security and protect billpayers permanently is to speed up the transition away from fossil fuels and towards homegrown clean energy*."

5.3.1.4 The offshore wind supply chain has immense growth potential, with UK Supply Chain Capability Analysis (Offshore Wind Industry Council (OWIC), 2023) suggesting that the offshore wind supply chain will contribute £92bn GVA to the UK economy by 2040. The '2024 Offshore Wind Industrial Growth Plan' (OWIC, 2024) indicates priority opportunities for UK suppliers to provide global technology leadership in advanced turbine technology; industrialised foundations and substructures, future electrical systems and cables; smart environmental services; and next generation installation and O&M.

5.3.1.5 Based on evidence available across a number of individual studies, Scotland's offshore wind supply chain could support between 10,400 to 54,000 jobs in the coming decades (Scottish Government, 2024d).

5.3.1.6 The Project would play a key role in the larger positive socio-economic impact of offshore wind in the public interest as highlighted within the policy context above. Without the Project it is considered that the urgent need to mitigate climate change would not be adequately managed, and many Scottish and UK legislative policies would not be met. These policies

are implemented with the aim of providing public benefits, and therefore the contribution of the Project to these policies will result in a clear public benefit.

5.4 IROPI Case: Step 3 – long term interest

5.4.1.1 The operational lifetime of the Project is 35 years per phase, therefore the energy supplied by the Project will be of the benefit for the long-term, contributing to the supply past the 2045 Net Zero target.

5.4.1.2 Decarbonisation on the scale required for the UK and Scotland will take a long time to achieve and will continue to increase. Not only is the 2045 Net Zero target within Scotland still over two decades away and inherently a long-term aim, once it is achieved it will be maintained permanently. The targets are designed to result in a system where there is no 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.

5.4.1.3 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.

5.4.1.4 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, O&M of the Project, but the jobs created, infrastructure developed, and the local trades taught will endure into future offshore wind projects, enticing other development opportunities in the region. Furthermore, the development of the area and increase in jobs will encourage people to move to the local area, resulting in increased terrestrial development in addition to the offshore interest.

5.5 IROPI Case: Step 4 – overriding

5.5.1 A balancing exercise

5.5.1.1 As evidenced above, there is an imperative public interest for the Project to proceed. However, to successfully pass the IROPI test, these reasons must be overriding. In a practical sense, this means ‘weighing up’ the benefits of the Project against the potential impacts to the European sites, to achieve the correct balance of the two.

5.5.1.2 This balancing exercise is the responsibility of the Scottish Ministers as the Competent Authority to determine whether the benefits of the Project as described above are significant enough to be overriding and outweigh the potential impacts attributed to the identified sites and features. While the HRA process as described within **Chapter 2** provides the context for this determination, and the Applicant considers that the evidence presented within **Section 5.2** to **Section 5.4** above are satisfactory to pass the relevant tests, ultimately it is down to the Competent Authority to exercise their professional, rational and expert judgment in deciding the planning balance and whether the benefits detailed within this Section are overriding.

5.5.2 The overriding factors

5.5.2.1 As detailed throughout **Chapter 5** above, the Applicant is confident that the benefits served by the Project are imperative, of public interest and are long-term in nature. The Applicant considers that the value of these benefits override the potential AEoSI therefore enabling the Project to proceed on the basis that suitable compensation is delivered.

5.5.2.2 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 citizens globally. The benefit with the greatest urgency is decarbonisation of Scotland's energy supply, 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, which are of the highest importance in the planning balance.

5.5.2.3 Furthermore, relevant guidance (DTA, 2021a) states that offshore wind projects are highly likely to override their impacts to UK's 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."

5.5.2.4 This guidance aligns with the decisions made with respect to other offshore wind projects throughout the UK and Scotland.

5.5.2.5 As established in **Section 3.3**, climate change is considered to be the most significant threat to all relevant qualifying interests considered herein, and it is only anticipated that the impacts on qualifying interests will become more intense due to the consistently increasing temperatures.

5.5.2.6 Therefore, any additional measures that can be taken to reduce the impact of climate change (such as the Project) are considered to be significantly overriding the direct impact on qualifying features.

5.5.2.7 The Applicant considers that under the tests described in the Habitats Regulations; the Project satisfies the planning balance with respect to overriding the identified potential AEoSI. The Applicant does note however, that this determination ultimately rests with the Scottish Ministers.

5.6 Summary of IROPI

5.6.1.1 In summary, it is the Applicant's position that the Project passes all of the IROPI tests as required under the Habitats Regulations.

5.6.1.2 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 offshore wind farm decisions in both Scotland and the wider UK.

5.6.1.3 The Applicant considers the evidence provided within this Derogation Case to conclusively demonstrate the importance of the Project and that there are IROPI for the Project to proceed.

6. Compensatory Measures

6.1.1.1 As established, 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 within both Scotland and the wider UK.

6.1.1.2 A range of compensation measures have been considered by the Applicant; these compensation measures are set out and fully considered within **Appendix A: HRA Compensation Plan.**

6.1.1.3 The Applicant considers that the range of compensatory measures considered provides adequate compensation for the potential impacts associated with the Project, with the shortlist of compensation measures considered listed below:

- Strategic compensation measures, which may include the following:
  - predator control and biosecurity;
  - habitat management and restoration, and reduction of disturbance at colony;
  - fisheries management compensatory measures;
  - restoring and enhancing supporting prey habitats; and
  - marine litter removal at scale.
- Predator eradication and biosecurity; and
- Conservation management funding.

7. Derogation Case Conclusions

7.1.1.1 At the conclusion of the Applicant's RIAA, it was determined that the potential for AEoSI cannot be ruled out on a number of European sites or across the NSN, with an additional number of sites also included within this derogation case on a 'without prejudice' basis.

7.1.1.2 This Derogation Case is provided to inform and 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 the coherence of the NSN.

7.1.1.3 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.

7.1.1.4 As explained in this Derogation Case, 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 globally. Decarbonisation of the UK energy supply is therefore a primary objective of the Project.

7.1.1.5 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.

7.1.1.6 The urgent need for the Project is justified as follows:

- UK and Scottish decarbonisation targets:
  - The low-carbon electricity generated by the Project will substantially support efforts to reduce carbon emissions in support of the Scottish Government's 2045 Net Zero statutory target (Climate Change (emissions reductions target) (Scotland) Act 2024) and UK Government statutory commitment to Net Zero by 2050 (Climate Change Act (2050 Target Amendment) Order 2019).
  - Urgent progress on decarbonisation is required to meet national targets. In 2019 both the Scottish First Minister and UK Parliament declared a climate emergency setting legally binding targets and delivery at scale is needed to meet these targets.
  - Urgent action is needed to deliver decarbonisation and limit global warming to less than 1.5 degrees.
  - The Project will deliver 3GW of renewable energy, providing a substantial contribution to decarbonisation and Net Zero targets and further countering climate change.
- Energy security for Scotland and the UK:
  - Energy security is very important to public safety, and with recent events including the Covid-19 pandemic and Russian invasion of Ukraine, the UK's reliance on imported fossil fuels has been made clear. The Project will provide an important contribution to energy security, the anticipated fluctuating nature of O&G prices due to the unpredictable global political climate and the National Grid demand and supply variability is likely to continue throughout the lifetime of the Project, reinforcing the increased need for Scottish and UK energy supply.
  - Increasing the renewable capacity within the UK will reduce the reliance on imported sources and therefore increase the UK's security with respect to both quantity and cost of energy.

- Affordability for the UK consumer:
  - New low carbon energy generation capacity with the aim of lowering the cost to the consumer in the long term is needed to deliver a just and fair energy transition away from fossil fuels.
  - Economies of scale arising from large scale projects will drive efficiencies through the different phases of the Project and thereby supports the supply of low carbon electricity at lower costs to the consumer.
  - Increasing UK energy sources will reduce the reliance on foreign energy sources and reduce the impact of external price fluctuations and ultimately act to reduce the end cost for the consumer.
- Supply Chain for Scotland:
  - For floating offshore wind to be delivered at scale, a significant investment is required to develop the technology and supply chain, through procurement, construction, and O&M activities.
  - The Project will use floating units for the WTGs, therefore driving the development of a local Scottish supply chain and allows for the optimisation of the available resource within the ScotWind lease area.
  - Legally, technically and commercially viable large-scale projects are needed in the planning system, which will encourage investment in the supply chain.
  - With the first phase fully commissioned by 2037, the Project will be one of the first large-scale developments to provide confidence to the market and enable supply chain development.
- Socio-economic benefit:
  - Facilitation of socio-economic development is a key aim in the Draft Energy Security and Just Transition Plan through creating employment opportunities in the low carbon energy sector. FLOW is a key area that will support the transition of Scottish resource from O&G industry to offshore wind.
  - 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 north-east of Scotland.
  - The Project's first phase is anticipated to complete commissioning by 2037, and will provide significant transition opportunity within the sector. It will bring investment to the local areas around the site resulting in increased jobs, investment and other socio-economic benefits to local communities.

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

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9. Glossary of Terms and Abbreviations

9.1 Abbreviations

Acronym	Definition
AA	Appropriate Assessment
AEoSI	Adverse Effect on Site Integrity
AR6	6th Assessment Report
BEIS	Department for Business, Energy and Industrial Strategy
BESS	British Energy Security Strategy
CCA	Climate Change Act 2009
CCC	Committee on Climate Change
ECJ	European Court of Justice
CNO	Critical National Priority
Defra	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DTA	David Tyldesley Associates
EIA	Environmental Impact Assessment
EU	European Union
FLOW	Floating Offshore Wind
GHG	Greenhouse Gase
GVA	Gross Value Added
GW	gigawatts
HRA	Habitats Regulations Appraisal
INTOG	Innovation and Targeted Oil and Gas
IPCC	Inter-Governmental Panel on Climate Change
IPF	Initial Planning Framework
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
km	kilometre

Acronym	Definition
LSE	Likely Significant Effect
m	metre
MD-LOT	Marine Directorate Licensing and Operations Team
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MPS	Marine Policy Statement
MPA	Marine Protected Area
MW	megawatts
MWh	megawatt hour
NE7	Northeast 7
NESO	National Electricity Systems Operator
NGESO	National Grid Electricity System Operator Limited
nm	nautical miles
NMP	National Marine Plan
NPF4	National Planning Policy Framework 4
NPS	National Policy Statement
NPV	Net Present Value
NSN	National Site Network
O&G	Oil and Gas
O&M	Operation and Maintenance
OAA	Option Agreement Area
OSPAR	Oslo and Paris Convention for the Protection of the Marine Environment
OWIC	Offshore Wind Industry Council
RCP	Reactive Compensation Platform
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
s.36	Section 36
SAC	Special Area of Conservation

Acronym	Definition
SDC	Substation Distribution Centre
SMP	Sectoral Marine Plan
SMP-OWE	Sectoral Marine Plan for Offshore Wind Energy
SNCB	Statutory Nature Conservation Body
SoS	Secretary of State
SPA	Special Protection Area
SPR	ScottishPower Renewables (UK) Limited
SSEN	Scottish and Southern Electricity Networks
TCE	The Crown Estate
UK	United Kingdom
UN	United Nations
UNNFCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generators

9.2 Glossary of terms

Term	Definition
Annex I (of the Habitats Directive)	Part of the Habitats Directive 92/43/EEC that identified habitat types that required conservation through the designation of Special Areas of Conservation (SACs).
Annex II (of the Habitats Directive)	Part of the Habitats Directive 92/43/EEC that identified species that required conservation through the designation of SACs.
Appropriate Assessment	An assessment to determine the implications of a plan or project on relevant national site network sites in view of that site's conservation objectives. An Appropriate Assessment forms part of the Habitats Regulations Appraisal (HRA) and is required when a plan or project (either alone or in-combination with other plans or projects) is likely to have a significant effect on a national site network. Where there are adverse impacts, it also includes an assessment of the potential mitigation for those impacts.
Connectivity	The association of processes or pathways by which a proposal may influence the qualifying interests of a Designated site. In HRA, this commonly relates to mobile qualifying feature species that use a spatial

Term	Definition
	location or habitat beyond the boundary of a Designated site.
Designated site	Designated sites are those that are designated through the Habitats Directive and Birds Directive (via national legislation as appropriate). Within Scotland, additional sites designated through international convention are given the same protection through policy – overall all of these are referred to as Designated sites. Designated sites in Scotland are considered to be SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar sites (designated under international convention) and proposed Ramsar sites.
Environmental Impact Assessment Report	In Scotland the outcome of the Environmental Impact Assessment (EIA) process is reported within a document called an EIA Report.
European Commission	The European Union's (EU's) politically independent executive division. It is responsible for preparing proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU.
Export Cable Corridor	The broad linear area through seabed (seaward of MHWS) and land (landward of MHWS) connecting the Project OAA offshore to the proposed substation onshore, and within which electrical export cables will be located.
Habitats Regulations Appraisal	The assessment of the impacts of implementing a plan or policy on a Designated site, the purpose being to consider, via appropriate assessment, the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.
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 s.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 Designated sites (Special Areas of Conservation, Special Protection Areas, candidate SACs and SPAs and Ramsar Sites).

Term	Definition
Likely Significant Effects	Likely Significant Effects are those effects that have a pathway between a plan or project and the Designated site; and that can affect the conservation objectives for the site's qualifying interests. If there are Likely Significant Effects, then the Habitats Regulations places a duty on 'Competent Authorities' to carry out an appropriate assessment of the plan or project prior to granting consent.
Marine Directorate – Licensing Operations Team	The regulator for processing and assisting the Scottish Ministers in determining marine licence applications in the Scottish inshore region (between 0 and 12nm) under the Marine (Scotland) Act 2010, and in the Scottish offshore region (between 12 and 200nm) in accordance with the Marine and Coastal Access Act 2009.
Mean Low Water Springs	The average throughout a year of the heights of two successive low waters during those periods of 24-hours (approximately once a fortnight) when the tidal range is greatest.
National Grid Electricity System Operator's Holistic Network Design	To provide a coordinated onshore and offshore design for a 2030 network to meet government objectives of connecting 40GW of offshore wind in Great Britain by 2030, including 11GW in Scotland as well Net Zero by 2050 for GB and 2045 for Scotland. The HND aims to provide an economic, efficient, operable, sustainable and coordinated National Electricity Transmission System including the onshore and offshore assets required to connect offshore wind and considering internal interconnectors.
National Site Network	Since leaving the EU, Natura and European sites are now referred to as the National Site Network.
NatureScot	Formerly known as Scottish Natural Heritage, NatureScot is a public body and government advisor responsible for Scotland's natural heritage, in particular for its natural, genetic and scenic diversity.
Option Agreement	An agreement between two parties (the Crown Estate Scotland and the offshore wind farm developer in this case) to facilitate a future possible transaction concerning an asset at an agree price and on an agreed date
Option Agreement Area	Term for the wind farm site upon the seabed at a location specified in the Option Agreement between the Crown Estate Scotland and a developer. It is the agreement that allows the developer the rights to undertake such tests, survey and site investigations that do not entail the temporary or permanent installation of any works or structures on the seabed.

Term	Definition
Ramsar site	Areas listed by the UK Government under the Convention on Wetlands of International Importance (the Ramsar Convention 1971).
Scottish Ministers	Representatives of the devolved government of Scotland.
ScottishPower Renewables UK Limited (SPR)	Part of the Iberdrola group and 100% owner of MarramWind Limited.
Special Area of Conservation (SAC)	International designation implemented under the Habitats Regulations for the protection of habitats and (non-bird) species. Sites designated to protect habitats and species in Annexes I and II of the Habitats Directive and sufficient habitat to be conserved to maintain favourable conservation status of designated features.
Special Protection Area (SPA)	Sites which have been classified under EU Directive (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive.
United Kingdom (UK)	The United Kingdom of Great Britain and Northern Ireland, comprising England, Scotland, Wales and Northern Ireland.
United Nations	The United Nations is an international organisation founded in 1945 to maintain global peace and security.

Appendix A HRA Compensation Plan

Appendix A: Derogation Case Compensation Plan

MarramWind Offshore Wind Farm

December 2025

MarramWind

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Contents

Non-Technical Summary 5

1. Introduction 6

1.1 Background 6
1.2 Approach to identification of potential compensation measures 6

2. Step 1: Report to Inform Appropriate Assessment Conclusions and Conservation Objectives 9

2.1 Conservation objectives 9
2.2 Summary of Appropriate Assessment conclusions 9

3. Step 2: Species Ecology, Known Pressures and Site Network Coherency 11

3.2 Kittiwake 11
3.2.1 Species ecology 11
3.2.2 Site network coherency 11
3.2.3 Species Pressures 14
3.3 Guillemot 15
3.3.1 Species ecology 15
3.3.2 Site network coherency 15
3.3.3 Species pressures 18
3.4 Razorbill 18
3.4.1 Species ecology 18
3.4.2 Site network coherency 18
3.4.3 Species pressures 22
3.5 Puffin 22
3.5.1 Species ecology 22
3.5.2 Site network coherency 22
3.5.3 Species pressures 26
3.6 Gannet 26
3.6.1 Species ecology 26
3.6.2 Site network coherency 26
3.6.3 Species pressures 29
3.7 Conclusion 29

4. Step 3: Identification of Potential Compensation Measures 30

4.1 Guidance 30
4.2 Ranking of compensation measures 31
4.2.2 Potential compensation measures 35

5. Step 4: Identification of Short-listed Compensation Measures 57

5.1.1 Selection of short-listed compensation measures 57

5.1.2 Strategic compensation measures fund contribution 57
5.1.3 Predator eradication and biosecurity 59
5.1.4 Conservation management funding 66
5.1.5 Proposed compensation roadmap 68

6. References 72

7. Glossary of Terms and Abbreviations 78

7.1 Abbreviations 78
7.2 Glossary 79

Table 2.1 Designated sites and features considered within the derogation case 10
Table 3.1 UK and Scotland kittiwake population estimates and change between 1969 to 2021 12
Table 3.2 Summary of designated sites considered for kittiwake, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project 14
Table 3.3 UK and Scotland guillemot population estimates and change between 1969 to 2021 16
Table 3.4 Summary of designated sites considered for guillemot, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project 17
Table 3.5 UK and Scotland razorbill population estimates and change between 1969 to 2021 19
Table 3.6 Summary of designated sites considered for razorbill, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project 21
Table 3.7 Scottish puffin population estimates and change between 1969 to 2021 23
Table 3.8 Summary of designated sites considered for puffin, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project 25
Table 3.9 Scottish gannet population estimates and change between 1969 to 2021 27
Table 3.10 Summary of designated sites considered for gannet, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project 28
Table 4.1 Compensation measure suitability ranking 32
Table 4.2 Strategic compensation measures fund contribution 35
Table 4.3 Biosecurity and incursion prevention (island colonies) 36
Table 4.4 Conservation management funding 38
Table 4.5 Invasive mammal eradication (islands) 39
Table 4.6 Vegetation management at colonies (tree mallow removal and habitat structure) 40
Table 4.7 Seagrass restoration 42
Table 4.8 Disturbance reduction at colonies (wardening, access and visitor management) 43
Table 4.9 Bycatch mitigation / prevention 44
Table 4.10 Ghost gear and marine litter removal 46
Table 4.11 Colony enhancement 47
Table 4.12 Shellfish reef restoration (native oyster / mussel) 48
Table 4.13 Creation of artificial burrows 49
Table 4.14 Kelp bed extension 50

Table 4.15 Non-lethal avian predator control 52
Table 4.16 At-sea disturbance and traffic management 53
Table 4.17 Artificial nesting structures (ANS) (onshore / offshore) 54
Table 4.18 Supplementary feeding 55
Table 5.1 Sites considered potentially suitable for predator eradication 61

Plate 3.1 Kittiwake abundance in Scotland between 1986 to 2019 (showing 95% confidence limits). Figure taken from JNCC (2021), based on SMP data 13
Plate 3.2 Guillemot abundance in Scotland between 1986 to 2019 (showing 95% confidence limits). Figure taken from JNCC (2021), based on SMP data 16
Plate 3.3 Razorbill abundance in Scotland between 1986 to 2019 (showing 95% confidence limits). Figure taken from JNCC (2021), based on SMP data. 20
Plate 3.4 Puffin abundance at three colonies in Scotland between 1986 to 2019. Figure taken from JNCC (2021), based on SMP data 24
Plate 5.1 Proposed project-led compensation and adaptive management roadmap 71

Non-Technical Summary

This document presents the compensation plan and approach by the Applicant for the development of the compensatory measures proposed for the Project for impacts to the following sites / features:

- The potential for an Adverse Effect on Site Integrity (AEoSI) could not be ruled out for the following qualifying feature for predicted impacts from the Project alone:
  - Guillemot feature of Buchan Ness to Collieston Coast Special Protection Area (SPA).
- The potential for an AEoSI could not be ruled out for the following qualifying features for predicted impacts from the Project in-combination:
  - Guillemot feature of Buchan Ness to Collieston Coast SPA, Troup, Pennan and Lion's Heads SPA and Copinsay SPA.
- The potential for an AEoSI was confidently ruled out for the following qualifying features for predicted impacts from the Project alone and in-combination, and are therefore considered on a without prejudice basis only:
  - Kittiwake feature of Buchan Ness to Collieston Coast SPA, East Caithness Cliffs SPA, Forth Islands SPA, Fowlsheugh SPA, North Caithness Cliffs SPA, St Abb's Head to Fast Castle SPA, Troup, Pennan and Lion's Heads SPA, West Westray SPA;
  - Razorbill feature of East Caithness Cliffs SPA and Troup, Pennan and Lion's Heads SPA;
  - Puffin feature of Forth Islands SPA; and
  - Gannet feature of Forth Islands SPA, Hermaness, Saxa Vord and Valla Field SPA and Fair Isle SPA.

The document provides a summary of impacts, possible pressures affecting the qualifying features listed and potential compensation measures for Scottish Ministers to consider.

The document provides an overview of the different types of compensation measures available to the Project, including strategic, collaborative and Applicant led. The document details the Applicant's approach to the development of the long-list and short-list of measures explored, as well as the reasoning for the subsequent progression or rejection of measures. The Applicant's preferred compensation pathway to deliver ornithological compensation is through strategic mechanisms with a preference on contributing to the Scottish Marine Recovery Fund. However, in case this preferred route is not feasible or suitable, alternative delivery pathways have been identified and pathways for progression are detailed, including potential for collaboration with other developers. These measures are predator eradication / biosecurity and conservation management funding.

A compensation implementation and monitoring plan to deliver any required compensation for these designated sites and qualifying features will be prepared based on the strategy set out in the final version of this plan.

This plan alongside the derogation case, provides the information needed to reassure the Scottish Ministers that the Applicant is able to secure compensation, should they conclude an Adverse Effect on Site Integrity in their Appropriate Assessment.

1. Introduction

1.1 Background

1.1.1.1 MarramWind Limited (hereafter referred to as 'the Applicant') is a company wholly owned by ScottishPower Renewables Ltd.

1.1.1.2 The Applicant is proposing to develop the MarramWind Offshore Wind Farm (hereafter, referred to as 'the Project') as a floating offshore wind development. The Project is located approximately 75 kilometres (km) offshore from the Aberdeenshire coast in northeast Scotland at its closest point, with the Option Agreement Area covering an area of approximately 684km^2 (**Volume 2, Figure 1.1: Red Line Boundary** of the **Environmental Impact Assessment (EIA) Report**). The Project will comprise both offshore and onshore infrastructure (see **Volume 1, Chapter 4: Project Description** of the **EIA Report** for full details on the Project design).

1.1.1.3 To support the Appropriate Assessment decision by the Scottish Ministers, the Applicant has undertaken an assessment of potential effects on designated sites and qualifying features as presented in the **Report to Inform Appropriate Assessment (RIAA)**. The conclusions drawn within the **RIAA** have informed the identification of compensation requirements and the development of proposed compensation measures.

1.1.1.4 This report forms part of the Project's derogation case under the Habitats Regulations. It addresses the scenario where Scottish Ministers determine that the Project risks impacting the integrity of a designated site either alone or in-combination. The purpose of this report is to outline potential compensation options which the Project could implement, should Scottish ministers conclude compensation is required for ornithological features.

1.2 Approach to identification of potential compensation measures

1.2.1.1 At the time of writing, there is no formal guidance from Scottish Government to aid in the identification of compensation measures at a Project level. In its absence, several other documents have been used to aid in this process, including:

- best practice guidance for developing compensatory measures in relation to marine protected areas (Department for Environment, Food and Rural Affairs (Defra), 2021);
- guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (European Commission, 2007);
- framework to evaluate ornithological compensatory measures for offshore wind (MD-LOT, 2024;
- ornithology compensatory advice note (Searle *et al.,* 2023);
- feasibility of strategic ornithological compensatory measures in the Scottish context (Tapia-Harris and Evans, 2024);
- report to Crown Estate Scotland and Scottish Offshore Wind Energy Council: Habitats Regulations Appraisal (HRA) derogation scope b – review of seabird strategic compensation options (MacArthur Green, 2021); and
- assessment of compensatory measures for impacts of offshore windfarms on seabirds (McGregor *et al.,* 2022).

1.2.1.2 Based on the approaches outlined within these documents, the Project has followed a stepwise process to identify potential compensation measures:

> Step 1. Quantify the level of AEoSI the project is predicted to have on qualifying features of designated sites. This will include identification of the conservation objectives which may be undermined should the project be consented.

> Step 2. Quantify the overall importance of the designated site in the context of overall network coherency and the level of effect the project is predicted to have on the network integrity.

> Step 3. Compile a long list of potential measures which could be implemented to provide compensation for potential adverse effects from the Project. Critically appraise each measure to conclude a short list of measures for the Project.

> Step 4. Consult on the short-listed measures identified with key stakeholders to ensure agreement on proposed measures. Following approval, the Project will pursue securing measures if Ministers are minded to consent.

1.2.1.3 Despite a lack of guidance on project-led measures, it should be noted that recent consultation has been presented by Scottish Government (2025) on updates to policy around strategic compensation and wider measures. This highlights the limited amount of 'like-for-like' compensatory measures available for seabird species in Scotland, and aims to enable the delivery of strategic compensation, and a wider range of compensatory measures that benefit the protected site network as a whole rather than the specific feature (for instance, 'non-like-for-like'). In light of this, the Project's preference will be to provide compensation at the strategic level through contribution to the Scottish Marine Recovery Fund (SMRF) or other strategic compensation opportunities. However, if this is not possible, a longlist of potential project-led / collaborative measures has also been outlined in this report.

1.2.1.4 At the time of writing, the UK Government is shortly expected to introduce secondary legislation to amend compensation provisions of the 2017 UK Habitats Regulations for offshore wind projects to redefine the purpose and scope of compensation and to establish marine recovery funds as mechanisms for strategic compensation. These reforms, and the finalisation of the Scottish Government's strategic compensation policy, are expected to be completed prior to the determination of the offshore consenting applications for the Project (ABPmer, 2025). This Compensation Plan therefore responds to both existing and expected future statutory requirements.

1.2.1.5 The Project discussed with NatureScot expectations for compensation at the HRA stakeholder engagement meeting on the 26 June 2025. NatureScot provided the following advice in relation to information requirements:

> *"NatureScot's preference is for compensation measures to be delivered through a plan-led process with developers contributing to plan level measures. Compensation measures should be finalised and ready to be put in place at the time of construction, however plan-level measures are not yet at this stage (such as the Scottish Marine Recovery Fund). For project-specific compensation, we seek the following information be provided at pre-application and application stages:*

- *Pre-application:*
  - *Shortlist of considered proposed measure(s)*
  - *Evidence*
  - *Justification for selections*
  - *Schedule for implementation, monitoring and reporting*
  - *Discussion on likely direct/indirect impacts*
- *Application:*
  - *List and detail of proposed measure(s)*
  - *Update schedule for implementation, monitoring and reporting*
  - *Heads of terms*
  - *Success criteria*
  - *Unintended consequences*

For both plan and project-level compensation measures, we require confidence that measures will be effective and that there is a proven mechanism of function. If measures are not yet in place, we cannot agree to its principles. Overall, we can accept the intention to contribute to plan-level compensation, however we cannot agree to these measures before the plan is available."

1.2.1.6 In accordance with the advice provided, the Applicant has reviewed a long list of potential options for compensation as detailed within **Section 4**, resulting in a short-list of three potential options the Applicant will pursue further during the Application stage. Information relating to the shortlist of considered proposed measure(s), evidence supporting the effectiveness of the measure, compensation schedule (implementation, monitoring and reporting) and discussion on likely direct / indirect impacts is provided within **Section 5**. The Project's roadmap for the Application stage through to post determination is provided in **Section 5.1.5**.

1.2.1.7 Whilst plan-level assessments are still ongoing, the emerging Updated Sectoral Marine Plan is expected to require a derogation under the Habitats Regulations, including the identification of sufficient compensation. Subject to the enactment of the aforementioned secondary legislation, the Applicant presently expects that the Updated Sectoral Marine Plan will be adopted in Spring 2026 during the determination of the consenting applications for the Project.

2. Step 1: Report to Inform Appropriate Assessment Conclusions and Conservation Objectives

2.1 Conservation objectives

2.1.1.1 Conservation objectives are set to ensure that, subject to natural change, the integrity of the designated site is maintained or restored as appropriate, and that the designated site contributes to achieving Favourable Conservation Status of its quantifying features.

2.1.1.2 The overarching conservation objectives for which each Scottish designated site has been assessed against are listed below.

- to ensure that the qualifying features of the designated site are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status;
- to ensure that the integrity of the designated site is restored in the context of environmental changes by meeting the following objectives for each feature:
  - the population of the qualifying features are viable components of the designated site;
  - the distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species; and
  - the supporting habitats and processes relevant to qualifying features and their prey resources are maintained, or where appropriate restored, at the designated site.

2.1.1.3 Details of the relevant conservation objectives requiring assessment for each designated site is provided within the RIAA.

2.2 Summary of Appropriate Assessment conclusions

2.2.1.1 A summary of the designated sites and features considered within this derogation case is provided in **Table 2.1**. Designated sites and features for inclusion are based on where the Project has been unable to conclude no AEoSI for a qualifying feature either alone or in-combination. Additionally, designated sites and features where Marine Directorate Licensing and Operations have concluded that an AEoSI cannot be ruled out for other projects' consent applications are included, though on a without prejudice basis. The total range of impact predictions presented within **Table 2.1**, has been used to identify proportionate compensation options for the Project to short-list.

2.2.1.2 Within **Table 2.1**, designated sites and features where the Project were unable to conclude no AEoSI either alone or in-combination are highlighted in green and emboldened.

Table 2.1 Designated sites and features considered within the derogation case

Designated site	Feature	Project alone annual predicted impact (breeding adults)	
		Developer approach	**Guidance approach**
Buchan Ness to Collieston Coast Special Protection Area (SPA)	Kittiwake (*Rissa tridactyla*).	3.34 to 3.99	
	Guillemot (*Uria aalge*).	**0.00 to 25.92**	**78.96 to 141.15**
Copinsay SPA	**Guillemot**	**0.00 to 8.01**	**24.41 to 28.85**
East Caithness Cliffs SPA	Kittiwake	4.81 to 5.65	
	Razorbill (*Alca torda*).	0.00 to 0.21	0.25 to 0.75
Fair Isle SPA	Gannet	0.15 to 0.20	0.17 to 0.52
Forth Islands SPA	Kittiwake	0.48 to 0.57	
	Puffin (*Fratercula arctica*).	0.00 to 1.19	4.14 to 7.01
	Gannet (*Morus bassanus*).	1.77 to 2.36	2.07 to 6.20
Fowlsheugh SPA	Kittiwake	2.25 to 2.68	
Hermaness, Saxa Vord and Valla Field SPA	Gannet	0.36 to 0.48	0.42 to 1.26
North Caithness Cliffs SPA	Kittiwake	0.81 to 0.94	
St Abb's Head to Fast Castle SPA	Kittiwake	0.44 to 0.52	
Troup, Pennan and Lion's Heads SPA	Kittiwake	3.30 to 3.93	
	Guillemot	**0.00 to 22.27**	**67.85 to 121.31**
	Razorbill	0.00 to 0.40	1.37 to 2.33
West Westray SPA	Kittiwake	0.53 to 0.59	

Table note: Designated sites and features where the Project were unable to conclude no AEoSI either alone or in-combination are highlighted in green and emboldened. Developer approach and Guidance approach refers to the differing assessment approaches to distributional response assessments. Note the Developer and Guidance approaches for kittiwake are the same. Further details on the assessment approach are provided within Section 6.2 of the **RIAA**.

3. Step 2: Species Ecology, Known Pressures and Site Network Coherency

3.1.1.1 This Section provides information on species ecology, population trends, overall network coherency and current known pressures for the qualifying features considered for the Project's derogation case. This information is provided to aid in understanding the suitability and potential benefits of compensation measures in contrast to the scale of any potential impacts the Project may have with regard to the individual designated site and overall site network.

3.1.1.2 In order to outline the current known pressures for the five seabird species considered for, the Feature Activity Sensitivity Tool (FeAST) (Rogerson *et al.,* 2021) has been utilised. The FeAST tool is a web-based application, which provides evidence and information on the sensitivity of all Scottish marine features of conservation importance. Additionally, the Conservation Management Advice (CMA) documentation for the designated sites in **Table 2.1** were reviewed to identify any known pressures affecting the qualifying features.

3.1.1.3 Identification of the current known pressures upon these five seabird species, using the resources highlighted above, were utilised to identify potential beneficial measures for species considered. Potential compensation measures identified are presented in **Section 4**.

3.2 Kittiwake

3.2.1 Species ecology

3.2.1.1 Kittiwakes are small pelagic gulls that typically nest in cliffside colonies but will also use artificial structures such as buildings, walls, or bridges where natural cliffs are unavailable. They are predominantly marine, spending most of the non-breeding season offshore. Their diet mainly consists of small shoaling fish (especially sandeel in British waters, alongside clupeids and gadids) but can also include invertebrates and fishery discards (Burnell *et al*., 2023).

3.2.2 Site network coherency

3.2.2.1 Kittiwake are currently red-listed in the Birds of Conservation Concern (BOCC) 5a assessment (Stanbury *et al*., 2024). Populations have shown substantial declines, with the most recent census recording the lowest numbers ever recorded by the four censuses, with the UK population (215,913 breeding pairs) having declined 43% since the Seabird 2000 census (Burnell *et al*., 2023).

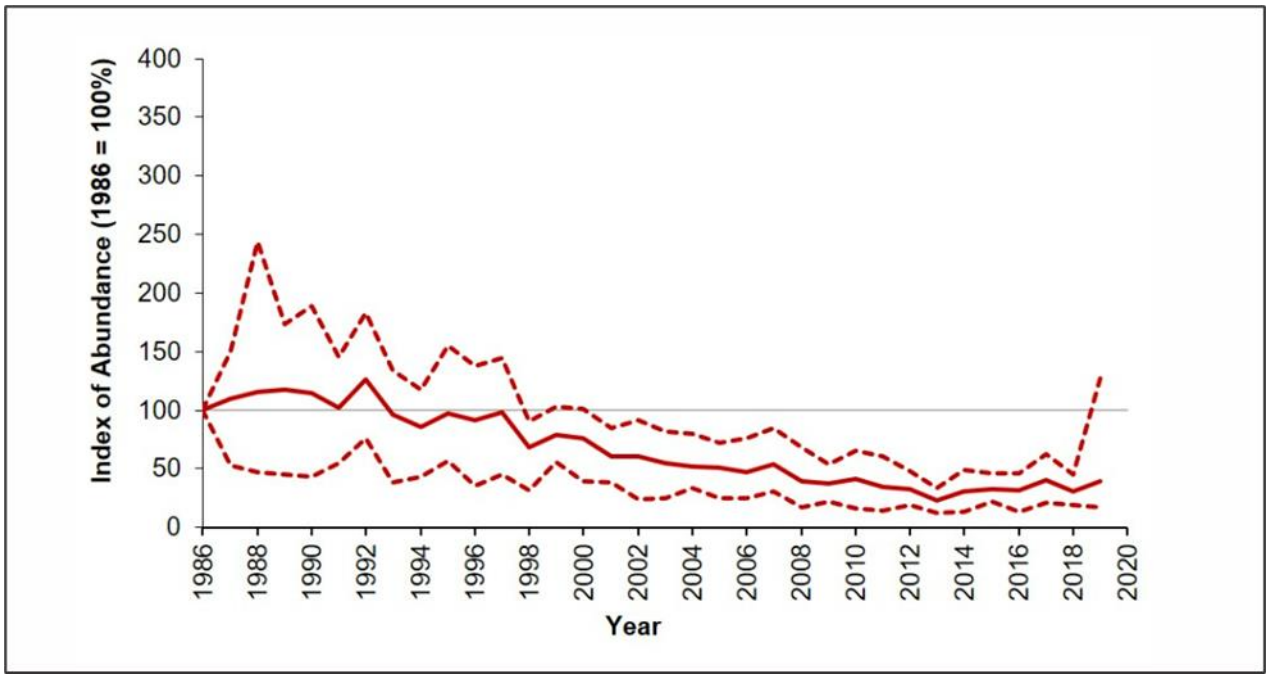
3.2.2.2 The majority of the UK kittiwakes are located in Scotland, which hosts over 50% of the UK population, with 242,164 breeding adults (Burnell *et al*., 2023). The pattern of kittiwake distribution is determined largely by the availability of suitable nest sites with the largest colonies in Orkney, Shetland and the north coast of Scotland (Thom, 1986). However, Scottish populations showed the largest decline, with a 57% reduction in breeding birds since the Seabird 2000 census.

3.2.2.3 The population trend for kittiwakes in Scotland from available Seabird Monitoring Programme (SMP) (British Trust for Ornithology (BTO), 2025) data is presented below in **Table 3.1** and **Plate 3.1**, taken from the Joint Nature Conservation Committee (JNCC) SMP Report 1986 – 2019 (JNCC, 2021). These data indicate that the kittiwake population in Scotland declined between 1986 and 2013, with stabilisation and a slight increase recorded between 2013 and 2019. These trends generally align with those described by the national census data (**Table 3.1**) for the period covered.

Table 3.1 UK and Scotland kittiwake population estimates and change between 1969 to 2021

Population	Demographic change	Operation Seafarer (1969 to 1970)	Seabird colony register (1985 to 1988)	Seabird 2000 (1998 to 2002)	Seabirds Count (2015 to 2021)
Scotland	Population estimate (breeding adults).	692,194	718,850	565,636	242,164
	% change since previous census.	N/A	+3.85%	-21.31%	-57.19%
UK	Population estimate (breeding adults).	822,540	1,018,910	758,598	431,826
	% change since previous census.	N/A	+23.87%	-25.55%	-43.08%

Plate 3.1 Kittiwake abundance in Scotland between 1986 to 2019 (showing 95% confidence limits). Figure taken from JNCC (2021), based on SMP data



3.2.2.4 A summary of the combined predicted distributional response and collision impacts apportioned to each designated site considered for kittiwake, along with colony counts, condition and the percentage contributions of each designated site to the Scottish and UK populations, is provided in **Table 3.2**. It is unlikely that the level of effect described from the Project alone would cause any tangible change to the integrity of the overall site network compared to wider environmental factors or natural variability. It is therefore expected that this level of predicted impact would be indistinguishable from natural population fluctuations in isolation. Therefore, the Project is considered very low risk in terms of effect on the overall site network coherency for kittiwake.

Table 3.2 Summary of designated sites considered for kittiwake, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project

Designated site	Count of breeding adults (Burnell *et al.,* 2023)	Summary condition	Percentage contribution to the Scottish site network (%)	Percentage contribution to the UK site network (%)	Proportion of SPA population impacted by the Project (%)
Buchan Ness to Collieston Coast SPA	22,590	Unfavourable	9.33	5.23	0.015 to 0.018
Troup, Pennan and Lion's Heads SPA	21,232	Unfavourable	8.77	4.92	0.016 to 0.019
Fowlsheugh SPA	28,078	Unfavourable	11.59	6.50	0.008 to 0.010
East Caithness Cliffs SPA	48,958	Favourable	20.22	11.34	0.010 to 0.012
North Caithness Cliffs SPA	11,142	Unfavourable	4.60	2.58	0.007 to 0.008
Forth Islands SPA	9,084	Unfavourable	3.75	2.10	0.005 to 0.006
St Abb's Head to Fast Castle SPA	10,300	Unfavourable	4.25	2.39	0.004 to 0.005
West Westray SPA	1,932	Unfavourable	0.80	0.45	0.028 to 0.031
Proportion of the total Scottish site network impacted by the Project: 0.007% to 0.008%					
Proportion of the total UK site network impacted by the Project: 0.004%					

3.2.3 Species Pressures

3.2.3.1 To determine the key known pressures on kittiwake the FeAST tool was used, with key pressures being those where kittiwake was classified as high sensitivity or sensitive. These include:

- collision above water – sensitive
- introduction of microbial pathogens – high;
- nitrate and phosphate enrichment – sensitive;
- litter – high;
- transition elements and organo-metal contamination – sensitive;
- hydrocarbon and polycyclic aromatic hydrocarbon (PAH) contamination – high;
- physical loss – sensitive;
- **reduction in availability or quality of prey – high**;

- removal of non-target species – high;
- temperature change – high;
- water flow changes – sensitive;
- wave exposure changes – sensitive; and
- **climate change – high**.

3.2.3.2 Pressures identified within the CMAs for each of the qualifying features in **Table 3.2** are highlighted in bold above.

3.3 Guillemot

3.3.1 Species ecology

3.3.1.1 Guillemots are medium-sized auks that typically nest in cliffside colonies in high densities. They feed on a variety of prey items (including fish, crustaceans and molluscs, though key prey items are nearshore-schooling fish such as sandeel, sprat and herring (Burnell *et al*., 2023). As pursuit divers, they forage by diving from the sea surface and swimming underwater, using their wings for propulsion.

3.3.2 Site network coherency

3.3.2.1 Guillemots are currently amber-listed under the BOCC5a assessment (Stanbury *et al*., 2024). The UK population was estimated at 1,696,290 (1,265,888 individuals recorded) breeding adults during the Seabirds Count (2015 to 2021), representing 12.9% of the global population at the time of the Seabird 2000 census (Burnell *et al*., 2023). Scotland supports the majority (64%) of the UK population, with 1,086,264 (810,645 individuals recorded) breeding adults recorded in the most recent census. This reflects a 31% decline from the Seabird 2000 count in Scotland, with the most pronounced reductions observed in the north: declines were recorded at 32 of 37 sites in Shetland and 42 of 53 sites in Orkney (Burnell *et al*., 2023).

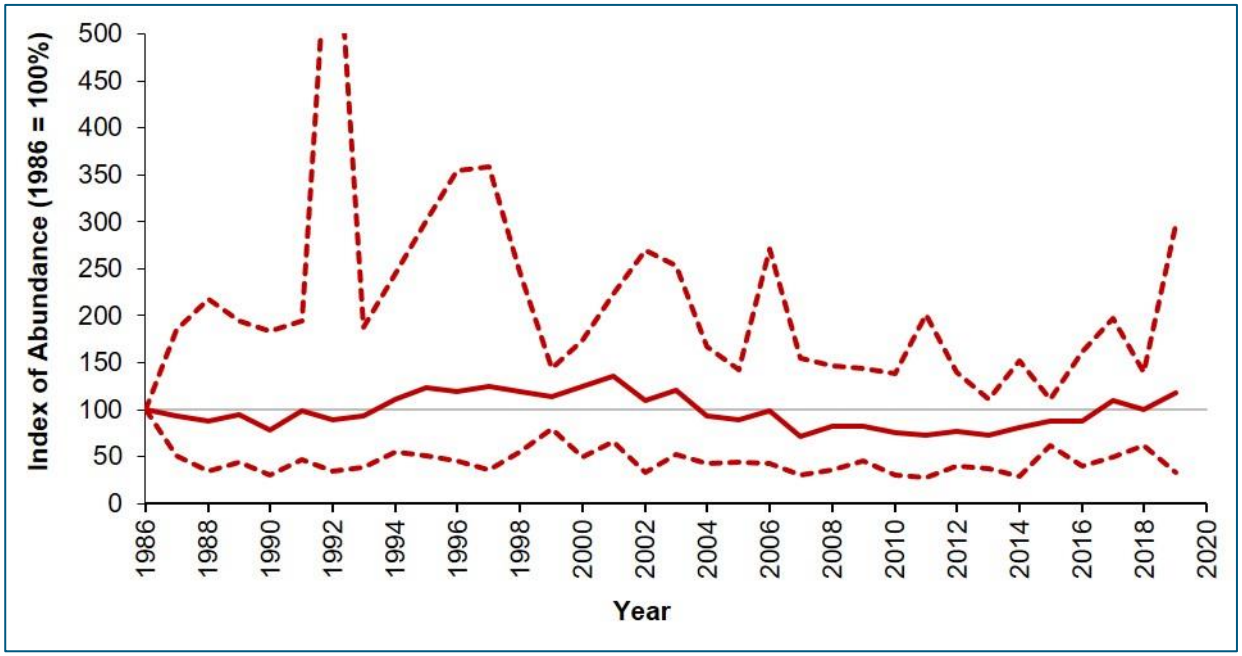
3.3.2.2 The population trend for guillemots in Scotland from available SMP (BTO, 2025) data is also presented below in **Table 3.3** and **Plate 3.2**, taken from the JNCC SMP Report 1986 to 2019 (JNCC, 2021). These data indicate that the Scottish guillemot population has fluctuated through the decades, with an overall positive trend from 1986 to a peak in numbers in 2001. After this, there was a decreasing trend into the late 2000s, with numbers stabilising at a lower level until 2013, after which they increased steadily. These trends generally align with those described by the national census data (**Table 3.3**) for the period covered.

Table 3.3 UK and Scotland guillemot population estimates and change between 1969 to 2021

Population	Demographic change	Operation Seafarer (1969 to 1970)	Seabird colony register (1985 to 1988)	Seabird 2000 (1998 to 2002)	Seabirds Count (2015 to 2021)
Scotland	Population estimate (breeding adults)*.	696,078	1,263,751	1,571,762	1,086,264
	% change since previous census.	N/A	+81.55%	+24.37%	-30.89%
UK	Population estimate (breeding adults)*.	803,790	1,448,997	1,911,218	1,696,290
	% change since previous census.	N/A	+80.27%	+31.90%	-11.25%

Table note: Population estimates are based on the number of individuals presented within Burnell *et al.* (2023) and corrected to breeding adults using a correction factor of 1.34 as recommended within Harris *et al.* (2015).

Plate 3.2 Guillemot abundance in Scotland between 1986 to 2019 (showing 95% confidence limits). Figure taken from JNCC (2021), based on SMP data



3.3.2.3 A summary of the distributional response predicted impacts apportioned to each designated site considered for guillemot, along with the colony count, condition and the percentage contribution of each of the designated sites to the Scottish and UK populations, is provided in **Table 3.4**. It is unlikely that the level of effect described from the Project alone would cause any tangible change to the integrity of the overall site network compared to wider environmental factors or natural variability. It is therefore expected that this level of predicted impact would be indistinguishable from natural population fluctuations in isolation. Therefore, the Project is considered very low risk in terms of effect on the overall site network coherency for guillemot.

Table 3.4 Summary of designated sites considered for guillemot, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project

Designated site	Count of breeding adults (Burnell *et al.,* 2023)	Summary condition	Percentage contribution to the Scottish site network (%)	Percentage contribution to the UK site network (%)	Proportion of SPA population impacted by the Project (Developers approach)	Proportion of SPA population impacted by the Project (Guidance approach)
Buchan Ness to Collieston Coast SPA	39,440	Favourable	3.63	2.33	0.000 to 0.066	0.200 to 0.358
Troup, Pennan and Lion's Heads SPA	31,893	Unfavourable	2.94	1.88	0.000 to 0.070	0.213 to 0.380
Copinsay SPA	24,761	Unfavourable	2.28	1.46	0.000 to 0.032	0.099 to 0.117
Proportion of the total Scottish site network impacted by the Project: 0.016% to 0.027% (Guidance approach); 0.000% to 0.005% (Developers approach)						
Proportion of the total UK site network impacted by the Project: 0.010% to 0.017% (Guidance approach); 0.000% to 0.003% (Developers approach)						

3.3.3 Species pressures

3.3.3.1 To determine the key known pressures on guillemot the FeAST tool was used, with key pressures being those where guillemot was classified as high sensitivity or sensitive. These include:

- collision below water – high;
- introduction of light or shading – sensitive;
- introduction of microbial pathogens – high;
- introduction of non-indigenous species – high;
- transition elements and organo-metal contamination – sensitive;
- hydrocarbon and PAH contamination – high;
- physical loss – sensitive;
- **reduction in availability or quality of prey – high**;
- removal of non-target species – high;
- siltation rate changes – sensitive;
- synthetic compound contamination – sensitive;
- temperature change – high;
- visual disturbance – high;
- wave exposure changes – sensitive; and
- climate change – high.

3.3.3.2 Pressures identified within the CMAs for each of the qualifying features in **Table 3.4** are highlighted in bold above.

3.4 Razorbill

3.4.1 Species ecology

3.4.1.1 Razorbills are medium-sized auks that typically nest in cliffside colonies and boulder beaches, often mixed with guillemots. They feed on a variety of prey items (including fish, crustaceans and molluscs, though key prey items are nearshore-schooling fish such as sandeel, sprat and herring (Burnell *et al*., 2023). As pursuit divers, they forage by diving from the sea surface and swimming underwater, using their wings for propulsion.

3.4.2 Site network coherency

3.4.2.1 Razorbills are currently amber-listed under the BOCC5a assessment (Stanbury *et al*., 2024). The recent Seabirds Count estimated a population of 301,520 (225,015 individuals recorded) breeding adults across the UK, which represents an 18% increase since Seabird 2000. The majority of the UK razorbill population is located in Scotland (62%) (Burnell *et al*., 2023). The Scottish population trend has been stable since Seabird 2000, with only a 2% decline recorded. However, more northerly Scottish colonies in Orkney and Shetland have experienced poor productivity over this period.

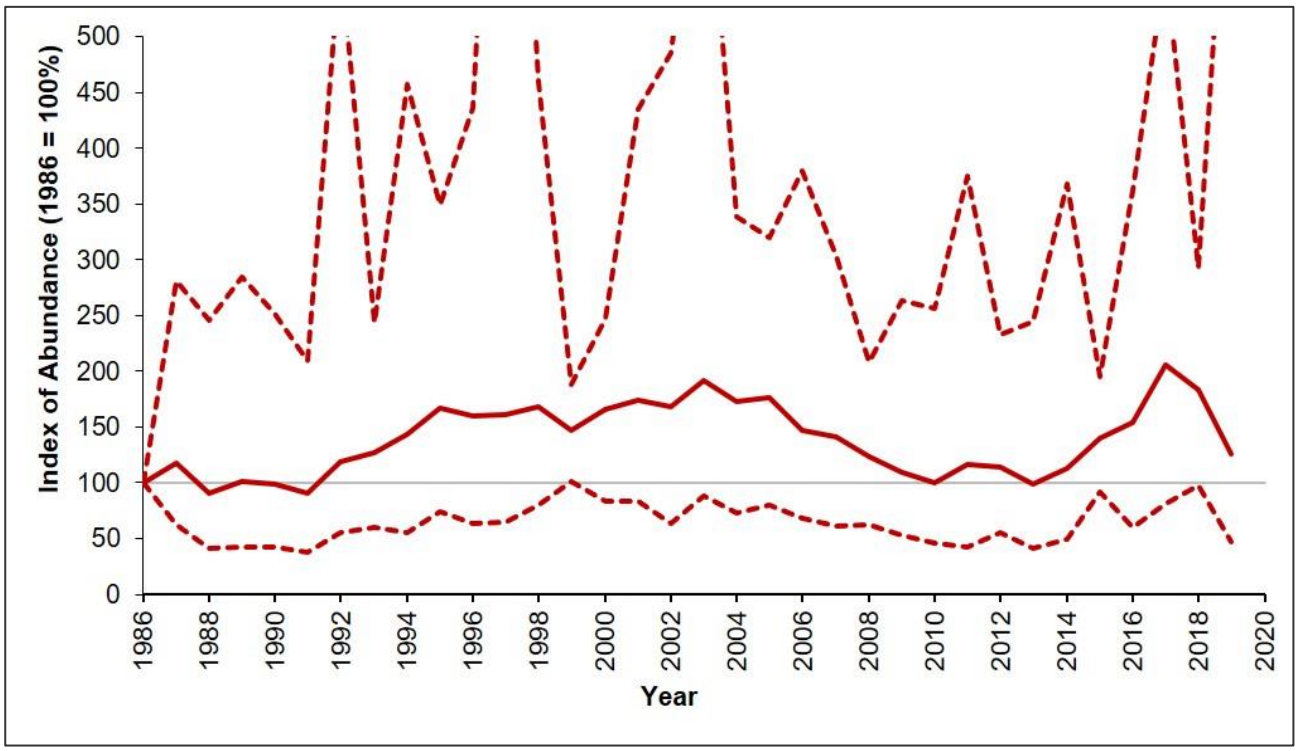
3.4.2.2 The population trend for razorbills in Scotland from available SMP (BTO, 2025) data is presented below in **Table 3.5** and **Plate 3.3**, taken from the JNCC SMP Report 1986 to 2019 (JNCC, 2021). These data indicate that the Scottish razorbill population has fluctuated through the decades, with an overall positive trend from 1986 to a peak in numbers in 2003.

Table 3.5 UK and Scotland razorbill population estimates and change between 1969 to 2021

Population	Demographic change	Operation Seafarer (1969 to 1970)	Seabird colony register (1985 to 1988)	Seabird 2000 (1998 to 2002)	Seabirds Count (2015 to 2021)
Scotland	Population estimate (breeding adults).	148,791	165,605	190,569	186,030
	% change since previous census.	N/A	11.30%	15.07%	-2.38%
UK	Population estimate (breeding adults).	175,502	206,653	255,132	301,520
	% change since previous census.	N/A	+17.75%	+23.46%	+18.18%

Table note: Population estimates are based on the number of individuals presented within Burnell *et al.* (2023) and corrected to breeding adults using a correction factor of 1.34 as recommended within Harris *et al.* (2015).

Plate 3.3 Razorbill abundance in Scotland between 1986 to 2019 (showing 95% confidence limits). Figure taken from JNCC (2021), based on SMP data.



3.4.2.3 A summary of the distributional response impacts apportioned to each designated site considered for razorbill, along with colony counts, condition and the percentage contributions of each designated site to the Scottish and UK populations, is provided in **Table 3.6**. It is unlikely that the level of effect described from the Project alone would cause any tangible change to the integrity of the overall site network compared to wider environmental factors or natural variability. It is therefore expected that this level of predicted impact would be indistinguishable from natural population fluctuations in isolation. Therefore, the Project is considered very low risk in terms of effect on the overall site network coherency for razorbill.

Table 3.6 Summary of designated sites considered for razorbill, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project

Designated site	Count of breeding adults (Burnell et al. 2023)	Summary condition	Percentage contribution to the Scottish site network (%)	Percentage contribution to the UK site network (%)	Proportion of SPA population impacted by the Project (Developers approach)	Proportion of SPA population impacted by the Project (Guidance approach)
Troup, Pennan and Lion's Heads SPA	6,054	Favourable	3.25	2.01	0.000 to 0.007	0.023 to 0.038
East Caithness Cliffs SPA	40,373	Favourable	21.70	13.39	0.000 to 0.001	0.001 to 0.002
Proportion of the total Scottish site network impacted by the Project: 0.001% to 0.002% (Guidance approach); 0.000% to <0.001% (Developers approach)						
Proportion of the total UK site network impacted by the Project: 0.001% (Guidance approach); 0.000% to <0.001% (Developers approach)						

3.4.3 Species pressures

3.4.3.1 To determine the key known pressures on razorbill the FeAST tool was used, with key pressures being those where razorbill was classified as high sensitivity or sensitive. These include:

- collision below water – high;
- introduction of microbial pathogens – high;
- introduction of non-indigenous species – high;
- litter – sensitive;
- transition elements and organo-metal contamination – sensitive;
- hydrocarbon and PAH contamination – high;
- physical loss – sensitive;
- reduction in availability or quality of prey – high;
- removal of non-target species – high;
- siltation rate changes – sensitive;
- synthetic compound contamination – sensitive;
- temperature change – high (regional);
- underwater noise – sensitive;
- visual disturbance – sensitive;
- water clarity changes – sensitive;
- wave exposure changes – sensitive; and
- climate change – high.

3.4.3.2 None of the pressures listed above were identified within the CMAs for each of the qualifying features in **Table 3.6**, therefore none are highlighted.

3.5 Puffin

3.5.1 Species ecology

3.5.1.1 Puffins are medium-sized auks that nest in burrows on offshore islands and on predator free areas of mainland coast. They feed on a variety of prey items including fish, crustaceans and molluscs, though key prey items are nearshore-schooling fish such as sandeel, sprat and herring. As pursuit divers, they forage by diving from the sea surface and swimming underwater, using their wings for propulsion. The largest proportion of puffins are found on the Western Isles of Scotland.

3.5.2 Site network coherency

3.5.2.1 Puffins are currently red-listed under the BOCC5a assessment (Stanbury *et al.,* 2024). Puffins are estimated to number 949,358 breeding adults across the UK, based on the recent Seabirds Count, representing a 14% decline since the Seabird 2000 census (Burnell

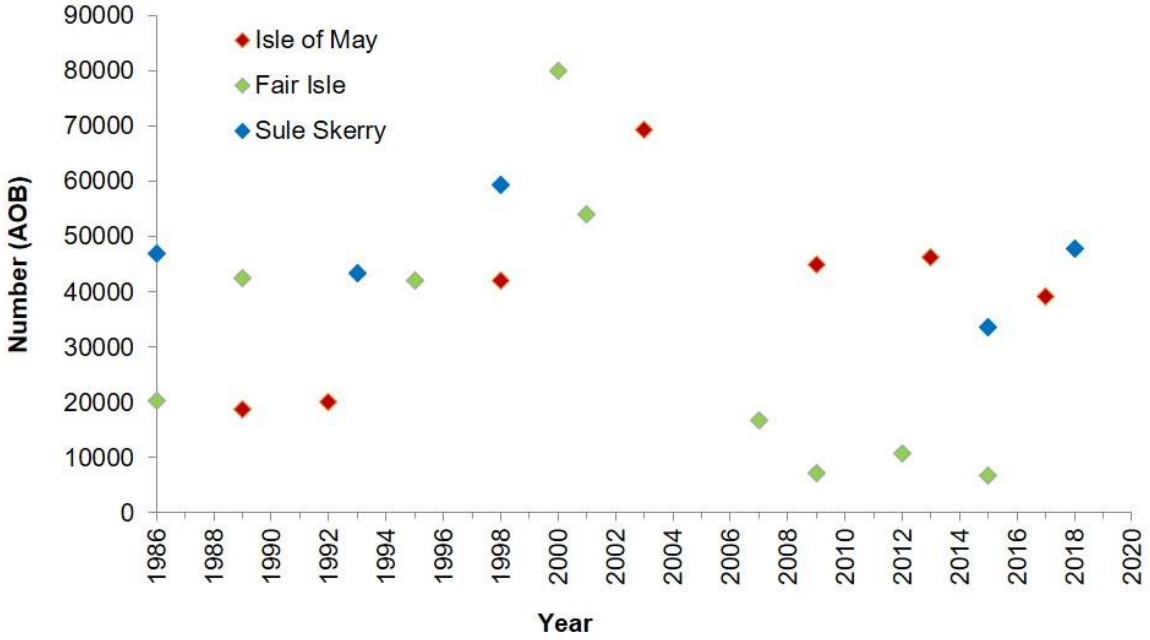
et al., 2023). Scotland supports the majority of the UK population (78%), with 369,279 pairs recorded in the most recent count. This reflects a 21% decline from the Scottish Seabird 2000 estimate. Puffin colonies are widely distributed along the Scottish coastline, with key concentrations in the north-east and the Northern Isles, including Shetland and Orkney.

3.5.2.2 The census data in **Table 3.7** indicate that the puffin population in Scotland increased steadily from 1968 through to 2002. There was then a significant decline in the puffin population from 2002 to the latest census in 2021. The population trends for puffins at three colonies in Scotland from available SMP (BTO, 2025) data are also presented below in **Plate 3.3**, taken from the JNCC SMP Report 1986 to 2019 (JNCC, 2021). Data for the full Scottish population are not presented due to the difficulties of monitoring puffin colonies, meaning that few counts are collected annually. However, the trends for these colonies appear to align with those described by the national census data (**Table 3.7**) for the period covered, with an increase until the early 2000s followed by a decline.

Table 3.7 Scottish puffin population estimates and change between 1969 to 2021

Population	Demographic change	Operation Seafarer (1969 to 1970)	Seabird colony register (1985 to 1988)	Seabird 2000 (1998 to 2002)	Seabirds Count (2015 to 2021)
Scotland	Population estimate (breeding adults).	820,022	876,202	932,802	738,558
	% change since previous census.	N/A	+6.85%	+6.46%	-20.82%
UK	Population estimate (breeding adults).	848,420	976,994	1,108,140	949,358
	% change since previous census.	N/A	+15.15%	+13.42%	-14.33%

Plate 3.4 Puffin abundance at three colonies in Scotland between 1986 to 2019. Figure taken from JNCC (2021), based on SMP data



3.5.2.3 A summary of the distributional response impacts apportioned to the Forth Islands SPA for puffin, along with the colony count, condition and the percentage contributions of each SPA to the Scottish and UK populations, is provided in **Table 3.8**. It is unlikely that the level of effect described from the Project alone would cause any tangible change to the integrity of the overall site network compared to wider environmental factors or natural variability. It is therefore expected that this level of predicted impact would be indistinguishable from natural population fluctuations in isolation. Therefore, the Project is considered very low risk in terms of effect on the overall site network coherency for puffin.

Table 3.8 Summary of designated sites considered for puffin, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project

SPA	Count of breeding adults (Burnell *et al.,* 2023)	Summary condition	Percentage contribution to the Scottish site network	Percentage contribution to the UK site network	Proportion of SPA population impacted by the Project (Developers approach)	Proportion of SPA population impacted by the Project (Guidance approach)
Forth Islands SPA	85,846	Favourable	11.62%	9.04%	0.000 to 0.001%	0.005 to 0.008%
Proportion of the total Scottish site network impacted by the Project: 0.001% (Guidance approach); <0.001% (Developers approach)						
Proportion of the total UK site network impacted by the Project: <0.001% to 0.001% (Guidance approach); <0.001% (Developers approach)						

3.5.3 Species pressures

3.5.3.1 To determine the key known pressures on puffin the FeAST tool was used, with key pressures being those where puffin was classified as high sensitivity or sensitive. These include:

- collision below water – high;
- hydrocarbon and PAH contamination – high;
- introduction of microbial pathogens – sensitive;
- introduction of non-indigenous species – high;
- litter – sensitive;
- nitrogen and phosphorous enrichment – sensitive;
- physical loss – sensitive;
- reduction in availability or quality of prey – high;
- removal of non-target species – high;
- siltation rate changes – high;
- synthetic compound contamination – sensitive;
- transition elements and organo-metal contamination – sensitive;
- underwater noise – sensitive;
- water clarity changes – sensitive; and
- wave exposure changes – sensitive.

3.5.3.2 None of the pressures listed above were identified within the CMAs for each of the qualifying features in **Table 3.8**, therefore none are highlighted.

3.6 Gannet

3.6.1 Species ecology

3.6.1.1 Gannets are the largest seabirds in the North Atlantic, nesting in coastal cliffside colonies typically on offshore islands away from terrestrial predators. They hunt by performing plunge dives from heights of up to 30 metres (m), reaching depths of around 20m below the surface to capture prey. The most common prey species of gannet include mackerel, herring, and cod-type fish, although sandeel and scavenging on offal and fishery discards are also recorded (Burnell *et al.*, 2023).

3.6.2 Site network coherency

3.6.2.1 Gannets are estimated to number at least 608,352 breeding adults across the UK according to the Seabirds Count (Burnell *et al.*, 2023). This represents a 39% increase since the 2003 to 2005 census, continuing a long-term trend of population growth, with an estimated 2% annual increase since the early 20th century. Scotland supports 71% of the UK population, with 509,546 breeding adults estimated.

3.6.2.2 It should be noted that, since the data informing the Seabirds Count (Burnell *et al*., 2023), gannets have been impacted by outbreaks of Highly Pathogenic Avian Influenza (HPAI) in 2022 as detailed in **Volume 3, Appendix 12.1: Offshore and Intertidal Ornithology Baseline Report** of the **EIA Report**. At Bass Rock, the population experienced a 31% decline between the 2014 count and the more recent 2023 count (Harris *et al*., 2023). However, more recent work has shown that gannets are primarily recovering from HPAI, with breeding productivity of recovered individuals being similar to those unimpacted by HPAI (Lewis *et al*., 2025).

3.6.2.3 The census data in **Table 3.9** indicate that the gannet population in Scotland increased significantly from 1968 to 1995. The population increased more steadily from 1995 to 2002, before declining slightly from 2002 to 2005. The Scottish gannet population then increased significantly from 2005 until the latest census in 2021.

Table 3.9 Scottish gannet population estimates and change between 1969 to 2021

Population	Demographic change	Operation Seafarer (1969 to 1970)	Seabird colony register (1985 to 1988)	Gannet Census (1994 to 1995)	Seabird 2000 (1998 to 2002)	Gannet Census (2003 to 2005)	Seabirds Count (2015 to 2021)
Scotland	Population estimate (breeding adults).	193,720	255,734	334,814	374,726	365,022	509,546
	% change since previous census.	N/A	+32.01%	+30.92%	+11.92%	-2.59%	+39.59%
UK	Population estimate (breeding adults).	226,012	314,494	393,076	441,206	437,090	608,352
	% change since previous census.	N/A	+39.15%	+24.99%	+12.24%	-0.93%	+39.18%

3.6.2.4 A summary of the combined distributional response and collision impacts apportioned to each SPA considered for gannet, along with colony counts, condition and the percentage contributions of each SPA to the Scottish and UK populations, is provided in **Table 3.10**. It is unlikely that the level of effect described from the Project alone would cause any tangible change to the integrity of the overall site network compared to wider environmental factors or natural variability. It is therefore expected that this level of predicted impact would be indistinguishable from natural population fluctuations in isolation. Therefore, the Project is considered very low risk in terms of effect on the overall site network coherency for gannet.

Table 3.10 Summary of designated sites considered for gannet, including colony counts, condition of the site, importance of the site and proportion of the designated site population impacted by the Project

SPA	Count of breeding adults (Burnell *et al.,* 2023)	Summary condition	Percentage contribution to the Scottish site network (%)	Percentage contribution to the UK site network (%)	Proportion of SPA population impacted by the Project (Developers approach)	Proportion of SPA population impacted by the Project (Guidance approach)
Forth Islands SPA	150,518	Favourable	29.54%	24.74%	0.011 to 0.011%	0.011 to 0.014%
Hermaness, Saxa Vord and Valla Field SPA	59,124	Favourable	11.60%	9.72%	0.005 to 0.005%	0.005 to 0.006%
Fair Isle	9,942	Favourable	1.95%	1.63%	0.015 to 0.015%	0.015 to 0.018%
Proportion of the total Scottish site network impacted by the Project: 0.004% to 0.005% (Guidance approach); 0.004% (Developers approach)						
Proportion of the total UK site network impacted by the Project: 0.003% to 0.004% (Guidance approach); 0.003% to 0.004% (Developers approach)						

3.6.3 Species pressures

3.6.3.1 To determine the key known pressures on gannet the FeAST tool was used, with key pressures being those where gannet was classified as high sensitivity or sensitive. These include:

- barrier to species movement – high;
- introduction of light or shading – sensitive;
- introduction of microbial pathogens – sensitive;
- introduction of non-indigenous species – sensitive;
- N and P enrichment – sensitive;
- litter – high;
- transition elements and organo-metal contamination – sensitive;
- physical loss – sensitive;
- removal of non-target species – high;
- removal of target species – sensitive;
- synthetic compound contamination – sensitive;
- temperature change – sensitive;
- wave clarity changes – sensitive;
- wave flow changes – sensitive;
- wave exposure changes – sensitive; and
- climate change – sensitive.

3.6.3.2 None of the pressures listed above were identified within the CMAs for each of the qualifying features in **Table 3.10**, therefore none are highlighted.

3.7 Conclusion

3.7.1.1 In summary of the species considered above, the impacts to populations being across the sites is significantly limited, although as concluded within the RIAA, passes the threshold to be unable to rule out AEoSI for Guillemot at Buchan Ness to Collieston Coast SPA (Project alone and in-combination), Troup, Pennan and Lion's Heads SPA (in-combination only) and Copinsay SPA (in-combination only).

3.7.1.2 Impacts to kittiwake, razorbill, puffin and gannet, are considered to be very low, and as demonstrated, emphasise the limited nature of the impacts the Project is at risk of causing. However, they have been included and considered on a 'without prejudice' basis.

4. Step 3: Identification of Potential Compensation Measures

4.1 Guidance

4.1.1.1 Current guidance (**Section 1.2**) advises that when identifying potential compensation measures, they should ideally support the same ecological feature and designated site that may be affected by the proposed development. However, in the case of seabirds, due to their wide-ranging behaviour and the complex array of pressures currently influencing the marine environment, it is recognised that achieving direct, like-for-like compensation is not always possible (ABPmer, 2025; MD-LOT, 2024; Defra, 2021).

4.1.1.2 To address this challenge, a tiered approach is recommended for evaluating and selecting appropriate compensation options (ABPmer, 2025; MD-LOT, 2024; Defra, 2021). As the hierarchy progresses, the relationship between the compensation measure and the affected feature becomes less direct, and the likelihood of success may decrease. Consequently, lower-tier measures may require a greater scale of intervention to achieve equivalent ecological benefit.

4.1.1.3 The following hierarchy outlines the approach taken in identifying suitable compensation measures, with tier 1 offering the highest confidence in directly benefiting the potentially affected features in **Table 2.1**, and tier 3 representing the least direct connection, though may still have strong certainty of success and benefit:

- **Tier 1: Benefit to the Impacted Feature:** compensatory measures that provide ecological benefit(s) for the impacted feature in a measurable way, i.e., where there is clear evidence that the intervention will be effective in benefiting the impacted feature. This type of measure is commonly referred to as ‘like-for-like’ or direct beneficial measure.
- **Tier 2: Benefit to a Similar Feature:** compensatory measures that provide sufficient evidence of ecological benefit(s) to features, or groups of features which are ecologically similar to the impacted feature. This type of measure assumes compensation measure benefits the same species as the impacted qualifying feature, but the benefit is delivered at a different location within the broader UK site network rather than at the designated site itself; and
- **Tier 3: Benefit to Protected Site Network:** compensatory measures that provide sufficient evidence of ecological benefit(s) to the protected site network more widely. This type of measure is commonly referred to as ‘none like-for-like’ and may not necessarily benefit the same potentially impacted species, though is considered to provide proportional benefit to the wider site network.

4.1.1.4 It should be noted that the Applicant’s preferred pathway for delivery compensation is through strategic compensation, specifically through the SMRF. This delivery pathway enables delivery of measures with a larger-scale benefit and reduces duplication of effort across multiple offshore wind farm projects working to benefit similar species. The SMRF is currently in planning and subject to consultation before finalisation, though it is expected this will be in place prior to operation of the Project (ABPmer, 2025).

4.2 Ranking of compensation measures

4.2.1.1 To provide an assessment of feasibility and suitability of potential measures identified for the longlist, an assessment was undertaken utilising the six ranking criteria outlined within European Commission (2007) and Defra (2021) as a guidance source, with refinements to final scores inclusive of expert judgement. Measures were given a rank from one to five for each of these criteria, with each measure receiving a resulting overall score out of 30. An overview of these criteria is presented in **Table 4.1** below.

Table 4.1 Compensation measure suitability ranking

Metric	Specificity	Effectiveness	Delivery timeframe	Technical delivery	Conservation value	Extent
Description	The proposed compensation measure should focus on providing benefits to the conservation objectives of the potentially affected qualifying feature at the impacted location.	How high is the confidence level that the measure will deliver effective and sustainable compensation for the impact of the project?	What is the timeframe within which the compensation measure is expected to be functioning and contributing to the network?	Can the measure be delivered successfully from a technical, financial and legal perspective, and be monitored and managed appropriately?	What is the wider environmental benefit provided by the proposed measure?	Can the scale of the proposed compensation measure be accurately quantified / predicted?
Ranking Score of 5	The compensation measure benefits the impacted feature at the impacted site.	There is strong evidence of the effectiveness of the measure. It provides similar ecological function and does not negatively impact other sites or features.	There is certainty that the compensation measure will be functioning within immediate implementation.	There is strong evidence that the delivery of this compensation measure is achievable without substantial challenge and there is certainty in expected outcomes.	In addition to benefitting the target feature, the measure will benefit other features and / or habitats, including sites and / or species of conservation interest or concern.	There is certainty that the benefit of the measure can be suitably quantified and amended to meet the requirements of the compensation ratio.
Ranking Score of 4	The compensation measure can be utilised by impacted feature from the impacted site.	There is some evidence of the effectiveness of the measure and that it provides a similar ecological function.	The measure will require a lead in time of several years after implementation. There is certainty that the measure will be effective at the point of impacts	There is evidence that the delivery of this measure is achievable but with some challenge and / or uncertainty of the outcomes. Further evidence	In addition to benefitting the target feature, the measure benefits multiple other features and / or habitats.	There is some uncertainty that the benefit of the measure can be suitably quantified but can be amended to meet the required compensation ratio.

Metric	Specificity	Effectiveness	Delivery timeframe	Technical delivery	Conservation value	Extent
			being predicted to occur.	gathering may be beneficial to reduce uncertainty.		
Ranking Score of 3	The compensation measure benefits the impacted feature but at a different site.	There is some evidence of the effectiveness of the measure on the impacted feature but at a different location.	The measure will require a lead in time of several years after implementation. There is some certainty that the measure will be effective at the point of impacts being predicted to occur, but a higher compensation ratio may need to be assumed to accommodate for uncertainty.	There is some evidence of delivery of this measure being achievable, though some uncertainty exists regarding expected outcomes. Further evidence gathering would be recommended to reduce uncertainty.	In addition to benefitting the target feature, the measure benefits one additional feature or habitat.	There is certainty that the benefit of the compensation can be suitably quantified but the ability of the measure to meet the required compensation ratio is uncertain.
Ranking Score of 2	The compensation measure benefits a different feature at the impacted site.	There is little to no evidence on effectiveness of the measure on the impacted feature at the impacted site but some evidence for effectiveness of the measure for a broadly similar feature / location.	The measure will require a lead in time of up to ten years from implementation to be functioning. There is little certainty that the measure will be effective at the point of impacts being predicted to occur and a higher compensation ratio would be required to	There is little to no evidence currently of the delivery of this measure with considerable uncertainty with regard to expected outcomes. Further evidence gathering would be required to reduce uncertainty.	The measure is expected to overcompensate (deliver more than the compensation ratio), providing benefit to the impacted feature.	There is some uncertainty of the predicted benefit of the measure and it is unlikely the required compensation ratio will be met.

Metric	Specificity	Effectiveness	Delivery timeframe	Technical delivery	Conservation value	Extent
			accommodate for uncertainty.			
Ranking Score of 1	The compensation measure benefits a different feature at a different site.	There is little to no evidence of the effectiveness of the measure and no evidence of effectiveness of measure on other features.	There is no certainty and limited evidence that the compensation measure will be functioning within ten years therefore a significantly high compensation ratio would be necessary.	There is no evidence of the technical delivery of this measure with considerable uncertainty regarding expected outcomes Or the feasibility of the measure is not possible to implement from either a technical, financial or legal perspective.	The measure is expected to deliver only the required compensation for the target feature at the ratio required.	There is significant uncertainty in the predicted benefits of the measure and it is unlikely the required compensation ratio will be met.

4.2.1.2 To provide context for each suitability ranking concluded, an overview is provided on how the proposed measure will provide additionality, and also on how the measure can be monitored and adapted. These details are presented for each measure in respective tables in **Section 4.2.2** below.

4.2.2 Potential compensation measures

4.2.2.1 **Table 4.2** to **Table 4.18** outlines the potential measures.

Table 4.2 Strategic compensation measures fund contribution

Strategic environmental fund contribution	
Type of measure	Strategic led compensation
Description	Funding contribution to a national / sectoral Marine Recovery Fund (MRF), which in turn will aim to deliver a portfolio of relevant seabird / ecosystem projects. Such compensation is expected to be enacted through contribution to the SMRF, though financial support to other existing frameworks may be considered. The Scottish Government is currently developing a portfolio of potential strategic compensatory measures, including "*predator control and biosecurity*", "*habitat management and restoration, and reduction of disturbance at colony*", "*fisheries management compensatory measures*", "*restoring and enhancing supporting prey habitats*", and "*marine litter removal at scale*" (Scottish Government, 2025).
Applicable species	Applicable species highly dependent on the measure delivered by the relevant body. This may also be delivered as non-like-for-like compensation, noting recent active consultations by Defra and Scottish Government propose the enablement of wider compensation measures that target a similar feature to the feature impacted or large-scale pressures on the protected site network. Such legislative reform is currently expected to be completed prior to the determination of the offshore consenting applications for the Project (ABPmer, 2025).
Spatial extent	Location dependant on the measures being funded.
Implementation and duration	At time of writing, the SMRF is still in development and not currently available, however this option is expected to be available prior to project operation in 2037.
Technical feasibility and additionality	High – measure will be delivered through a separate organisation, though it is expected a steering group will be set up to critically review and select projects for implementation. Given the wider scale of delivery of strategic options, this is expected to be of higher technical feasibility, and able to benefit multiple projects.
Financial feasibility	High – It is expected that predictable, scheduled contributions to the fund can be made, linked to impact scale / conditions.
Legal feasibility	High – Although the SMRF is not currently available, it is anticipated once established that there will be no legal barriers for facilitation.
Monitoring potential	Highly dependent on the measures being delivered by the fund, though likely success can be monitored through outcome indicators, audited reports and independent evaluations. Any monitoring and adaption of SMRF measures would be the responsibility of the fund operator and/or the Scottish Ministers rather than the Applicant.
Adaptability	Dependant on the measures available as part of the fund, though it is expected that steering groups will be available to input into running of measures.

Strategic environmental fund contribution	
Evidence for measure	Dependant on measure being delivered, though expected that any measure adopted by the SMRF will be concluded as having sufficient evidence to support its predicted benefit.
Suitability ranking	Specificity: 5 Effectiveness: 5 Delivery Timeframe: 5 Technical Delivery: 5 Conservation Value: 5 Extent: 5 Overall suitability: 30

Table 4.3 Biosecurity and incursion prevention (island colonies)

Biosecurity and incursion prevention (island colonies)	
Type of measure	Measure is anticipated to be part of the SMRF portfolio (see **Table 4.2**) under "predator control and biosecurity" allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Prevent introduction of invasive predators to predator-free islands via access controls, quarantine protocols, detector dogs / trap-lines and rapid-response plans. Could be delivered by funding pre-existing biosecurity / eradication / control programmes which are funding deficient in the long term. Alternatively, bio-security measures could be implemented where there is no pre-existing bio-security but predation is evidenced as having an impact on a colony.
Applicable species	Predominantly guillemot, razorbill, puffin and other burrow nesters, for which invasive predators are a key threat. However, this measure has the potential to benefit kittiwake (and other gull species) / gannet depending on site and pressures.
Spatial extent	Can be applied to pre-existing predator-free islands or mainland colonies.
Implementation and duration	Immediate start, and ongoing biosecurity and monitoring throughout operational lifetime of the Project.
Technical feasibility and additionality	High – Biosecurity protocols (quarantine, surveillance, rapid response) are well-established and of low-complexity, with demonstrated importance for sustaining eradication gains. Island case studies show routine implementation at UK SPAs (for example, pathway control, detector dogs) (Jones *et al*., 2016; Russell *et al*., 2019). Given the presence of the Biosecurity for Life programme (which ran from August 2018 to July 2023), it is necessary to ensure measures are either additional to what has already been implemented through this project or seeks to ensure pre-existing measures can remain in place where funding is no longer available. Given the proposals for predator eradication measures as compensation for other projects, there is potential for this to be delivered as a complimentary co-ordinated approach to maximise success of measures. This measure has also been identified within Scottish Governments portfolio of current research projects being considered for strategic compensation (Scottish

Biosecurity and incursion prevention (island colonies)	
	Government, 2025). It should be noted that, despite the significant benefits this measure will bring for seabird species, quantification of benefit may be difficult owing to this measure preventing a negative pressure as opposed to removing it. Land access / land owner agreement may pose a barrier to implementation for Project-led approach.
Financial feasibility	Medium – Measure will have operating expenditures (staff training, inspections, detector consumables) and will require sustained work over the operational timeframe of the Project. Additionally, monitoring costs will be required if quantification of benefit is required.
Legal feasibility	High – Aligns with designated site objectives and Habitats Regulations; requires Risk Assessment Method Statement (RAMS) and access permissions but no fundamental legal barrier.
Monitoring potential	Monitoring of predator presence is well evidenced and has high potential. For example, camera traps, bait traps, chew-sticks which can all be regularly monitored.
Adaptability	Extent of monitoring can be scaled up if deemed appropriate, and if predator presence is identified then the eradication protocols can be adopted.
Evidence for measure	Global syntheses show that preventing or removing invasive mammals on islands yields substantial seabird gains (nesting success, survival, recolonisation); biosecurity is critical to sustain outcomes (Jones *et al.,* 2016; Brooke *et al.,* 2017; Russell *et al.,* 2019). The Biosecurity for Life programme has shown success in communicating the importance of biosecurity and implementing biosecurity especially on more accessible islands, though notes the need for further investment into technologies and tools (e.g., conservation detection dogs and software recognition for rodents) (Biosecurity for Life, 2023a).
Suitability ranking	Specificity: 4 Effectiveness: 5 Delivery Timeframe: 5 Technical Delivery: 4 Conservation Value: 5 Extent: 3 Overall suitability: 26

Table 4.4 Conservation management funding

Conservation management funding	
Type of measure	Measure is anticipated to be part of the SMRF portfolio (see **Table 4.2**) under "habitat management and restoration" allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Support unfunded actions from SPA / site plans (for example, wardening, vegetation clearance, litter removal, predator control, disturbance management, habitat modification). This may include measures outlined in management plans or similar that have been discontinued / scaled back (for example, due to limited funds / resource), or measures which have not yet been realised / fully implemented.to ensure additionality, measures to be funded would only be selected where it can be clearly demonstrated that there is no long term possibility of such a management measure being achieved. Measure would not seek to fund routine management measures as this would lack the provision of additionality.
Applicable species	Site-specific features (kittiwake / gannet / auks as relevant).
Spatial extent	Specific SPAs.
Implementation and duration	Measure can be implemented immediately with multi-year contracts as appropriate throughout the operational lifetime of the Project.
Technical feasibility and additionality	High – Uses proven actions delivered by existing site managers under Key Performance Indicator (KPI) contracts. To ensure additionality, this would encompass measures that are considered necessary for the site but are unlikely to be commenced in the near future or have been discontinued without plans to re-initiate the measure(s). This is likely to be achieved through review of site(s) management to determine where this is not currently being sufficiently delivered.
Financial feasibility	High – Highly scalable budgeting across sites and measures.
Legal feasibility	High – Works are routinely consented under SPA processes.
Monitoring potential	Results-based KPIs depending on the measure (for example, wardening hours, percentage compliance, hectares cleared) plus ecological outcomes (Apparently Occupied Nest / productivity pre-and post-measure implementation).
Adaptability	Reallocation of budget to best-performing sites / actions and / or inclusion of further conservation measures if required.
Evidence for measure	Highly dependent on the measure to be implemented and site specific, though implemented measures will be those which are evidenced as having a pressure on the colony based on available evidence and / or SPA management objectives. Evidence for measures such as vegetation management, disturbance reduction and colony enhancement are provided separately below.
Suitability ranking	Specificity: 4 Effectiveness: 4 Delivery Timeframe: 5 Technical Delivery: 5

Conservation management funding	
	Conservation Value: 4 Extent: 4 Overall suitability: 26

Table 4.5 Invasive mammal eradication (islands)

Invasive mammal eradication (islands)	
Type of measure	Measure is anticipated to be part of the SMRF portfolio (see **Table 4.2**) under "predator control and biosecurity" allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Invasive mammalian predators (for example, brown rats, mink, stoats, and hedgehogs) have caused severe declines or local extinctions of breeding seabirds at UK island colonies (Lock, 2006; Lambert *et al.,* 2015; Jones *et al.,* 2008; Borrelle *et al.*, 2018). Removal of invasive predators (through trapping or lethal control) can reduce chick predation, leading to increased productivity and population recovery.
Applicable species	Predominantly auk species, terns, Manx shearwater and petrels, though potential benefits to gannet and gull species depending on the site.
Spatial extent	Islands with known invasive predator pressure and low reinvasion risk.
Implementation and duration	This measure requires sufficient lead in time prior to project operation, with ~one to three years required for eradication. Following eradication, benefits would accrue when surviving chicks reach breeding age (four years for kittiwake, five years for razorbill, six years for guillemot). Ongoing monitoring would be required throughout operational lifetime of the Project.
Technical feasibility and additionality	High – Integrated baiting / trapping and verification methods have a strong global track record; success depends on robust planning and post-project biosecurity to prevent reinvasion (Holmes *et al.,* 2015; Jones *et al.,* 2016; Kappes *et al.,* 2019). To ensure additionality, the measure should target islands where invasive predators are known to impact seabirds but where control is not currently planned or underway. Alternatively, the measure could support existing eradication schemes that lack sufficient funding or capacity, provided the contribution enables delivery of actions that would not otherwise occur. Collaborative delivery with other projects or stakeholders may enhance feasibility and impact. This measure has also been identified within Scottish Governments portfolio of current research projects being considered for strategic compensation (Scottish Government, 2025).
Financial feasibility	Low / medium – high upfront costs (for example, planning, baiting logistics, verification) varies with island size / access.
Legal feasibility	High / medium - This measure would require licenses for wildlife control, potential agreements to access sites (site dependant). No potential impacts expected requiring Environmental Impact Assessment (EIA) or HRA are expected as this measure would target invasive species.

Invasive mammal eradication (islands)	
Monitoring potential	Monitoring of predator presence (for example, camera traps, bait traps, chew-sticks), and pre- and post- eradication monitoring of colony productivity.
Adaptability	If required, this may involve changing the eradication methods (for example, bait type), and re-eradication of the island if predators become re-introduced. The implementation of bio-security measures could be provided as adaptive management to reduce the risk of re-invasion.
Evidence for measure	Invasive predators are identified as a key pressure for seabirds. Eradication and control of predators is well evidenced across multiple species for increasing both breeding numbers and productivity. For example, a rat eradication at Canna and Sanday resulted in recolonisation of previously empty areas of guillemot colony, and an increase in razorbill numbers (Swann, 2013; Luxmoore *et al.,* 2019). Similarly, eradication of rats at Lundy Island led to evident increases in guillemot and razorbill breeding numbers (BTO, 2025).
Suitability ranking	Specificity: 4 Effectiveness: 5 Delivery Timeframe: 4 Technical Delivery: 5 Conservation Value: 5 Extent: 3 Overall suitability: 26

Table 4.6 Vegetation management at colonies (tree mallow removal and habitat structure)

Vegetation management at colonies (tree mallow removal and habitat structure)	
Type of measure	Measure is anticipated to be part of the SMRF portfolio (see **Table 4.2**) under “habitat management and restoration” allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers either through funding management works (see **Table 4.4**) or direct project involvement. This would be dependent on the scale of compensation required and opportunities available.
Description	Non-native plants and scrub encroachment (for example, tree mallow) can reduce nest site availability at seabird colonies. Habitat management, such as removing invasive species or clearing overgrown vegetation, can improve or expand nesting areas. This may allow a colony to support more breeding pairs and increase fledging success, contributing to overall population growth.
Applicable species	Applicable to all species though dependant on site.
Spatial extent	Colonies with vegetation encroachment.
Implementation and duration	Measure can be implemented immediately and maintained throughout operational lifetime of the project, with the frequency of habitat clearance dependant on the site and nature of work required. Works would likely be restricted to the non-breeding season when birds are not present at the colony.

Vegetation management at colonies (tree mallow removal and habitat structure)	
Technical feasibility and additionality	High – Habitat management is a core conservation strategy at breeding SPAs. For it to serve as a compensation measure, suitable colonies must be identified where such management is not already in place or does not form part of the management strategy for the SPA, ensuring additionality. Alternatively, it may be appropriate at sites where the scale of required intervention exceeds current management capacity or funding which means there is no likelihood of the management measure being implemented in the foreseeable future. Quantifying the measure's effectiveness in compensating for a project predicted impacts may be challenging, particularly from a like-for-like perspective, as monitoring may not fully capture the broader ecological benefits. Clearance techniques are generally straightforward and repeatedly delivered on sites such as Forth Islands. Site logistics (boat access, slopes) are manageable with trained teams (Scottish Seabird Centre, 2025). Additionality will be provided either through identification of new sites for habitat management or scaling up of existing / planned management programmes.
Financial feasibility	Medium / high – Funding towards contractors for discrete packages of work, or funding for an additional site manager, alongside potential equipment for vegetation clearance.
Legal feasibility	High – Potential agreements needed with landowners prior to work being undertaken depending on site. If work is at a designated site, it would need to be confirmed the measure does not conflict with conservation objectives of a site (for example, of other non-ornithological features).
Monitoring potential	Monitoring of vegetation cover (for example, quadrats of photography), and before-after monitoring of colony productivity.
Adaptability	Adjust extent of vegetation clearance, or techniques of clearance, and / or frequency of vegetation removal.
Evidence for measure	Dense tree mallow can block puffin burrow access and depress nesting; coordinated, repeated clearance restores access and improves colony condition (Scottish Seabird Centre, 2025). Presence of tree mallow on Craigleith linked to reductions in puffin numbers, as well as nearby islands of Fidra and the Lamb (Scottish Seabird Centre, 2025). Tree Mallow removal at these sites (delivered through project 'SOS Puffin') has shown benefits to puffin and other nesting birds such as eider and fulmar (Scottish Seabird Centre, 2025).
Suitability ranking	Specificity: 3 Effectiveness: 3 Delivery Timeframe: 4 Technical Delivery: 5 Conservation Value: 4 Extent: 4 Overall suitability: 23

Table 4.7 Seagrass restoration

Seagrass restoration	
Type of measure	Measure may be part of the SMRF portfolio (see **Table 4.2**) under "restoring and enhancing supporting prey habitats", allowing for the option of strategic delivery once the SMRF is established. Measure could be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Seagrass meadows have declined due to pressures such as coastal development, pollution, and fishing activity. Restoration or enhancement of these habitats could indirectly benefit breeding seabirds by increasing prey availability. Seagrass meadows support fish densities up to 4.6 times higher than adjacent sandy substrates (Gamble *et al.,* 2021), offering a significant boost to prey biomass. Increased prey availability can enhance survival and productivity of seabirds.
Applicable species	All key species, especially those feeding on species supported by seagrass habitat
Spatial extent	Suitable bays / estuaries (suitability study would be needed to identify historic and current known locations of seagrass). Restoration areas would ideally be within foraging range of relevant SPAs for potential impacted species to provide greater chance of direct benefit.
Implementation and duration	Restoration would be undertaken prior to operation, aiming for the meadow to be fully established and able to provide benefit (increased prey availability) by the operational stage of the Project. It is expected that monitoring would be required throughout the operational lifetime of the Project.
Technical feasibility and additionality	High – Established UK techniques for planting, protection and monitoring; ecological attribution to seabirds is indirect.
Financial feasibility	Medium / high – Costs associated with stock for planting and protection of the site, alongside monitoring costs.
Legal feasibility	Medium / high – Marine works consents / Special Area of Conservation / Site of Special Scientific Interest interactions; standard in UK coastal restoration projects. The relevance and appropriateness of this measure may increase following the enactment of legislative reforms expected shortly to redefine the purpose and scope of compensation.
Monitoring potential	Monitoring of seagrass cover (for example, quadrats), prey availability (for example, Baited Remote Underwater Video (BRUV) surveys). Monitoring of direct benefits to birds is likely to not be feasible, therefore agreement on extent of restoration required to adequately offset any risk of a project would need to be based on expert judgement.
Adaptability	Potential to amend scale at which restoration is occurring, and expand to other sites as needed.
Evidence for measure	Seagrass meadows support key prey species of seabird species (for example, herring; Kent *et al.,* 2022)). The multiple benefits of seagrass restoration is evidenced within prior literature studies (Unsworth and Butterworth, 2021).
Suitability ranking	Specificity: 4 Effectiveness: 3

Seagrass restoration	
	Delivery Timeframe: 3 Technical Delivery: 3 Conservation Value: 4 Extent: 4 Overall suitability: 21

Table 4.8 Disturbance reduction at colonies (wardening, access and visitor management)

Disturbance reduction at colonies (wardening, access and visitor management)	
Type of measure	Measure is anticipated to be part of the SMRF portfolio (see **Table 4.2**) under "reduction of disturbance at colony" allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers either through funding management works (see **Table 4.4**) or direct project involvement. This would be dependent on the scale of compensation required and opportunities available.
Description	Human recreational activities (for example, walking, birdwatching, water sports and drones) can disturb breeding seabirds at many colonies, resulting in increased energy expenditure and potential nest abandonment. Management measures like increased warden presence, installing signage, or restricting access through cordoned areas can help reduce disturbance. Limiting human access to sensitive zones may encourage nesting in previously disturbed areas and improve overall breeding productivity.
Applicable species	All species (location / colony dependant).
Spatial extent	Colonies where human disturbance is known to be impacting seabird populations, though focus would be on Scottish colonies.
Implementation and duration	Seasonal (impacts intensified in breeding season) or continuous. Immediate effects possible, can be implemented throughout operational lifespan of the Project.
Technical feasibility and additionality	Medium - Disturbance is known to negatively affect seabird breeding success, and therefore reduction in disturbance can increase colony productivity. For this to be a viable compensation measure, colonies must be identified where disturbance is impacting the colony, and disturbance reduction isn't already part of existing conservation efforts. Success can be measured based on increase in nest occupancy in areas previously affected by disturbance and / or via improvements in productivity. Quantification of success is feasible though requires detail monitoring to isolate the effects of these measures from natural population changes.
Financial feasibility	Medium – Funding required to support aspects such as seasonal staff (for example, wardens), signage and potentially minor works. Costs scale with visitor pressure and site complexity.

Disturbance reduction at colonies (wardening, access and visitor management)	
Legal feasibility	High – Standard consents for path / structure adjustments, and the measure would likely aligns with standard SPA conservation objectives (if done at SPA colonies). Land access agreements may be required.
Monitoring potential	Monitoring of disturbance events (visitors, water crafts etc), and before-after monitoring of colony productivity.
Adaptability	Extent of measure can be adapted as deemed appropriate (for example, increase warden presence, increase signage, increase buffer zones around colonies).
Evidence for measure	Behavioural-risk models for kittiwake / guillemot show productivity declines with higher visitor numbers at close approach, supporting dynamic buffers and access management (Beale and Monaghan, 2004; Beale, 2004). Recreational / human disturbance is also linked with reduced reproductive success in auks (Huddart and Stott, 2019).
Suitability ranking	Specificity: 4 Effectiveness: 3 Delivery Timeframe: 3 Technical Delivery: 3 Conservation Value: 4 Extent: 4 Overall suitability: 21

Table 4.9 Bycatch mitigation / prevention

Bycatch mitigation / prevention	
Type of measure	Measure could be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Seabirds are commonly recorded as bycatch in commercial fishing gear. Implementation of proven bycatch mitigation measures can reduce the extent of bycatch, directly reducing seabird mortalities. For example, the use of bird-scaring lines, offal management and line weighting are all highlighted by the Marine Directorate as well evidenced at reducing longline fishery bycatch (Marine Directorate, 2023).
Applicable species	Dependant on gear type (for example, static nets, longline, trawl), though fulmar, gannet, guillemot, razorbill, puffin are regularly recorded as bycatch. Measure also has the potential to benefit other marine species, such as marine mammals.
Spatial extent	Dependant on locations where seabird bycatch of relevant species is well evidenced, though focus is expected to be within the Scottish North Sea region to ensure measure has the greatest chance of benefiting Scottish seabirds.
Implementation and duration	Measure can be implemented throughout the operational lifetime of the Project, though monitoring of bycatch levels and mitigation measures may be required prior to operation.

Bycatch mitigation / prevention	
Technical feasibility and additionality	Medium – Seabird bycatch levels are well evidenced in UK waters, and several mitigation measures are also well evidenced, though research on long-term success of bycatch mitigation technologies is ongoing. Pre- and post- bycatch mitigation monitoring (or comparison to a control) would be needed to quantify measure success. Success of the measure will largely be dependent on whether enough commercial fishing vessels opt in for implementing bycatch measures implementation and monitoring.
Financial feasibility	Low – Data gaps currently exist on the scale, and distribution of bycatch within Scottish waters. Intensive baseline monitoring likely required before implementation, to characterise locations and commercial fishing activity where bycatch is happening. Such monitoring is expected to have high funding costs. Similarly, monitoring of bycatch levels post-implementation will also be required which will have high funding costs. Measure would likely be implemented via funding incentives for commercial fishing vessels to purchase and use bycatch mitigation equipment.
Legal feasibility	Medium – Dependant on the scale of the measure - large-scale delivery of bycatch mitigation would likely require legislative changes in Scotland, while small-scale measures could be more easily delivered through direct liaison with specific vessels.
Monitoring potential	Monitoring of bycatch numbers can be done either through onboard observers or camera / video monitoring which can then be reviewed by a third party either manually or potential for Artificial Intelligence to be used to identify species caught.
Adaptability	Measure is easily adaptable through ongoing monitoring. Measure can be scaled up to include more vessels, and altering mitigation options applied where appropriate.
Evidence for measure	Global reviews show high seabird mortality in gillnets and effective reductions via gear / operational changes (for example, illumination, acoustic / visual cues). Bycatch of fulmar and gannet is well evidenced in Scottish waters (for example, Northridge *et al.* (2020) with estimations of several hundred gannet caught each year, predominantly in demersal longline fisheries). Mitigation measures are well evidenced, with proven measures (for example, weighted lines, bird scaring lines) reducing seabird bycatch. (Žydelis *et al.,* 2013; Melvin, 2002; Kingston *et al.,* 2023)).
Suitability ranking	Specificity: 3 Effectiveness: 4 Delivery Timeframe: 3 Technical Delivery: 3 Conservation Value: 4 Extent: 4 Overall suitability: 21

Table 4.10 Ghost gear and marine litter removal

Ghost gear and marine litter removal	
Type of measure	Measure is anticipated to be part of the SMRF portfolio (see **Table 4.2**) under "marine litter removal at scale" allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Marine debris, particularly discarded fishing gear such as nets and lines, poses a significant threat to seabirds through entanglement and ingestion, often resulting in injury or mortality. Removing this debris from the marine environment would reduce these risks, potentially leading to increased survival rates and contributing to population recovery. In addition to direct benefits for seabirds, debris removal supports wider ecosystem health by reducing plastic accumulation and its transfer through the food web. This can improve the condition of prey species and reduce the burden of ingested plastics in predators. This measure has also been identified within Scottish Governments portfolio of current research projects being considered for strategic compensation (Scottish Government, 2025).
Applicable species	All species.
Spatial extent	At colonies and nearshore environment.
Implementation and duration	Measure to be implemented throughout lifetime of Project, either seasonally (ideally prior to the breeding season) or year round depending on location of debris removal – breeding season will likely need to be avoided if debris removal is being undertaken at the colony itself to reduce disturbance.
Technical feasibility and additionality	Medium – Methods (shore / ledge clean-outs, rope exchange) are straightforward with trained teams; evidence of rope / plastic hazards at colonies is strong (O'Hanlon *et al.,* 2017; Votier *et al.,* 2011). However, direct linkage between the amount of debris removed and subsequent benefit is considered unquantifiable. The relevance and appropriateness of this measure may increase following the enactment of legislative reforms expected shortly to redefine the purpose and scope of compensation.
Financial feasibility	High – Generally low costs (potential costs of Personal Protective Equipment), and potential for vessel use if measure also expands to nearshore area).
Legal feasibility	High – RAMS for cliffs / boats and protected site permissions. No fundamental legal barrier.
Monitoring potential	Debris audits (kg/type), entanglement logs, photo-transects; entanglement rate (for example, no. birds per 100m).
Adaptability	Potential to adjust debris removal extent (increase frequency of removal, expand to further sites).
Evidence for measure	Field studies document frequent rope / plastic incorporation in gannet nests and entanglement injuries; sustained removal and rope-exchange schemes reduce hazards where debris loads are high (O'Hanlon *et al.,* 2017; Votier *et al.,* 2011).

Ghost gear and marine litter removal	
Suitability ranking	Specificity: 4 Effectiveness: 2 Delivery Timeframe: 4 Technical Delivery: 3 Conservation Value: 4 Extent: 3 Overall suitability: 20

Table 4.11 Colony enhancement

Colony enhancement	
Type of measure	Measure could also be implemented by the Project alone or collaboratively with other developers either through funding management works (see **Table 4.4**) or direct project involvement. This would be dependent on the scale of compensation required and opportunities available.
Description	Create/stabilise nesting ledges on cliffs (ledge boxes, rock stabilisation) to alleviate space limitation and improve fledging safety.
Applicable species	Primarily cliff nesting species such as kittiwake and auks.
Spatial extent	Space-limited cliff sections.
Implementation and duration	Implementation required several years prior to operation of the Project to account for uncertainty regarding rate of occupation. It is expected that ledges can be maintained throughout lifetime of project depending on design life of ledges if used.
Technical feasibility and additionality	Medium– small-scale engineering (ledge boxes, stabilisation) is well-understood with designs refined from case studies to match species spacing requirements. However, additionality of the measure will be dependent on whether high quality nesting space is a limitation at colony. Ease of installation may be variable depending on the requirements and access at the colony. Creation of new nesting spaces can aid climate resilience of a colony by creating nesting space in sheltered areas of the colony which may have been previously unsuitable for nesting.
Financial feasibility	Medium – One-off works with periodic inspection. Access / safety controls dominate cost at cliff sites, with extent of costs dependant on the site.
Legal feasibility	Medium – May require HRA, especially if being undertaken at SPA colony to ensure no adverse effect on other features of a designated site.
Monitoring potential	Monitoring of colonisation of ledges through photos / camera traps or drone. Productivity monitoring of created ledge spaces.
Adaptability	Low adaptability once implemented, though spacing and design can be refined between breeding season if needed.

Colony enhancement	
Evidence for measure	Ledge provision / stabilisation can increase occupancy where space is limiting, provided designs reflect species' nest spacing and exposure. High-density kittiwake colonies are less susceptible to predation pressure, meaning that increasing colony density can lead to improvements in breeding success, in part due to mob response to avian predators (Massaro *et al*., 2001). An example of a successful case study would be the installation of "*hammocks*" at coquet island (Royal Society for the Protection of Birds, no date).
Suitability ranking	Specificity: 2 Effectiveness: 3 Delivery Timeframe: 4 Technical Delivery: 4 Conservation Value: 3 Extent: 3 Overall suitability: 19

Table 4.12 Shellfish reef restoration (native oyster / mussel)

Shellfish reef restoration (native oyster / mussel)	
Type of measure	Measure may form part of the SMRF portfolio (see **Table 4.2**) under "restoring and enhancing supporting prey habitats" potentially allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Restore native oyster / mussel reefs to add habitat complexity and fish / invertebrate nurseries, indirectly increasing prey availability to bird species.
Applicable species	All key species (indirectly).
Spatial extent	Semi-sheltered coastal areas / shallow bays where oyster / mussel beds have significantly deteriorated or no longer exist.
Implementation and duration	Measure can be rapidly implemented, but it is expected that a multi-year (three to five year) lead in time is needed for potential benefits (for instance, measurable increases in presence of key prey species).
Technical feasibility and additionality	High – Reef construction and seeding methods are well-developed; monitoring protocols for reef development and fish use are standard (Grabowski and Peterson, 2007). Though it is highly likely this measure would lead to an increase in prey availability to bird species, there is currently a lack of direct evidence linking shellfish reef restoration to seabird population benefits. This means exact quantification of additionality would likely not be possible.
Financial feasibility	Medium – Material sourcing, biosecurity and multi-year monitoring; costs scale with footprint and access.
Legal feasibility	Medium – Requires Marine Licence and biosecurity / disease safeguards; typically deliverable in suitable bays. The relevance and appropriateness of this measure may increase following the enactment of legislative reforms expected shortly to redefine the purpose and scope of compensation.

Shellfish reef restoration (native oyster / mussel)	
Monitoring potential	Monitoring of extent of oyster / mussel reef, of presence and diversity of prey species. Monitoring of benefits to birds is challenging, though this could involve the level of foraging activity recorded in the restored area, and potentially studies of productivity at nearby colonies.
Adaptability	Potential to increase extent of work and / or to combine with seagrass / kelp restoration if needed,
Evidence for measure	Oyster reefs act as biogenic structure increasing secondary production of fish and mobile crustaceans relative to mud bottom, supporting indirect prey-base benefits and seaduck foraging (Grabowski and Peterson, 2007). Reduction in prey availability is known to be a key pressure on qualifying features potentially impacted by the Project (**Section 3**).
Suitability ranking	Specificity: 2 Effectiveness: 2 Delivery Timeframe: 3 Technical Delivery: 4 Conservation Value: 4 Extent: 3 Overall suitability: 18

Table 4.13 Creation of artificial burrows

Creation of artificial burrows	
Type of measure	Measure could also be implemented by the Project alone or collaboratively with other developers either through funding management works (see **Table 4.4**) or direct project involvement. This would be dependent on the scale of compensation required and opportunities available.
Description	Install durable artificial burrows / boxes at seabird colonies to increase nest-site availability.
Applicable species	Burrow nesting species (notably puffin, Manx shearwater and European storm-petrel (*Hydrobates pelagicus*).
Spatial extent	Colonies where availability of suitable nesting space is a limiting factor.
Implementation and duration	Immediate implementation possible outside of breeding season, though colonisation may take several years following installation, with fledglings typically reaching breeding age after six years for Manx shearwater (*Puffinus puffinus*) and puffin, and five years for European storm-petrel. Nesting structure would remain in place for the full lifetime of the Project. Burrows expected to have long lifetime and can be maintained where required throughout the operational lifetime of the project.
Technical feasibility and additionality	Medium – Durable burrow modules are simple to install and widely used; orientation / spacing tuned to microclimate and species behaviour (Kress and Nettleship, 1988). This measure has been trialled for European storm-petrel on Skokholm island, with artificial nest holes created and multiple birds recorded

Creation of artificial burrows	
	breeding in burrows in following years (Skokholm Bird Observatory, 2022). In order to provide additionality, the absence of available nesting space would need to be evidenced as a factor negatively affecting the colony or artificial burrow placement in preferable habitat would provide a net benefit to colony productivity.
Financial feasibility	Medium – Medium / low cost of installation of burrows, alongside some cost for personnel to install and monitor burrows as needed. Potential for higher costs if colony is present on a remote island.
Legal feasibility	High – Works fall under standard designated site consents with timing to avoid disturbance.
Monitoring potential	Monitoring of burrow occupancy and productivity in artificial burrows
Adaptability	Potential to increase number of burrows and location of burrows as appropriate.
Evidence for measure	Artificial burrows, combined with predator control and social attraction where appropriate, increase occupancy and breeding for burrow-nesters; responses vary with site microclimate and design (Kress and Nettleship, 1988).
Suitability ranking	Specificity: 2 Effectiveness: 2 Delivery Timeframe: 4 Technical Delivery: 3 Conservation Value: 4 Extent: 3 Overall suitability: 18

Table 4.14 Kelp bed extension

Kelp bed extension	
Type of measure	Measure may form part of the SMRF portfolio (see **Table 4.2**) under “restoring and enhancing supporting prey habitats” potentially allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Kelp beds are a key habitat for many fish species which form the diet of seabird species, acting as a nursery grounds and protection. Therefore, extension of existing kelp beds has the potential to increase prey abundance and diversity and consequently prey availability to seabirds. Whilst Scottish kelp beds are not considered heavily degraded there is evidence of local declines for example in the Firth of Clyde which indicates at future vulnerabilities due to climate change (Wilding *et al.* 2022). Restoring kelp habitat through measures such as transplanting and green gravel deployment can help reverse local habitat degradation and re-establish nursery habitat for fish within the foraging ranges of breeding seabirds. Puffin and razorbill may particularly benefit from enhanced availability of small pelagic prey while gannet and great black-backed gull (*Larus marinus*) may gain from overall

Kelp bed extension	
	increases in fish biomass (Wanless *et al.* 2018). Seabird responses to this measure could include greater adult condition and enhanced chick provisioning, particularly for species with high reliance on sandeel or small pelagic fish. Increase prey availability could support high productivity or survival rates depending on species-specific energetic constraints and foraging ranges.
Applicable species	All key species.
Spatial extent	Rocky coasts with suitable hydrodynamics.
Implementation and duration	Although Scotland has not yet implemented full-scale kelp restoration projects, a growing number of monitoring, feasibility, and methodological studies are underway that contribute to national readiness. This measure would involve a multi-year enhancement approach prior to operation, starting with the establishment and monitoring of pilot plots within the first one to two years then scaling to suitable sites after three years. Long-term monitoring is essential to evaluate ecosystem function and the restoration objectives.
Technical feasibility and additionality	Medium – Techniques exist but as there are few kelp restoration efforts within the UK to date, there is a lack of standardised frameworks to measure biodiversity gains in marine habitats and so ecological outcomes and seabird linkage in UK waters remain uncertain. A pilot-first approach is advised as current evidence is insufficient to quantify the demographic outcomes for species at a national or regional level.
Financial feasibility	Medium – Materials / installation and multi-year monitoring; scale dependent.
Legal feasibility	Medium – Marine licence and consideration of kelp harvesting policy; feasible in suitable hydrodynamic settings. The relevance and appropriateness of this measure may increase following the enactment of legislative reforms expected shortly to redefine the purpose and scope of compensation.
Monitoring potential	Monitoring of kelp cover, fish presence (for example, BRUV surveys). Monitoring of benefits to birds is challenging, though this could involve the level of foraging activity recorded in the restored area, and potentially studies of productivity at nearby colonies.
Adaptability	Increase scale of delivery (for example, expand to further locations).
Evidence for measure	Kelp restoration can rebuild local fish / invertebrate communities and ecosystem function, but robust attribution to seabird demography in UK waters is currently limited. However, a study in Argentina showed kelp beds were linked with higher seabird abundance due to higher prey species diversity (Raya Rey and Schiavini, 2000). Reduction in prey availability is known to be a key pressure on qualifying features potentially impacted by the Project (**Section 3**).
Suitability ranking	Specificity: 3 Effectiveness: 2 Delivery Timeframe: 3 Technical Delivery: 3 Conservation Value: 4 Extent: 3 Overall suitability: 18

Table 4.15 Non-lethal avian predator control

Non-lethal avian predator control	
Type of measure	Measure may form part of the SMRF portfolio (see **Table 4.2**) under "predator control and biosecurity" potentially allowing for the option of strategic delivery once the SMRF is established. Measure could also be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Predation by large gulls, great skua, corvids, and other avian species can lead to seabird chick and adult mortality at breeding colonies. Management measures, such as targeted disturbance or nest removal, could be used to reduce predation pressure, potentially improving productivity and survival rates. Reducing predator numbers may also lessen competition for nest sites, supporting an increase in breeding pairs and contributing to population growth at both colony and site network levels.
Applicable species	Kittiwake, guillemot, razorbill and puffin, though likely to benefit other species predated upon.
Spatial extent	Colonies with documented avian predation pressure.
Implementation and duration	Following implementation, improvements in productivity expected to be recorded immediately if measure is effective. Measure would need to be maintained throughout the operational lifetime of the Project.
Technical feasibility and additionality	Medium / low – Wardening, structured scaring and licensed egg / nest treatments are established; however, there is uncertainty regarding the effectiveness of sustained non-lethal disturbance measures over the operational lifespan of an offshore wind farm project (~35 years) due to potential for habituation (Donehower *et al.,* 2007). If the measures are targeted at skuas or gulls, adverse effect on such species would need to be avoided as may also be qualifying features of a designated site.
Financial feasibility	Medium – Seasonal staff / equipment; intensity scales with predator pressure and access to colony.
Legal feasibility	Medium / low – Requires species protection licences and strict governance; deliverable at mixed colonies.
Monitoring potential	Monitoring of events of avian disturbance, and of the extent of avian predator presence. Pre- and post- monitoring of colony productivity.
Adaptability	Measure is adaptable through the extent of avian management (for example, increase nest removal), and through expansion to other sites.
Evidence for measure	Managed non-lethal control (for example, nest / egg treatments under licence, structured scaring) can reduce predation pressure and increase productivity; programmes need careful governance to avoid non-target effects (Donehower *et al.,* 2007).
Suitability ranking	Specificity: 3 Effectiveness: 3 Delivery Timeframe: 4 Technical Delivery: 2

Non-lethal avian predator control	
	Conservation Value: 2 Extent: 3 Overall suitability: 17

Table 4.16 At-sea disturbance and traffic management

At-sea disturbance and traffic management	
Type of measure	Measure could also be implemented by the Project alone or collaboratively with other developers either through funding management works (see **Table 4.4**) or direct project involvement. This would be dependent on the scale of compensation required and opportunities available.
Description	Vessels transiting along the coastline may cause disturbance to cliff nesting seabirds potentially resulting in a reduction in breeding productivity. Disturbance pressure may be caused by the presence of recreational boats, other recreational watercraft or fishing vessels, particularly if transiting within 100m from the coast and / or lingering alongside cliff areas for extended periods. Measures such as outreach to local harbours and recreational water sport centres and / or implementation of education programmes, codes of conduct and temporal / no-go zones around colonies and / or key foraging areas to reduce disturbance pressure of seabirds and improve breeding productivity.
Applicable species	All cliff nesting species if implemented within the proximity of the colony. Displacement sensitive species such as auks and divers if implemented in loafing areas.
Spatial extent	Waters near to colonies, and / or key foraging areas or hotspots of area usage
Implementation and duration	Seasonal messaging around disturbance reduction (for example, signs and awareness campaigns), seasonal / permanent zoning, ongoing routing / speed management.
Technical feasibility and additionality	Medium – outreach to local watercraft groups feasible, though adherence to measures to reduce disturbance can't be enforced. Routing / speed / buffer measures may be difficult to implement.
Financial feasibility	High – Primarily signage, and costs associated with engagement and compliance monitoring.
Legal feasibility	Low – Harbour authority and navigation approvals as needed. The relevance and appropriateness of this measure may increase following the enactment of legislative reforms expected shortly to redefine the purpose and scope of compensation.
Monitoring potential	Monitoring can be undertaken through incident reporting and / or regular monitoring of vessel / watercraft presence via vessels Automatic Identification System. If the aim is to reduce vessel traffic in close proximity to a colony, then camera systems could be installed to monitor presence of vessels and subsequent behavioural responses of cliff nesting birds. Where appropriate, colony productivity

At-sea disturbance and traffic management	
	can be monitored pre- and post-implementation to calculate benefit of the measure.
Adaptability	Refine hotspots / time-area guidance, refine routes / speeds and buffers with evidence.
Evidence for measure	Experimental analyses quantify species-specific escape distances and vulnerability to vessel traffic; a Disturbance Vulnerability Index supports routing / speed / temporal buffers in sensitive areas / seasons (Fliessbach *et al*., 2019).
Suitability ranking	Specificity: 3 Effectiveness: 3 Delivery Timeframe: 3 Technical Delivery: 2 Conservation Value: 3 Extent: 3 Overall suitability: 17

Table 4.17 Artificial nesting structures (ANS) (onshore / offshore)

Artificial nesting structures (ANS) (onshore / offshore)	
Type of measure	Measure could be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	ANS can be installed onshore or offshore to provide additional nesting opportunities for seabirds, particularly near key foraging areas. Locating these structures close to feeding grounds can improve foraging efficiency, reduce energetic demands on breeding adults, and potentially enhance survival and productivity. By increasing available nesting space, these structures can support higher fledging rates and help accommodate colonies at or near carrying capacity. Designs can also incorporate features to reduce predation risk and facilitate low-disturbance monitoring, offering both conservation and research benefits.
Applicable species	Predominantly kittiwake, potential benefit to gannet, guillemot and razorbill.
Spatial extent	Within connectivity of relevant colonies, and close to key foraging areas.
Implementation and duration	ANS must be installed well in advance of project operation to allow time for seabird colonisation and for fledged juveniles to reach breeding age. If not implemented early, there is a risk of accruing a compensation-related mortality debt. Colonisation may take over ten years following installation to a sufficient size to adequately compensate for the Projects predicted impacts based on historic colony colonisation (Porter and Coulson, 1987; Coulson and Coulson, 2008). Nesting structure would remain in place for the full lifetime of the Project.

Artificial nesting structures (ANS) (onshore / offshore)	
Technical feasibility and additionality	Medium / low – Offshore / onshore ANS have been recently deployed within English waters though the success of such projects is yet undetermined. Evidence supporting nesting space quality and quantity being a limited factor at either a colony or biogeographic scale would be required to justify measure.
Financial feasibility	Medium / low – Offshore towers require significant upfront costs and periodic inspections, costs are lower for onshore nesting structures, though significant. Costs are dependent on the size and type of structure used.
Legal feasibility	Medium – Marine Licence required for offshore structure, alongside navigation safety and HRA / EIA. Onshore restructure would require land acquisition.
Monitoring potential	Annual monitoring during breeding season of colonisation of structure, and productivity monitoring.
Adaptability	Low adaptability once constructed - aspects such as use of call playback / use of decoys to attract birds can be altered.
Evidence for measure	Evidence from UK deployments records kittiwake breeding on multiple artificial offshore structures (Outer Dowsing, 2024a). For example, kittiwake have been breeding on the Morecambe gas platform that was first colonised in 1998 (Thorpe, 2024). Kittiwake productivity has also been recorded as higher on artificial structures (oil rigs) than natural populations (Christensen-Dalsgaard *et al.,* 2019). Evidence of auks breeding on artificial structures is limited in comparison to kittiwake, though surveys across 16 offshore structures in the southern North Sea found 100 guillemot and 13 razorbills potentially nesting one structure (Orsted, 2021).
Suitability ranking	Specificity: 2 Effectiveness: 2 Delivery Timeframe: 2 Technical Delivery: 2 Conservation Value: 2 Extent: 3 Overall suitability: 13

Table 4.18 Supplementary feeding

Supplementary feeding	
Type of measure	Measure could be implemented by the Project alone or collaboratively with other developers depending on the scale of compensation required.
Description	Provide fish to adults / chicks at prey-stressed colonies. This has the potential to increase productivity, and decrease competition for resources.
Applicable species	All key species
Spatial extent	Specific colonies where prey availability is a limiting factor.

Supplementary feeding	
Implementation and duration	Measure would be undertaken throughout the operational lifetime of the project, likely restricted to the breeding season.
Technical feasibility and additionality	Low – Technically simple but requires tight protocols to manage dependency / disease. To ensure regulation, this measure would likely be delivered through funding provision to relevant conservation groups. The feasibility of such a measure over the entirety of the Project lifetime is impractical. Supplementary feeding has the potential to artificially inflate the population whilst measure is in place but population could simply crash once measure ceases. Likely difficult to prevent non-target species such as skuas and gulls from exploiting the measure.
Financial feasibility	Medium – Staff-intensive operations and biosecure supply.
Legal feasibility	Medium – Handling / licence and biosecurity requirements; permitted under controlled research / management frameworks.
Monitoring potential	Productivity monitoring, comparison to colonies without supplementary feeding.
Adaptability	Highly adaptable - Adjust amount fed / interval of feeding / location of feeding.
Evidence for measure	Feeding can raise chick growth / fledging in some contexts but risks dependency, disease and behavioural change. Supplementary feeding has previously shown to have positive effects on breeding productivity of kittiwake (Gill *et al.,* 2002) and leading to faster chick growth rates in puffin (Harris, 1978). However, this measure is best treated as a tightly governed, short-term bridge while durable measures take effect. Reduction in prey availability is known to be a key pressure on qualifying features potentially impacted by the Project (**Section 3**).
Suitability ranking	Specificity: 2 Effectiveness: 2 Delivery Timeframe: 2 Technical Delivery: 2 Conservation Value: 2 Extent: 2 Overall suitability: 12

5. Step 4: Identification of Short-listed Compensation Measures

5.1.1 Selection of short-listed compensation measures

5.1.1.1 Following the identification of potential compensation measures, short-listed measures have been identified based on the rankings of measures presented in **Section 4**. The following three shortlist measures have been selected:

- strategic compensation measures fund contribution;
- predator eradication and biosecurity; and
- conservation management funding.

5.1.1.2 It should be noted that predator eradication, and biosecurity are presented in **Section 4** as separate measures, however these are considered here as a combined approach by the Project as they are highly linked and may be delivered simultaneously or separately depending on the site (for example, if a predator eradication is already planned / underway, then the Project may become involved in the biosecurity aspect only as a joint project) and scale of required compensation concluded by Scottish Ministers.

5.1.1.3 Moreover, predator eradication and biosecurity and conservation management funding are anticipated to be included within the SMRF portfolio under "predator control and biosecurity" and "habitat management and restoration" respectively. Therefore, allowing for the option of strategic delivery once the SMRF is established. These measures could also be delivered through a project-led approach or collaboratively with other developers depending on the scale of the compensation required.

5.1.1.4 Although not promoted as a short-listed measure, the Applicant would welcome further engagement on the feasibility of seagrass restoration as a Project alone measure. As detailed within **Section 3**, reduction in prey availability is cited as a known pressure impacting qualifying features considered within this derogation case (**Table 2.1**), therefore seagrass restoration would be a valuable measure to take forward. The reason for seagrass restoration not favoured at the current time is due to the benefit being indirect (Tier 3 measure; see **Section 4.1**) (Unsworth and Butterworth, 2021), making quantification of the benefit provided by such a measure unfeasible. However, restoring and enhancing supporting prey habitats forms part of the Scottish Government's portfolio of strategic compensation measures suggesting exact quantification may not be necessary (ABPmer, 2025). If such a measure is taken forward by the Project, then this could eventually be adopted within the strategic compensation measures when available.

5.1.2 Strategic compensation measures fund contribution

5.1.2.1 While compensatory measures have traditionally been delivered on a project-led basis, recent legislative changes (for example, the UK Energy Act 2023) have recognised that delivery through strategic compensation can be more appropriate and effective under certain circumstances.

5.1.2.2 Subject to UK parliamentary approval, regulations made under section 292 of the Energy Act 2023 allow for the establishment, operation and management of one or more MRFs. These funds would be available for use by developers of relevant offshore wind activities (as defined in the Energy Act 2023) to fulfil requirements to secure environmental compensation (Scottish Government, 2025). The Scottish Government is working in

partnership with the UK Government to use the opportunities provided by the Energy Act 2023 for the establishment of a SMRF. As of summer 2025, the UK and Scottish Governments have consulted on proposed legislative and policy reforms including on the establishment of a SMRF. This will help to deliver a more streamlined process for securing compensation for adverse environmental effects of relevant offshore wind activities (defra, 2025; ABPmer, 2025). Offshore wind developers would be able to discharge their environmental compensation conditions, wholly or in part, through making agreed payment to the MRF.

5.1.2.3 Strategic compensation delivery has the potential to benefit all species requiring compensation for the Project, though this is in part dependant on the measure put forward by the body to which the fund is given.

5.1.2.4 Within Scotland, Scottish Government is currently developing a Scottish Portfolio of Strategic Compensatory Measures, with current projects focussed on:

- predator control and biosecurity;
- habitat management and restoration, and reduction of disturbance at colony;
- fisheries management compensatory measures;
- restoring and enhancing supporting prey habitats; and
- marine litter removal at scale.

5.1.2.5 Within their published consultation document, Scottish Government (2025) state the following:

> "*For projects assessed within the draft updated SMP-OWE, measures from those already identified as plan-level compensatory measures which can be delivered by the individual project or through the appropriate strategic compensation delivery mechanism, such as a Scottish Marine Recovery Fund."*

5.1.2.6 Consequently, the delivery of compensation through strategic means is considered the most appropriate option for the Project. This is due to delivery through strategic avenues having likely wider environmental benefits, will allow for coordinated implementation of compensatory actions under the guidance of relevant government authorities and will ensure consistency with national biodiversity objectives. This method promotes broader ecological benefits, avoids duplication across offshore wind projects, and facilitates the delivery of measures that exceed the scope of individual project responsibilities (ABPmer, 2025).

5.1.2.7 ScottishPower Renewables Ltd on behalf of the Applicant have engaged with the recent public consultation in relation to Strategic Compensation Policy for Offshore Wind (ABPmer, 2025). The Project will maintain ongoing engagement with key stakeholders to assess the suitability of existing strategic compensation funding schemes and to support the development of new ones for offshore renewable projects in Scotland.

5.1.2.8 It is expected that the method of delivery will be through the SMRF, though it is acknowledged that this route may not be possible depending on when the SMRF is available, and its suitability for the Project's compensation requirements. Consequently, the Project will also consider contribution to other strategic funds as appropriate.

5.1.2.9 With regards to the next steps process, the Applicant would welcome detailed discussion with relevant stakeholders on how the Project can be taken forward into the MFR and would welcome any available updates relating to implementation and availability.

5.1.3 Predator eradication and biosecurity

Evidence and relevance to species of interest

5.1.3.1 Invasive alien species have been highlighted as one of the greatest global threats to seabirds (Dias *et al.,* 2019). Invasive predators impact seabirds through predation on eggs, chicks, and in some cases, adult birds which can significantly suppress breeding numbers resulting in decline or complete extinction of breeding seabird populations (Lock, 2006; Lambart *et al.,* 2015; Jones *et al.,* 2008). This threat is particularly prevalent on islands where seabirds have not co-evolved with currently present invasive predator species and therefore lack the required adaptations and behaviours to avoid adverse population consequences in response to predation pressure. Removal of invasive mammalian predators such as brown rat, mink, stoat and hedgehog from seabird colonies through trapping or lethal control would therefore remove the pressure on seabirds, increasing breeding productivity and promoting population recovery (Offshore Wind Industry Council (OWIC), 2025; Swann, 2008; Luxmoore *et al.,* 2019; BTO, 2025; Furness *et al*., 2013).

5.1.3.2 Predator eradication has predominantly been undertaken at island colonies where auk species, Manx shearwater and petrels have been impacted. Benefits to seabirds are widely reported; as highlighted by OWIC (2025), 16 before- and after studies, one paired study, and one literature review from around the world have all shown positive seabird responses to removal / control of mammalian predators on islands. In the UK, rat eradication at Canna and Sanday resulted in recolonisation of previously empty areas of guillemot colony, and an increase in razorbill numbers (Swann, 2008; Luxmoore *et al*., 2019). Ramsey Island off the coast of Pembrokeshire, is another example of a successful rat eradication programme, having seen a rapid expansion of the Manx shearwater population and colonisation by European storm-petrel following the removal on invasive predators (Bell *et al.,* 2019). Similarly, eradication of rats at Lundy Island led to evident increases in guillemot and razorbill breeding numbers (BTO, 2025), as well as Manx shearwater and puffin returning to breed after an absence of 45 and 20 years respectively (Lock, 2006).

5.1.3.3 For kittiwake, there is comparatively less evidence of mammalian predator impacts. However, available evidence suggest mammalian predators are impacting kittiwake productivity on the Isles of Scilly (brown rats and cats), St Abb's Head (mink), and Lowestoft (foxes) (Furness *et al*., 2013). Therefore, there is potential for this measure to benefit any kittiwake populations where nests are accessible to terrestrial predators.

5.1.3.4 There is greater uncertainty as to the impact of mammalian predators on gannet populations however the presence of non-indigenous species is cited as a pressure to gannets in **Section 3.6.3**. In addition, available evidence, although limited, reports rats predating gannet eggs and chicks (Coulson, 2002) and photographic evidence of mink attempting to predate a juvenile gannet (John Anderson on PBASE, PBASE, no date).

5.1.3.5 Once eradication of predators from a location is achieved, the implementation of strict biosecurity measures is critical to reduce the risk of reinvasion, which would diminish any benefits yielded by the eradication programme. Within Scotland, best practice guidance in relation to biosecurity of seabird colonies was developed by Biosecurity for Life Scotland project which is currently funded until 2026 (Biosecurity for Life, 2023b). Such guidance would form the basis of any biosecurity measures the Project would seek to implement.

5.1.3.6 A case study example which demonstrates that predator eradication and biosecurity is a legally feasible compensation measure for an offshore wind farm to implement, relates to the mink eradication programme implemented by Saint-Brieuc offshore wind farm (located 16.3km from the Breton coast, France) in 2017. This measure was implemented as a compensation measure for impacts associated from the offshore wind farm on guillemot, razorbill, herring gull (*Larus argentatus*), lesser black-backed gull (*Larus fuscus*) and great

black-backed gull (Ailes Marines, 2024a, Ailes Marines, 2024b). The compensation measure is overseen by Ailes Marines, a subsidiary of Iberdrola, the same partner company as the Applicant. The eradication programme aims to remove mink from île Tomé as part of a multi-partnership programme (Trégor-Gestion-Vison) which was established in 2014. The compensation measure is supported by the Conservatoire du Littoral, the Departmental Federation of Côtes d'Armor Hunters, the commune of Perros-Guirec, Lannion Trégor Community and Ailes Marines (Ailes Marines, 2024a, Ailes Marines, 2024b).

5.1.3.7 Since implementation, the compensation measure has involved a two-phased approach with the initial phase consisting of annual trapping and eradication efforts initiating in 2018 and spanning five years. The second phase involves a three-year monitoring phase, which is set to continue throughout the programmes duration to ensure the effectiveness of the eradication (Ailes Marines, 2024a, Ailes Marines, 2024b).

Identification of potential sites

5.1.3.8 Identification of potentially suitable sites for predator eradication and biosecurity implementation is drawn primarily from work completed by APEM for Collaboration on Offshore Wind Strategic Compensation Predator Reduction Implementation Group (Atkinson *et al*., 2025). This analysis expands on previous work from Stanbury *et al.* (2024) and therefore represents the most relevant information currently available regarding seabird species, predatory mammal presence and the suitability and feasibility of eradication programmes.

5.1.3.9 Based on the findings of Atkinson *et al*. (2025), **Table 5.1** details the sites to be considered, the likelihood of success ranked by Atkinson *et al*. (2025), their main mammalian predator, any other invasive mammalian predators and the seabirds currently present which would be the compensation target. None of the designated sites potentially impacted by the Project (**Table 2.1**) were concluded as being feasible for predator eradication and biosecurity implementation. Therefore, in accordance with the compensation hierarchy within **Section 4.1**, locations with the same species as the potentially impacted qualifying features in **Table 2.1** and within the broader UK site network were considered.

Table 5.1 Sites considered potentially suitable for predator eradication

Potential site	Main mammalian predator	Other mammalian predators present	Target species currently present	Other species likely to benefit	Approximate cost of eradication*	Overall likelihood of success
Inchkeith**	Brown rat (*Rattus norvegicus*).	None	Puffin, razorbill, guillemot.	-	£300,000	Highly likely.
Inchcolm**	Black rat (*Rattus rattus*).	None	Puffin and razorbill.	-	£150,000	Highly likely.
Switha	Brown rat (unconfirmed).	Unknown	Puffin, guillemot and razorbill.	Black guillemot (*Cepphus grylle*), European storm-petrel.	£400,000	Highly likely.
Sanda	American mink (*Neogale vison*) (unconfirmed).	Unknown	Puffin, guillemot and razorbill.	Manx shearwater and European storm-petrel.	£1,000,000	
Isle of Muck	Brown rat.	Feral cat*** (unconfirmed).	Puffin, guillemot and razorbill.		£4,000,000	Likely
Canna and Sanday	Hedgehog (*Erinaceus europaeus*)***.	None	Puffin, guillemot and razorbill.	Black guillemot and Manx shearwater.	£9,000,000	Likely

Potential site	Main mammalian predator	Other mammalian predators present	Target species currently present	Other species likely to benefit	Approximate cost of eradication*	Overall likelihood of success
Foula	Hedgehog*** (unconfirmed).	Feral cat***.	Puffin, guillemot and razorbill.	Black guillemot and Leach's storm-petrel (*Hydrobates leucorhous)*.	£8,500,000	Likely
Rum	Brown rat.	None	Puffin, guillemot and razorbill.	Black guillemot and Manx shearwater.	£70,000,000	Likely

Table note: *Cost presented are approximate for an eradication programme only, implementation of biosecurity measures would incur additional costs. **sites currently being considered for predator eradication compensation measures by other (non-consented) projects. *** a non-lethal eradication of these species would be considered.

5.1.3.10 The study by Atkinson *et al.* (2025) focused mainly on auk species in relation to predator eradication programmes. However, the eight sites provided in **Table 5.1** also have breeding kittiwake colonies and therefore eradication programmes at these sites would be expected to also benefit this species.

5.1.3.11 The first five options provided in **Table 5.1** would involve smaller scale eradication programmes and therefore may be better suited for a Project-led approach depending on the scale of compensation the Project is required to provide. The latter three options (Canna and Sanday, Foula and Rum) would involve large scale predator eradication programmes, which although may not be financially appropriate for the scale of impact from the Project alone, may become feasible as part of a collaboration between other developers.

Consideration of direct and indirect impacts

5.1.3.12 Predator eradication of selected sites would be expected to have positive direct effects to seabird species due to a reduction in predation pressure at the colony. This would translate to increases in colony extent and distribution, establishment of new colonies / sub colonies in previously unsafe areas and increased breeding success.

5.1.3.13 The proposed measure aims to target guillemot, razorbill, puffin and kittiwake but would be expected to positively affect all other seabirds nesting within areas accessible to mammalian predators. Depending on the site(s) selected this could include burrow nesting species such as Manx shearwater, cavity nesting European and / or Leach's storm-petrels and cliff nesting seabirds such as fulmar. In addition, a target predator eradication measure would likely benefit any ground nesting bird species at the site such as waders or passerines resulting in increased breeding success (Vilà *et al.,* 2010). Similar effects may be recorded in small mammal populations although this is dependent on the predator targeted. For example, eradication of rats would not result in significant changes in small mammal populations whereas removal of feral cats or American mink would be expected to have a wider impact to ecological composition of a site (Martin and Lea, 2020).

5.1.3.14 Consideration of direct and indirect impacts to other fauna and flora will be made throughout the planning and implementation of the compensation measure with regular correspondence with stakeholders as necessary to navigate and overcome any potential issues to sensitive species which may arise through predator eradication and biosecurity implementation.

Stakeholder engagement

5.1.3.15 In relation to the potential sites listed above, the Applicant plans to engage with relevant site managers and landowners to explore opportunities for predator eradication and / or biosecurity measures in 2026.

5.1.3.16 This engagement will include discussion on whether there is already a pre-existing predator eradication scheme and biosecurity measures being implemented and what work packages the Applicant could implement to deliver additional benefit for key receptors, particularly where site managers lack an existing mechanism for long term funding such measures. Where biosecurity alone is being considered, this will involve identification of ongoing or planned eradication programmes, and engagement with relevant project leads and stakeholders to implement appropriate biosecurity once eradication programmes are complete.

5.1.3.17 The Applicant will also engage with key stakeholders regarding the creation of a steering group, comprising the Applicant, relevant Statutory Nature Conservation Bodies (SNCBs), site managers / landowners, and local authorities as appropriate. This group will be created with the purpose of assessing the suitability of pre-implementation monitoring and

effectiveness of any implemented compensation measures, based on outcomes from monitoring activities. It is anticipated that the Applicant would engage with the steering committee group a minimum of once per quarter, if possible, throughout the pre-implementation stage and the first five years of post-implementation monitoring if required.

Monitoring and adaptive management

Schedule for monitoring, implementation and reporting

5.1.3.18 If a full predator eradication is undertaken, then monitoring will be undertaken at all stages of the eradication process, with details of the monitoring proposal to be discussed and agreed with stakeholders prior to commencement and throughout the monitoring programme.

5.1.3.19 Monitoring will be undertaken pre-implementation, to establish the presence, distribution and density of predators on the site(s) and evidence of predation on seabirds. Methodologies to collect these data may include using remote motion activated cameras, thermal drone surveys and / or the use of detection dogs. The most suitable approach will be confirmed following site investigation works and consultation with relevant stakeholders.

5.1.3.20 Pre-implementation monitoring will also include collection of seabird demographic data (productivity data, colony distribution and colony counts) if not already collected, to establish a suitable baseline in which to assess the level of success achieved by the compensation measure. Methodology for this monitoring will largely be drawn from recommended guidance within Walsh *et al.* (1995) with additional effort as required to investigate potential impacts from mammalian predation pressure. This would involve monitoring efforts focused on selected study plots (to be confirmed during site investigation works prior to monitoring) at site(s). Study plots would be selected based on the requirements presented in Walsh *et al*. (1995), such as the number of nest sites for a suitable population sample, which vary depending on species. It is assumed a minimum of two years of pre-implementation monitoring will be necessary to account for interannual variability, if long term monitoring isn't already undertaken at the selected site(s).

5.1.3.21 Monitoring reports and site investigation reports will be produced annually. These reports would present the methods, key results and discussion on the progression of the compensation measure implementation plan, and would form the basis of consultation meetings with the steering committee and landowners each year and prior to implementation.

5.1.3.22 Post eradication, appropriate monitoring of predator presence will be undertaken throughout the lifetime of the Project. Monitoring measures will be dependent on the predator targeted, though may include monitoring of dead predator carcasses, the use of wax blocks, and / or motion activated cameras. Biosecurity measures will be implemented to ensure that re-invasion of the predator is avoided. This will include regular monitoring to identify any early signs of reinvasion. The Biosecurity for Life Scotland project provides best practice resources and tools which would be used to plan and implement biosecurity requirements post eradication. If at any point re-invasion occurs, adaptive management of further eradication and biosecurity measures will be considered with stakeholders.

5.1.3.23 Seabird demographic data collection will also be undertaken post-implementation to monitor responses of seabirds to reduced predation pressure and to assess the success of the measure and the compensation benefit achieved. Post-implementation monitoring would be conducted at the same study plots as monitored pre-implementation using methods from Walsh *et al.* (1995) with amendments as required and agreed during stakeholder consultation.

5.1.3.24 The current proposal is to undertake post-implementation monitoring annually for the first two-years. If measure is considered successful without the need for adaptive management, then requirements for further monitoring will be subject to further discussion. If any issues arise at this monitoring stage, next steps will be discussed with stakeholders in accordance with **Plate 5.1**.

Success criteria for compensation effectiveness

5.1.3.25 Once implemented the measure would need to meet key success criteria to ensure the predator eradication is successful and achieving the level of compensation required. For predator eradication and biosecurity success criteria will be based on a reduction in mammalian predators at the identified site(s) and no evidence of reinvasion. Specific criterion would be adjusted slightly depending on the type of site(s) selected for the predator eradication measure and through engagement with stakeholders.

5.1.3.26 For offshore island sites, success criteria could include the following:

- achieve predator free status within two to three years of eradication starting; and
- maintain predator free status on islands through continued biosecurity.

5.1.3.27 Though not currently considered, if inshore and mainland sites are subsequently identified, success criteria will include:

- remove both native and non-native predators each year (as required) (inshore islands); and
- exclude native and non-native predators each year (as required) (mainland).

5.1.3.28 The success of the compensation measure requires breeding seabirds to respond positively to predator reduction. The key success criteria in relation to a positive response from the impacted seabird species (and other non-target species) would be agreed upon through engagement with stakeholders but could include:

- recolonisation of the site (if previously absent);
- increase in average annual breeding productivity and / or colony size increases; and
- colony distribution and extent increases.

Adaptive management

5.1.3.29 Should any success criteria in relation to the predator eradication programme or responses from impacted seabirds not be met, leading to a shortfall in anticipated compensation after two years post-implementation or at any monitoring stage thereafter, the following adaptive management measures could be implemented:

- Trial small adjustments to the measure to increase likelihood of success. These could include changing the types and locations of traps and/or bait used (in consultation with key stakeholders).
- review if other biosecurity measures could be implemented to deliver the required level of compensation (in consultation with key stakeholders);
- if not sufficient, consider requesting to participate in any strategic or collaborative compensation funding mechanisms; and
- if no such mechanism is available revisit other identified compensation measures and agree and implement accordingly.

5.1.4 Conservation management funding

Evidence and relevance to species of interest

5.1.4.1 This measure is applicable to all species of interest, though given this measure is site-specific, the species of interest, and evidence behind the proposed measure will be highly dependent on sites selected.

5.1.4.2 Several recent case studies from across Scotland and the wider UK demonstrate that conservation management funding is a legally feasible compensation measure for an offshore wind farm to implement. Recent examples from England include Outer Dowsing offshore wind farm supporting the Jersey National Trust at Plémont nature reserve through funding additional management works including predator control (Outer Dowsing, 2024b). This is predominantly compensating for impacts to puffins but has also been considered suitable for other auk species breeding at Plémont. In addition, Offshore Wind Industry Council (OWIC) projects, including Five Estuaries offshore wind farm are pursuing a compensation measure to fund recreational disturbance reduction measures across several seabird colonies in southwest England, predominately as compensation for guillemot and razorbill (Five Estuaries, 2025).

5.1.4.3 Within Scotland, several projects are currently progressing conservation management funding compensation options. These include Green Volt and Cenos offshore wind farms which are collaborating to fund the Scottish Seabird Centre's (SSC) SOS Puffin Project. This project undertakes annual removal and maintenance of invasive tree mallow across the Forth Islands which has caused significant declines in the puffin population on the islands in recent decades. The SOS Puffin Project has limited long-term funding secured which has been addressed through the support from Green Volt and Cenos, and which provides the additionality required for the offshore wind farm projects' compensation (Green Volt, 2024; Cenos, 2024). Several offshore wind projects, including Muir Mhor offshore wind farm have proposed to collaborate to support a broad initiative coordinated by the SSC to reduce anthropogenic disturbance to several seabird species. This is predominately focused within the Firth of Forth currently but there is potential for expansion to other seabird colonies in Scotland (Muir Mhor, 2025). In addition, Ossian offshore wind farm have proposed to provide funding for the current Scottish Mink Control Project (MCP) as a compensation measure for razorbill and kittiwake (Ossian, 2024). This project covers monitoring, trapping and invasive habitat management widely across Scotland and in partnership with the Scottish Invasive Species Initiative (SISI). The MCP has no long-term funding secured so the support from Ossian would allow the continuation and enhancement of the project and in turn provides the additionality required for Ossian's compensation.

Identification of potential sites

5.1.4.4 In accordance with the compensation hierarchy within **Section 4.1**, the preferred sites for conservation management funding would be those potentially impacted by the Project summarised within **Table 2.1**. It is recognised that the designated sites and qualifying features within **Table 2.1**, are likely to be potentially impacted by other offshore wind projects, therefore the potential for the Applicant to provide additionality to such sites may be limited. Should this be the case the Applicant proposes to carry out a screening exercise to identify other potential seabird colonies, both designated and non-designated sites, where funding of conservation management measures would provide additionality. This will preferably focus on sites with ecological connectivity to the qualifying features within **Table 2.1**. Potential sites will be located using the BTO's SMP, and connectivity determined based on mean maximum foraging ranges presented in Woodward *et al*. (2019). The site selection process will aim to locate sites where management activities have been discontinued or cancelled and will consult with site managers and other relevant stakeholders to explore

opportunities for reinstating these activities through targeted funding. Alternatively, this measure may also consider smaller sites where no management is planned or in place and explore opportunities to fund the introduction of management measures.

Stakeholder engagement

5.1.4.5 The Applicant plans to engage with relevant site managers and landowners to explore opportunities for funding additional conservation measures pre-consent. Where identified colonies are part of an SPA, consultation will be undertaken with the relevant nature conservation bodies (for example, NatureScot) and landowners to discuss next steps. Where the colony is not part of a designated site (for example, newly established and smaller colonies), engagement will be undertaken with relevant site managers and landowners as appropriate as well as from the relevant nature conservation bodies. This process will involve discussion of funding potential additional work packages which are not included within site management plans, and / or funding site management plans where current site managers do not have a foreseeable mechanism to fund.

5.1.4.6 The Applicant will also engage with key stakeholders regarding the creation of a steering group, comprising the Applicant, relevant SNCBs, site managers / landowners, and local authorities as appropriate. This group will be created with the purpose of assessing the suitability of the pre-implementation monitoring plan and effectiveness of any implemented compensation measures, based on outcomes from monitoring activities. It is anticipated that the Project would meet with the steering committee group a minimum of once per quarter, if possible, throughout the pre-implementation stage and the first five years of post-implementation monitoring if required.

Monitoring and adaptive management

Schedule for implementation and monitoring

5.1.4.7 Monitoring and adaptive management put in place for this compensation measure is highly dependent on the type of conservation management that is being funded. However, it is expected this will broadly involve monitoring of the implemented measure against performance criteria, potentially including monitoring of seabird productivity and colony counts if greater resolution is needed to establish a suitable baseline.

5.1.4.8 Monitoring methodology will largely be drawn from recommended guidance within Walsh *et al.* (1995). This would involve monitoring efforts focused on selected study plots (to be confirmed during site investigation works prior to monitoring) at site(s). Study plots would be selected based on the requirements presented in Walsh *et al*. (1995), such as the number of nest sites for a suitable population sample, which vary depending on species. It is assumed a minimum of two years of pre-implementation monitoring will be necessary to account for interannual variability, if long term monitoring isn't already undertaken at the selected site(s).

5.1.4.9 Pre-implementation monitoring reports and site investigation reports will be produced during each year of monitoring. These reports would present the methods, key results and discussion on the progression of the compensation measure implementation plan, and would form the basis of consultation meetings with the steering committee and landowners at the end of each year and prior to implementation.

5.1.4.10 Post-implementation, seabird demographic data collection will be undertaken to assess the success of the measure and the compensation benefit achieved. If the measure is providing funding to a separate organisation this monitoring could be managed be externally with input as necessary from the Applicant to ensure the data collected is of a suitable standard and resolution. The post implementation monitoring would involve the use of the same study

plots as monitored pre-implementation using methods from Walsh *et al.* (1995) with amendments as required and agreed during stakeholder consultation.

5.1.4.11 The current proposal is to undertake post-implementation monitoring annually for the first two-years. If measure is considered successful without the need for adaptive management, then requirements for further monitoring will be subject to further discussion. If any issues arise at this monitoring stage, next steps will be discussed with stakeholders in accordance with **Plate 5.1**.

Success criteria for compensation effectiveness

5.1.4.12 The key success criteria of this compensation measure are highly dependent on the type of conservation management that is being funded. For example, if the measure is funding direct habitat restoration, then performance criteria would have a greater emphasis on seabird demographic changes (such as increased colony extent and population size), whereas if funding is to support additional staff (for example a seabird warden) then KPIs, specific to the role would need to be developed.

Adaptive management

5.1.4.13 Where the measure is not meeting required performance criteria, then this measure may be adapted either though changes in the measure itself (for example, increasing funding or spatial extent of measure), or seeking an alternative site / measure to fund. Should this approach also lead to a shortfall in anticipated compensation accrued, additional adaptive management could be applied:

- requesting to participate in any strategic or collaborative compensation funding mechanisms; and
- if no such mechanism is available revisit other identified compensation measures and agree and implement accordingly.

5.1.5 Proposed compensation roadmap

Summary and next steps

5.1.5.1 The document outlines the types of compensation measures available to the Project, including strategic, collaborative and Applicant led and details the Applicant's approach to the long-list and short-list of measures explored, as well as the reasoning for subsequent progression or rejection of measures.

5.1.5.2 Of the short-listed measures identified based on the rankings of measures presented in **Section 4**, three measures have been selected by the Applicant, these are:

- Strategic environmental fund contribution;
- predator eradication and biosecurity; and
- conservation management funding.

5.1.5.3 The Applicant's preferred compensation pathway to deliver ornithological compensation is through strategic mechanisms with a preference on contributing to the SMRF. However, in case this preferred route is not feasible or suitable, predator eradication / biosecurity and conservation management funding are presented as alternative delivery pathways, including detailing proposed plans for the progression of each and the potential for collaboration with other developers. The Applicant would welcome engagement with NatureScot and MD-LOT on the proportionality of the compensation required for the Project

and whether the approach to compensation could rely on the SMRF only, a combination of SMRF and Project-led / collaborative measures proposed or all compensation requirements will need to be Project-led / collaborative with other developers.

5.1.5.4 With regards to the next steps for strategic environmental fund contribution, the Applicant would welcome discussion with relevant stakeholders on how the Project can express interest and be taken forward into the SMRF. The Applicant proposes further discussion with MD-LOT and Scottish Ministers on timeframes for availability of the SMRF particularly in reference to the Project's own schedule and would welcome any updates relating to implementation.

5.1.5.5 For predator eradication and biosecurity, the Applicant would welcome engagement with NatureScot and MD-LOT regarding proportionality for this measure in relation to the predicted level of impact from the Project, and the potential for collaboration with other developers. Further to this, discussion would be welcomed with key stakeholders on biosecurity as a measure alone and the current uncertainty around proving additionality through biosecurity alone, should the SMRF not be available within suitable timeframes for the Project. The next steps in terms of securing a predator eradication and biosecurity compensation measure would be the identification and confirmation of specific suitable sites for implementation which would include site investigations and ground-truthing works as necessary. Following identification of suitable sites these would need to be secured for implementation and the full details on the proposed plan for predator eradication and biosecurity presented within a Detailed Seabird Compensation Plan (DSCP) for submission to NatureScot and MD-LOT. Consultation with key stakeholders and landowners (as required) would be pursued throughout this process.

5.1.5.6 Should the SMRF not be available or within suitable timeframes for the Project the next steps to securing a conservation management funding measure would be to seek further engagement with NatureScot and MD-LOT regarding proportionality in relation to the predicted level of impact from the Project, and the potential for collaboration with other developers. Further discussion would be welcomed with key stakeholders on the potential options available to support conservation management work through funding and how the options available would secure the additionality needed. Once potentially suitable sites and projects have been identified (through site investigation works and relevant consultation with stakeholders, landowners and other organisations (as required)) the proposed plan for implementation would be detailed within the DSCP for submission to NatureScot and MD-LOT.

5.1.5.7 This compensation plan will be an adaptive report and would be updated throughout the process of securing the compensation measures as needed. The strategy set out in the final version of this plan would be used to prepare the DSCP which would present the complete compensation implementation and monitoring plan for all measures required to deliver the necessary compensation for the Project. It is anticipated that the DSCP would need to include information on the following points:

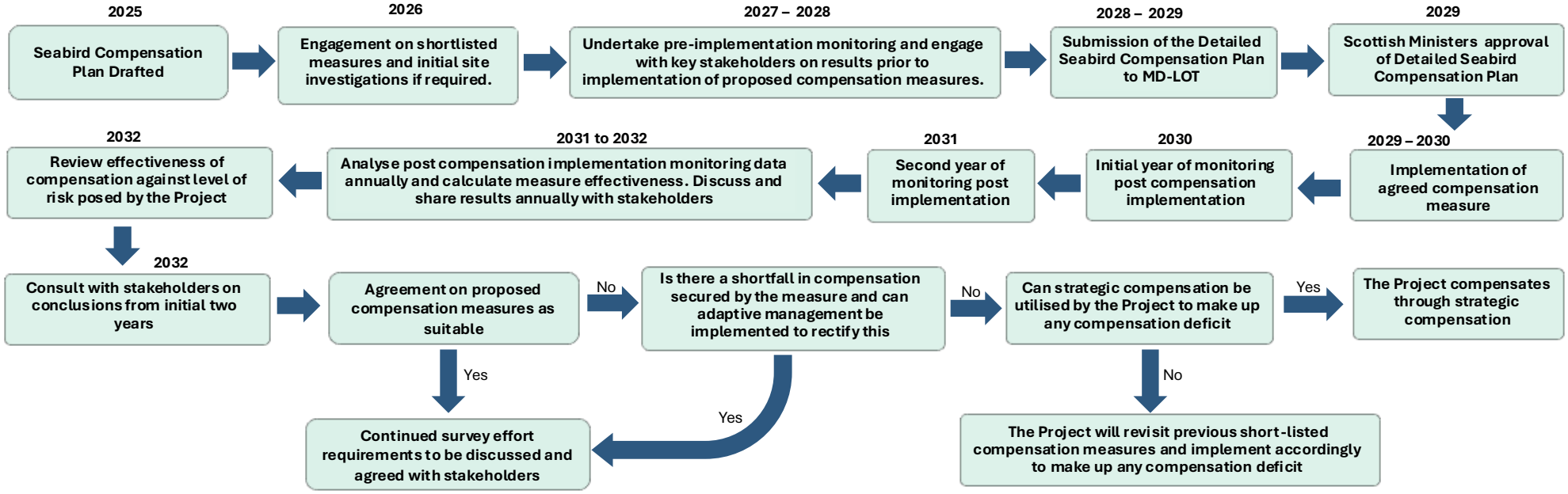
- a timetable of implementation and maintenance of the compensation measures proposed;
- the location of the compensation measures;
- a description of the characteristics of the proposed compensation measures;
- the predicted outcomes of each compensation measure, including timescales of when those outcomes will be achieved; and
- details of monitoring and reporting of the effectiveness of the compensation measures including:
  - survey methods;

- survey programmes;
- success criteria;
- timescales for monitoring reports to be submitted to the Scottish Ministers;
- reporting of meeting success criteria;
- details relating to the heads of terms required to implement compensation measures; and
- measures to adapt, and where necessary increase, compensation measures and the criteria used to trigger any adaptation of compensation measure.

Proposed project-led compensation roadmap

5.1.5.8 In consideration of the next steps to securing compensation for the Project, **Plate 5.1** below presents the Project's proposed roadmap for project-led / collaborative compensation delivery and adaptive management, including stakeholder consultation throughout, though as previously emphasised the Project's preferred approach to fully compensate via the SMRF and consider such an option will likely be available within the Project's programme.

Plate 5.1 Proposed project-led compensation and adaptive management roadmap



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7. Glossary of Terms and Abbreviations

7.1 Abbreviations

Acronym	Definition
AEoSI	Adverse Effect on Site Integrity
ANS	Artificial Nesting Structure
BOCC	Birds of Conservation Concern
BRUV	Baited Remote Underwater Video
BTO	British Trust for Ornithology
CMA	Conservation Management Advice
Defra	Department for Environment, Food and Rural Affairs
DSCP	Detailed Seabird Compensation Plan
EIA	Environmental Impact Assessment
FeAST	Feature Activity Sensitivity Tool
HRA	Habitats Regulations Appraisal
HPAI	Highly Pathogenic Avian Influenza
JNCC	Joint Nature Conservation Committee
km	kilometres
KPI	Key Performance Indicator
MRF	Marine Recovery Fund
OWIC	Offshore Wind Industry Council
PAH	Polycyclic aromatic hydrocarbon
RAMS	Risk Assessment Method Statement
RIAA	Report to Inform Appropriate Assessment
SMP	Seabird Monitoring Programme
SMRF	Scottish Marine Recovery Fund
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
UK	United Kingdom

7.2 Glossary

Term	Definition
Adverse Effect on Site Integrity	A significant effect that is assessed as undermining a site's conservation objectives.
Appropriate Assessment	An assessment to determine the implications of a plan or project on relevant national site network sites in view of that site's conservation objectives. An Appropriate Assessment forms part of the Habitats Regulations Appraisal (HRA) and is required when a plan or project (either alone or in-combination with other plans or projects) is likely to have a significant effect on a national site network. Where there are adverse impacts, it also includes an assessment of the potential mitigation for those impacts.
Designated site	Designated sites are those that are designated through the Habitats Directive and Birds Directive (via national legislation as appropriate). Within Scotland, additional sites designated through international convention are given the same protection through policy – overall all of these are referred to as Designated sites. Designated sites in Scotland are considered to be SPAs, Special Areas of Conservation (SACs), candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar sites (designated under international convention) and proposed Ramsar sites.
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 nautical miles (nm)); by the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('Offshore Marine Regulations') (beyond 12nm); 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).
Impact	The changes resulting from an action.
Impact pathway	A change descriptively assessed by one aspect, used by another aspect to inform a related assessment.
In-combination effects	Effects resulting from the combined impacts of the Project with other projects / plans on European Conservation Sites. These will be presented separately within HRA-related documentation.

Term	Definition
Marine Directorate – Licencing Operations Team	The regulator for determining marine licence applications on behalf of the Scottish Ministers in the Scottish inshore region (between 0nm and 12nm) under the Marine (Scotland) Act 2010, and in the Scottish offshore region (between 12nm and 200nm) under the Marine and Coastal Access Act 2009.
MarramWind Limited ('the Applicant')	MarramWind Offshore Wind Farm (hereafter referred to as 'the Project') is wholly owned by ScottishPower Renewables UK Limited (SPR). MarramWind Limited, a subsidiary of SPR, is the Applicant for the Project.
National Site Network	Since leaving the European Union, Natura and European sites are now referred to as the National Site Network.
NatureScot	Formerly known as Scottish Natural Heritage, NatureScot is a public body and government advisor responsible for Scotland's natural heritage, in particular for its natural, genetic and scenic diversity.
Offshore Wind Farm	An offshore wind farm is a group of wind turbine generators in the same location (offshore) in the sea, which are used to produce electricity.
Project Description	**Volume 1, Chapter 4: Project Description** of the **EIA Report** describes key parameters of the MarramWind Project infrastructure, including materials and installation methods. It includes optionality in relation to some design parameters where the design evolution of the Project is ongoing.
Project Option Agreement Area	Term for the wind farm site upon the seabed at a location specified in the Option Agreement between the Crown Estate Scotland and a developer. It is the agreement that allows the developer the rights to undertake such tests, survey and site investigations that do not entail the temporary or permanent installation of any works or structures on the seabed.
Qualifying Feature	Habitats, species or assemblages that are protected under the Habitats Regulations and are designated as SACS and SPAs.
Report to Inform Appropriate Assessment	A report submitted by an applicant for a project to provide information to enable Scottish Ministers to undertake a HRA.
Scottish Ministers	Representatives of the devolved government of Scotland.
ScottishPower Renewables UK Limited	Part of the Iberdrola group and 100% owner of MarramWind Limited.
Special Protection Area	Sites which have been classified under EU Directive (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive.

Term	Definition
Stakeholder	Person or organisation with a specific interest (commercial, professional or personal) in a particular issue.
The Project	The MarramWind Offshore Wind Farm, as described in **Volume 1, Chapter 4: Project Description** of the **EIA Report**.
United Kingdom	The United Kingdom of Great Britain and Northern Ireland, comprising England, Scotland, Wales and Northern Ireland.

Appendix B WTG Air Gap Supporting Document

Derogation Case Appendix B WTG Air Gap Supporting Document

MarramWind Offshore Wind Farm

December 2025

MarramWind

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Contents

1. Introduction 3
1.1 Overview 3
1.2 Project background 3
1.3 Purpose of the WTG Air Gap Supporting Document 3

2. WTG Air Gap Considerations 5
2.1 Current Supply Chain 5
2.2 Supply Chain Constraints 5
2.3 Technical Considerations 6

3. Project Objectives Alignment 7
3.1 Objective 1 7
3.2 Objective 2 7
3.3 Objective 3 7
3.4 Objective 4 and 5 7
3.5 Objective 6 8

4. Conclusion 9

5. References 10

1. Introduction

1.1 Overview

1.1.1.1 This Wind Turbine Generator (WTG) air gap supporting document has been produced to provide justification for the selection of the minimum air gap between the sea level and WTG blade tip. The air gap selected has been used as the basis for collision risk modelling as part of the MarramWind Offshore Wind Farm, where it informs the Habitats Regulations Appraisal (HRA) Derogation Case.

1.2 Project background

1.2.1.1 MarramWind Offshore Wind Farm (hereafter referred to as 'the Project') is wholly owned by ScottishPower Renewables UK Limited (SPR).

1.2.1.2 The Project is a proposed floating wind farm located in the North Sea, with a grid connection capacity of up to 3 gigawatts (GW). The location of the Project is determined by the Option Area Agreement (OAA), which is the spatial boundary of the Northeast 7 (NE7) Plan Option within which the electricity generating infrastructure will be located. The NE7 Plan Option is located north-east of Rattray Head on the Aberdeenshire coast in north-east Scotland, approximately 75 kilometres (km) at its nearest point to shore and 110km at its furthest point. An Option to Lease Agreement (OLA) for the Project within the NE7 Plan Option was signed in April 2022.

1.2.1.3 A comprehensive description of the Project is provided in **Volume 1, Chapter 4: Project Description** of the EIA Report.

1.2.1.4 The Project's offshore infrastructure, located seaward of mean high water springs (MHWS), may include the following:

- WTGs, including floating units (platforms and station keeping system);
- array cables;
- accommodation platform(s) (if required);
- offshore substations;
- reactive compensation platform(s) (if required); and
- offshore export cables to connect the wind farm area to the landfall(s).

1.2.1.5 The Report to Inform Appropriate Assessment (RIAA), the HRA Derogation Case, and the EIA Report accompany applications for offshore consents, licences and permissions for the Project to Marine Directorate – Licensing Operations Team (MD-LOT). These are under Section 36 (s.36) of the Electricity Act 1989, the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009, for the offshore infrastructure seaward of MHWS.

1.2.1.6 S.36 consent is required for the generating station and ancillary infrastructure, including the WTGs and array cables within the Option Agreement Area (OAA), as well as to establish the overall principle of the Project.

1.3 Purpose of the WTG Air Gap Supporting Document

1.3.1.1 This WTG air gap supporting document justifies reducing the WTG air gap from a minimum of 24m, as stated in the EIA Scoping Report (MarramWind Limited, 2023), to a minimum of

22m. This adjustment ensures the Project retains the flexibility needed to procure offshore infrastructure within the required timeframes, enabling it to achieve the Project objectives.

1.3.1.2 Since the submission of the EIA Scoping Report to MD-LOT, the Applicant has continued to engage with local and global supply chains and has established that restricting the Project to a minimum air gap of 24m will likely result in Project components not being delivered within specified timeframes and result in severe delay or cancellation of the Project.

1.3.1.3 Floating offshore wind is an emerging industry with a limited supplier base and unproven logistic chains. At this early stage in the Project lifecycle, there is significant uncertainty regarding the final engineering design. Collectively, these factors result in a high risk for Project delivery and retaining the flexibility granted by a minimum 22m air gap is essential to safeguard a technically feasible design that meets the Project requirements for delivery timescales.

1.3.1.4 The broad objectives of the WTG air gap supporting document are as follows:

- To provide justifications explaining why the minimum WTG air gap must be 22m, noting that this is the minimum to be considered for future engineering design works, and is not indicative of the WTG air gap selected following detailed design.
- To consider the impacts of the WTG air gap selection on the Project objectives.

2. WTG Air Gap Considerations

2.1 Current Supply Chain

2.1.1.1 Floating offshore wind is still a nascent industry, with only a handful of completed projects worldwide, amounting to less than 300MW of installed capacity. These existing floating wind farms are all relatively small in scale, primarily serving as demonstration or pilot projects rather than full commercial developments. While the technology shows significant promise for unlocking deep-water wind resources, it remains in the early stages of deployment, with larger-scale projects such as the MarramWind Offshore Wind Farm, still in planning or development stages.

2.1.1.2 The MarramWind Offshore Wind Farm has a potential capacity of up to 3GW (10 times the current installed floating offshore wind capacity globally) and could become one of the world's first commercial-scale floating wind farms, capable of powering more than 3.5 million homes. As one of the first floating offshore wind projects of this scale, significant uncertainty remains around the ability of the supply chain to deliver components that are technically feasible, cost competitive and able to be delivered in a timely manner.

2.2 Supply Chain Constraints

2.2.1.1 The WTGs, floating units, mooring systems, and subsea cables for the Project are likely to come from different suppliers across the globe. If one component is delayed, it could halt the entire installation schedule because other parts cannot be deployed until the floating unit is secured. Additionally, components may be manufactured in different countries, requiring synchronised shipping and port logistics. In the Scottish North Sea, weather windows for offshore installation are short, so delays in transport can push work into the next season.

2.2.1.2 A review of the current supply chain for the Project has indicated limited confidence in the supply chain's capability to deliver components meeting a minimum 24m air gap specification. The review of the supply chain has identified the following key risk areas:

1. Limited Supplier Base

- Only a small number of companies currently manufacture the necessary floating units, specialised mooring systems, or dynamic cables at scale.
- This limited supplier base results in minimal redundancy; if one supplier experiences delays, there are few alternative sources to maintain schedule integrity.

2. Lack of Standardisation

- Floating unit designs vary significantly (e.g., semi-submersible, spar, tension-leg), and WTG sizes continue to increase rapidly.
- In the absence of standardised interfaces, changes to one component (such as WTG models) often necessitate bespoke redesigns of floating units and mooring systems, which can lead to extended delays.

3. Scarce Installation Assets

- Heavy-lift vessels, anchor-handling tugs, and cable-laying ships are in limited supply and frequently shared across multiple projects.

- Any fabrication delay can push installation into a later weather window, and rescheduling vessels is highly challenging due to an immature and oversubscribed market.

4. Unproven Logistics Chains

- Floating offshore wind deployment requires new port infrastructure for assembly and tow-out operations.
- Many ports have not yet undergone necessary upgrades, forcing reliance on temporary solutions that are vulnerable to disruption.

5. Financial Fragility

- Emerging suppliers often lack the financial resilience of established offshore wind companies.
- If a supplier fails financially or cannot scale operations, the entire supply chain is at risk due to the absence of mature alternatives.

6. Rapid Technology Evolution

- As the sector is still developing, technology is evolving rapidly (e.g., larger WTGs, new mooring concepts).
- Late-stage design changes can propagate through the supply chain, causing rework and delays that mature industries are better equipped to absorb.

2.2.1.3 Further to the supply chain constraints relating to delivering a 24m air gap, there are benefits to the supply chain in delivering a 22m air gap. A reduced air gap is likely to result in major structural components with smaller overall dimensions and weights. There is a high likelihood that this will enable a wider range of supply chain companies (with limited or evolving fabrication limits) in Scotland and across the UK to be able to participate in fabrication and assembly. This will directly support the Project objectives regarding supply chain.

2.3 Technical Considerations

2.3.1.1 A reduction in air gap would be achieved by reducing the tower length of each WTG, this would result in several engineering benefits for the Project:

- Lower bending moment at the tower base;
- Lower motions at the nacelle;
- Increased separation of the tower natural frequency to the blade passing frequency.

2.3.1.2 As a result of these benefits, WTG towers with a reduced diameter and wall thickness could be adopted in the final design. A reduction in tower diameter and wall thickness will facilitate a wider range of fabrication processes and improve compatibility with existing supply chain capabilities. Currently, floating offshore WTG tower configurations exceed the dimensions of bottom-fixed WTG towers, presenting additional manufacturing challenges. The Project seeks to preserve maximum design flexibility to enhance the likelihood of leveraging Scotland's local supply chain for component fabrication. Remaining at an air gap of 24m, with the technical considerations highlighted above, would result in the extremely high likelihood of the Project needing to rely on supply chain from outside of Scotland, which would result in the project failing to meet Project objectives 4 and 5.

3. Project Objectives Alignment

3.1 Objective 1

3.1.1.1 The Project's first objective is focused on the ability to export significant volumes of electricity to the national grid, including making an important contribution to the Scottish Government's updated offshore wind ambition of 40GW of new deployment by 2035-2040.

3.1.1.2 If component or logistics availability becomes severely restricted and required components cannot be delivered within the specified timeframe, the Project will be subject to cancellation and Objective 1 would not be delivered. Concerns around supply chain limitations are established within **Section 2.2** and highlight that the reduction in air gap to 22m is necessary at this point to have confidence in the deliverability of the Project.

3.2 Objective 2

3.2.1.1 The Project's second objective is focused on the ability to provide security of supply for Scottish and UK consumers.

3.2.1.2 If component or logistics availability becomes severely restricted and required components cannot be delivered within the specified timeframe, the Project will be subject to cancellation and Objective 2 would not be delivered. Concerns around supply chain limitations are established within **Section 2.2** and highlight that the reduction in air gap to 22m is necessary at this point to have confidence in the deliverability of the Project.

3.3 Objective 3

3.3.1.1 The Project's third objective is focused on supporting the realisation of Scotland's deep-water potential and maximising the use of available seabed in synergy with other users.

3.3.1.2 If component or logistics availability becomes severely restricted and required components cannot be delivered within the specified timeframe, the Project will be subject to cancellation and Objective 3 would not be delivered. Concerns around supply chain limitations are established within **Section 2.2** and highlight that the reduction in air gap to 22m is necessary at this point to have confidence in the deliverability of the Project.

3.4 Objective 4 and 5

3.4.1.1 The Project's fourth objective is focused on supporting and securing the development of the Scottish supply chain.

3.4.1.2 The Project's fifth objective is to drive technological innovation that aims to lower costs for Scottish and UK consumers.

3.4.1.3 Greater flexibility in the availability of suitable WTGs and floating units, resulting from the air gap reduction, would also result in greater flexibility for ancillary components for the Project, such as subsea cables, mooring lines and anchors. Maintaining flexibility at this stage of the Project will allow the Applicant to work with Scottish suppliers to ensure that capability and capacity exist to deliver the components required, in the specified timeframe. It would also allow for the Applicant to select components that result in lower costs for Scottish and UK consumers.

3.4.1.4 If component or logistics availability becomes severely restricted and required components cannot be delivered within the specified timeframe, the Project will be subject to cancellation

and Objective 4 and 5 would not be delivered. Concerns around technical considerations and the knock-on supply chain impacts are established within **Section 2.3** and highlight that the reduction in air gap to 22m is necessary at this point to ensure that the Scottish supply chain can be developed and utilised.

3.5 Objective 6

3.5.1.1 The Project's sixth objective is to support socio-economic growth in Scotland and contribute to achieving a Just Transition.

3.5.1.2 As highlighted for Objective 4 and 5, greater component flexibility resulting from the air gap reduction will allow the Project to maximise utilisation of local supply chains and will result in greater socio-economic growth in Scotland. Concerns around technical considerations and the knock-on supply chain impacts are established within **Section 2.3** and highlight that the reduction in air gap to 22m is necessary at this point to ensure that the Scottish supply chain can be developed and utilised.

4. Conclusion

4.1.1.1 A review of the current supply chain has determined that it is not possible for the Applicant to commit to a minimum air gap of 24m at this early stage of the Project lifecycle. This is because the current floating offshore wind supply chain lacks the resilience and maturity required to guarantee such specifications without jeopardising Project delivery. Globally dispersed suppliers, limited manufacturing capacity, absence of standardised designs, and scarce installation assets introduce systemic risks that are industry wide. These challenges are compounded by immature port infrastructure, financial instability among emerging suppliers, and rapid technology evolution, creating uncertainty in component availability and compatibility.

4.1.1.2 Component delays or design change could cascade through the Project timeline, threatening the viability of the MarramWind Offshore Wind Farm. Maintaining the design flexibility afforded by reducing the air gap, will help mitigate these risks, improve compatibility with existing manufacturing capabilities, and maximize opportunities for Scottish supply chain participation.

5. References

MarramWind Limited, (2023). MarramWind Offshore Wind Farm Environmental Impact Assessment – Scoping Report. [online] Available at: https://www.marramwind.co.uk/userfiles/file/MarramWind_Scoping_Report.pdf [Accessed: 01 December 2025].

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