FIVE ESTUARIES OFFSHORE WIND FARM

VOLUME 5, REPORT 5: HABITATS REGULATIONS ASSESSMENT DEROGATION CASE

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DEFINITION OF ACRONYMS

Term	Definition
AA	Appropriate Assessment
AEoI	Adverse Effect on Integrity
AOE	Alde-Ore Estuary
AONB	Area Of Outstanding Natural Beauty
BEIS	Department of Business, Energy and Industrial Strategy (now DESNZ)
BESS	British Energy Security Strategy
CCC	Committee on Climate Change
CCRA	Climate Change Risk Assessment
CCUS	Carbon Capture, Utilisation and Storage
CfD	Contract for Difference
COP	UN Climate Change Conference
CO_2	Carbon Dioxide
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
DEFRA	Department of Environment, Food and Rural Affairs
DESNZ	Department of Energy Security and Net Zero
DTA	David Tyldesley and Associates
EACN	East Anglia Connection Node
EC	European Commission
ECC	Export Cable Corridor
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIEOMP	East Inshore and East Offshore Marine Plans
ES	Environmental Statement
EU	European Union
FFC	Flamborough and Filey Coast SPA
FTE	Full Time Equivalent
GB	Great Britain
GVA	Gross Value Added
GW	Giga Watt

Term	Definition
HRA	Habitats Regulations Assessment
IPCC	Intergovernmental Panel on Climate Change
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LBBG	Lesser Black Backed Gull
LSE	Likely Significant Effect
MDS	Maximum Design Scenario
MGN	Maritime and Coastguard Agency's Guidance Note
MHWS	Mean High Water Springs
MLS	Margate and Long Sands
MMO	Marine Management Organisation
MN 2000	Managing Natura 2000 Sites
MRF	Marine Recovery Fund
MW	Mega Watt
M & LS	Margate and Long Sands SAC
NDC	Nationally Determined Contribution
NE	Natural England
NETS	National Energy Transmission System
NGESO	National Grid Electricity System Operator
NPS	National Policy Statements
NSIP	Nationally Significant Infrastructure Project
ONSS	Onshore Substation
OWEIP	Offshore Wind Environmental Improvement package
OWF	Offshore Wind Farm
OWPS	Offshore Wind Policy Statement
O&M	Operation and Management
PEIR	Preliminary Environmental Information Report
PINS	The Planning Inspectorate
POs	Plan Options
RIAA	Report to Inform Appropriate Assessment
RLB	Red Line Boundary

Term	Definition
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
SEA	Strategic Environmental Appraisal
SLVIA	Seascape Landscape and Visual Impact Assessment
SNCB	Statutory Nature Conservation Bodies
SoS	Secretary of State
SPA	Special Protected Area
TCE	The Crown Estate
UK	United Kingdom
VE	Five Estuaries Offshore Wind Farm
WTG	Wind Turbine Generators
ZDA	Zone Development Agreement

GLOSSARY OF TERMS

Term	Definition
Array areas	The areas where the WTGs will be located.
Development Consent Order	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ).
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
ES	Environmental Statement (the documents that collate the processes and results of the EIA).
Export Cable Corridor (ECC)	The area(s) where the export cables will be located.
Habitats Regulation Assessment (HRA)	The assessment of the impacts of implementing a plan or policy on a European Site (as required by the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended)), the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it will adversely affect the integrity of the site
Landfall	The area where the Export Cables come ashore and transition from the marine environment to the terrestrial environment.
Maximum Design Scenario (MDS)	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.
Mitigation	Mitigation measures, or commitments, are commitments made by the project to reduce and/or eliminate the potential for significant effects to arise as a result of the project.
National Policy Statement (NPS)	Part 2 of the Planning Act 2008 sets out the national policy against which NSIP applications are assessed. NPSs set out guidance to inform the decision-making process for NSIPs. NPSs relevant to energy generation include: Overarching National Policy Statement for Energy (EN-1) (DESNZ, 2023) and National Policy Statement for Renewable Energy (EN-3) (DESNZ, 2023)
NSIP	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO under the Planning Act 2008. These include proposals for offshore wind farms with an installed capacity over 100 MW.

Term	Definition
Order Limits	The extent of development including all works, access routes, TCCs, visibility splays and discharge points. (Not Red Line Boundary (RLB))
The Applicant	Five Estuaries Offshore Wind Farm Limited (The Applicant).
The Planning Act (PA) 2008	The legislative framework for the process of approving major new infrastructure projects.
Special Area of Conservation (SAC)	A protected site under the Conservation of Habitats and Species Regulations (2017).
Special Protection Area (SPA)	Sites designated under EU Regulations (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive Regulations.

1 INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

1.1.1 This document has been prepared by GoBe Consultants Ltd. to detail the Habitats Regulations Assessment Derogation Case (hereafter referred to as 'derogation case') on the Five Estuaries Offshore Wind Farm project (hereafter referred to as VE), by Five Estuaries Offshore Wind Farm Limited (the Applicant).

1.1.2 The derogation case is prepared for those European or Ramsar site features where the Applicant has conceded an Adverse Effect on Integrity (AEoI) cannot be ruled out, as well as on a 'without prejudice' basis for those sites/ features where no AEoI has been determined, but the conclusion is not agreed by Natural England.

1.1.3 VE is a proposed extension to the operational Galloper Offshore Wind Farm. VE would be located approximately 37 km off the coast of Suffolk, England (at its closest point).

1.1.4 The Applicant has produced a Report to Inform Appropriate Assessment (Volume 5, Report 4: Report to Inform Appropriate Assessment) (RIAA), which assesses the potential effects from VE with respect to the conservation objectives of the European and Ramsar sites identified where a potential for a Likely Significant Effect (LSE) cannot be ruled out, to determine the potential for an Adverse Effect on Integrity (AEoI) alone and/or in-combination with other plans or projects.

1.1.5 The purpose of the RIAA is to provide sufficient information to the Competent Authority (in this case the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ)), in consultation with the relevant Statutory Nature Conservation Bodies (SNCBs) (including Natural England (NE) and the Joint Nature Conservation Committee (JNCC)), to enable them to undertake an Appropriate Assessment (AA) for VE.

1.1.6 At the conclusion of the Applicant's RIAA, it was determined that VE, in-combination with other plans and projects, would have no AEoI on any designated European site, apart from the following two sites:

- Alde-Ore Estuary (AOE) SPA – lesser black-backed gull (*Larus fuscus*) feature (collision during the O&M phase); and
- Alde-Ore Estuary Ramsar – lesser black-backed gull feature (collision risk during the O&M phase).

1.1.7 In terms of the Flamborough and Filey Coast SPA (FFC SPA), although the SoS has concluded an AEoI for kittiwake (*Rissa tridactyla*) for a number of recent projects, the contribution from VE alone across all bio-seasons equates to one (0.8) individual per annum (representing an increase of just 0.006% in baseline mortality). It is considered that this level of impact is not of sufficient magnitude to make a material contribution to natural kittiwake mortality rates at this site and, therefore, a conclusion of no AEoI has been reached for VE alone and in-combination.

1.1.8 For FFC SPA guillemot *Uria aalge* and razorbill *Alca torda* the contribution from VE alone is less than one (0.8 and 0.2 respectively) individual per annum, representing an increase in baseline mortality of 0.009% for guillemot and 0.003% for razorbill. It is considered that this level of impact is not of sufficient magnitude to make a material contribution to natural guillemot and razorbill mortality rates at this site and, therefore, a conclusion of no AEoI has been reached for VE alone and in-combination.

1.1.9 Despite the Applicant's RIAA conclusions for kittiwake, guillemot and razorbill species of the FFC SPA, Natural England has not agreed with them to date and therefore this site (and listed species) are included in the derogation case in case the SoS's HRA conclusions align with advice from Natural England.

1.1.10 For Margate and Long Sands (M&LS) SAC, the final route passes through the SAC overlapping with 1.26 km^2 (0.11 % of the total SAC) of the site, (the tip of the most northerly of the nine sandbanks identified within the SAC (Long Sands Head)) being located within the offshore ECC. Although the Applicant's RIAA concludes no AEoI, Natural England does not agree. Therefore, the M&LS SAC is included in the derogation case on a 'without prejudice' basis for if the SoS concludes otherwise.

1.1.11 Table 1.1 below provides a summary of the potential effects as outlined above.

Table 1.1 Relevant RIAA Conclusions

Site	Feature	Effect	RIAA Conclusion
Alde Ore Estuary SPA and Ramsar	Lesser black backed gull	In-combination collision risk	Cannot rule out an AEoI in-combination. **Derogation necessary**
Flamborough and Filey Coast SPA	Kittiwake Guillemot Razorbill Gannet	In-combination collision risk for kittiwake, guillemot and razorbill In-combination combined displacement and collision risk for gannet only	No AEoI alone or in-combination **'Without prejudice' derogation**
Margate and Long Sands SAC	Sandbanks	Physical habitat loss/ disturbance	No AEoI alone or in-combination **'Without prejudice' derogation**

1.1.12 The Applicant has therefore provided this Article 6(4) Habitats Regulations Assessment (HRA) derogation case to provide to the SoS for DESNZ with the necessary information to support a clear and overriding case for VE, should it conclude AEoI.

1.1.13 The Applicant strongly believes that if the SoS does find AEoI in respect of the AOE SPA, AOE Ramsar, the FFC SPA or the M&LS SAC, then, as presented in this document, there are no alternative solutions to VE, there are imperative reasons of overriding public interest for VE, and the policy objectives it will serve, that outweigh the risk of any adverse impact on these sites. Finally, there are deliverable and appropriate compensatory measures.

1.2 THE PROPOSED DEVELOPMENT

1.2.1 VE is a Nationally Significant Infrastructure Project (NSIP) under Section 15(3) of the Planning Act 2008 (as amended) and must therefore be consented through a Development Consent Order (DCO).

1.2.2 VE will be situated approximately 37 km from the Suffolk coastline (at its closest point), and will consist of the following:

- Northern and southern array areas (collectively known as the array areas);
- An offshore Export Cable Corridor (offshore ECC) within which micro siting of the offshore export cable will take place; and
- Onshore infrastructure including the landfall area, onshore Export Cable Corridor (onshore ECC), Onshore Substation (OnSS) and the Temporary Construction Compounds (TCCs).

1.2.3 A proposed maximum of 79 Wind Turbine Generators (WTGs) will be installed within the array areas, with a minimum blade tip height above mean high water spring (MHWS) of 28 m and a maximum blade tip height above MHWS/ LAT of 395 m and 399 m respectively. Electricity generated will be transported to the coastline via a maximum of 200 km of inter-array cables and up to 196 km of offshore export cables, each in their own trenches within the overall offshore ECC. Where the offshore export cables make landfall, the onshore export cables will continue to transport electricity underground to the OnSS which will connect to the National Grid's East Anglia Connection Node (EACN).

1.2.4 With a generating capacity of over 100 megawatts (MW), VE qualifies as a NSIP. The Planning Act (PA) 2008 is the primary legislation that establishes the legal framework for applying for, examination and determination of applications for DCOs for NSIPs.

1.2.5 A number of environmental assessments and surveys are required before a DCO can be granted. This includes the requirement to undertake a HRA under Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (UK Government, 2017a, herein referred to as the "Habitats Regulations") and Regulation 28 of the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2017 (UK Government, 2017b, herein referred to as the "Offshore Habitats Regulations"). The Applicant must therefore provide the relevant competent authority with the information it needs to undertake a Habitats Regulations Assessment (HRA) and establish the implications of the Proposed Development for sites within the National Site Network (National Site).

1.3 NPS COMPLIANCE

1.3.1 The Applicant's provision of a without prejudice derogation case for VE aligns with recent case precedent, Natural England's advice and requirements set out within the UK National Policy Statements (NPSs). The NPSs applicable to VE are:

- Overarching NPS for Energy (EN-1) (DESNZ, 2023a);
- NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b); and
- NPS Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c).

1.3.2 Of particular relevance to this derogation case, within Overarching NPS for Energy (EN-1), it states that:

'If, during the pre-application stage, the SNCB indicate that the proposed development is likely to adversely impact the integrity of HRA sites, the applicant must include with their application such information as may reasonably be required to assess a potential derogation under the Habitats Regulations.' (DESNZ, 2023a).

1.3.3 Section 1.4 provides further information on derogation under the Habitats Regulations.

1.4 DEROGATION PROVISIONS OF THE HABITATS REGULATIONS AND EXPERIENCE TO DATE

1.4.1 The HRA process provides a derogation consideration process under the Habitats Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (Regulations 29 and 36) that allows projects that may have an AEoI to be consented if three tests are met in a sequential order:

- there are no *"Alternative Solutions"* to the project;
- there are *"imperative reasons of overriding public interest"* (IROPI) for the project to proceed; and
- any necessary compensatory measures are secured to ensure that the overall coherence of the network of European sites is protected.

1.4.2 The derogation tests thereby underpin a three-step process and are hereafter referred to as the *"HRA Derogation Provisions"* (further detailed in Section 2).

1.4.3 In the UK, as of July 2023, there have been six OWF applications which have included "Without Prejudice" or "Shadow" HRA Derogation Cases as part of their consent applications, all of which are on the East Coast of England, as submitted to the Planning Inspectorate ("PINS") on behalf of the SoS for Business, Energy and Industrial Strategy (BEIS), now DESNZ. Of these, five have received consent to date, as summarised in Section 2, with reference made to these throughout this document. VE is the second offshore wind DCO application to be submitted on the basis of a 'conceded' derogation case for at least one species (i.e. LBBG). (The other is the Sheringham Shoal and Dudgeon Extensions application, which conceded derogation in relation to sandwich tern and kittiwake and which awaits determination by the Secretary of State).

1.5 THE APPLICANT'S PRIMARY POSITION AND SCOPE OF THIS SUBMISSION

1.5.1 The Applicant accepts that the application of the HRA Derogation Provisions cannot be ruled out for the LBBG feature of the AOE SPA and Ramsar sites and could be necessary for the kittiwake, guillemot and razorbill features of the FFC SPA and sandbank feature of the M&LS SAC, as reflected in the RIAA conclusions; and therefore, has provided the information necessary to support a clear and overriding derogation case for VE, which could be relied upon by the SoS.

1.5.2 The purpose of this document is also to provide, without prejudice, information to demonstrate that the Regulation 29 and 36 derogation tests will be met for VE if it is necessary to resort to them to consent VE.

1.5.3 The scope of the derogation case includes the AOE SPA and Ramsar site where the Applicant's RIAA could not rule out an AEoI, and therefore the Applicant accepts the likely need for a derogation for these sites.

1.6 THE STRUCTURE OF THIS DOCUMENT

1.6.1 This document is structured as follows:

- **Section 2** - **The legal framework and guidance**: provides the legal context and HRA process surrounding the application of derogation;
- **Section 3** - **Impacts on European Site features**: provides an overview of the relevant European site features; and potential impacts on the relevant features of those sites (SPAs, SACs and Ramsar Sites);
- **Section 4** - **Consideration of Alternatives**: comprises a demonstration of No Alternative Solutions. This section provides evidence to show whether the first derogation test has been met. It examines whether there are any feasible Alternative Solutions to VE that meet its core project objectives and concludes that there are none;
- **Section 5** - **Imperative reasons of overriding public interest (IROPI)**: comprises a demonstration of IROPI. This section provides evidence to show whether the second derogation test has been met. It identifies the IROPI that would enable a decision by the SoS to authorise VE if they were to conclude AEoI;
- **Section 6** - **Compensatory Measures**: References relevant documents for consideration of Compensatory Measures;
- **Section 7** – **Conclusion;** and
- **Section 8** - **References**.

1.7 SUPPORTING INFORMATION

1.7.1 This document refers to wider material that has been submitted as part of the DCO Application. For brevity, this information is not reproduced in full here, where references are made to material submitted as part of the DCO Application. The full details for all other material referenced within this document are provided in Section 8, however a list of the documents supporting the conceded and without prejudice Derogation Case is provided below:

- Volume 3: Draft Development Consent Order
- Volume 5, Report 1: Consultation report
- Volume 5, Report 4: Report to Inform Appropriate Assessment;
- Volume 5, Report 5.1: Benthic Compensation Strategy Roadmap
- Volume 5, Report 5.2: Outline Benthic In-Principle Monitoring Plan
- Volume 5, Report 5.3: Lesser Black-Backed Gull Compensation – Evidence, Site Selection and Roadmap
- Volume 5, Report 5.4: Kittiwake – Evidence, Site Selection and Roadmap
- Volume 5, Report 5.5: Guillemot and Razorbill – Evidence, Site Selection and Roadmap
- Volume 5, Report 5.6: Lesser Black-Backed Gull Implementation and Monitoring Plans
- Volume 5, Report 5.7: Kittiwake Implementation and Monitoring Plans
- Volume 5, Report 5.8: Guillemot and Razorbill Implementation and Monitoring Plans
- Volume 5, Report 5.9: Lesser Black-Backed Gull Compensation Site Suitability Report.
- Volume 6; Part 1; Chapter 4 : Site Selection and Alternatives
- Volume 6, Part 2, Chapter 4: Offshore Ornithology
- Volume 6, Part 2, Chapter 5: Benthic Ecology
- Volume 6, Part 3, Chapter 3: Socio-Economics, Tourism and Recreation
- Volume 9, Report 31: Schedule of Mitigation – Route map

1.8 RECORD OF CONSULTATION

1.8.1 The Applicant sent the draft HRA Derogation Case (Revision PINS Version) to PINS in November 2023. Table 1.2 provides PINS comments on that draft document and how they have been addressed.

Table 1.2: Record of consultation with PINS.

Comments from PINS (derogation case)		How addressed
Section 5	Section 5 does not specify whether any priority habitat or species would be affected by the Proposed Development. This should be confirmed in the final 'Without Prejudice' Derogation Case, so it is clear whether the imperative reasons of overriding public interest (IROPI) case must be limited or can include social benefits, as the Applicant has done in the draft report.	Addressed in Section 5 (no priority habitats or species identified).
Section 5	The overriding interest section of the IROPI statement is incomplete in the draft report so the Inspectorate is unable to comment at draft documents stage. It is noted that this will be presented in the final report submitted with the DCO application, as required by the Habitats Directive.	Section 5 (IROPI) is now complete.

1.8.2 In addition, further consultation on compensatory measures supporting documents was undertaken pre and post PEIR with a number of stakeholders with relevant responses recorded in the RIAA (Volume 5, Report 4) and the relevant roadmaps listed in Section 1.7.1.

2 LEGAL FRAMEWORK AND GUIDANCE

2.1 INTRODUCTION

2.1.1 The legal framework upon which the derogation case for VE is based, is detailed within this Section.

2.1.2 Section 2.2 provides an overview of the original legislation of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive), and Section 2.3 provides an overview of how this was transposed to UK law through the Habitat Regulations (1994 – 2017) and how the HRA process has changed since the UK's withdrawal from the EU (European Union (Withdrawal) Act 2018).

2.1.3 Section 2.4 provides an overview of the HRA process and is provided in reference to the primary legislation of relevance to VE, which is Regulation 29 and 36 of Offshore Habitats Regulations (UK Government, 2017b). First, this briefly outlines HRA Stages 1 and 2, which provide screening for likely significant effects (LSE) and an AA. These inform but are not part of the derogation case.

2.1.4 Section 2.5 presents HRA stages 3 and 4 (derogation) in more detail including the Assessment of Alternatives, consideration of IROPI and provision of compensatory measures.

2.2 EU HABITATS DIRECTIVE

2.2.1 The EU Habitats Directive (Council Directive 92/43/EEC, the Habitats Directive) and, by virtue of Article 7 of that Directive, also the Wild Birds Directive (Directive 2009/147/EC) (the Birds Directive), termed jointly as the Nature Directives, seek to conserve particular natural habitats and wild species across the EU by, amongst other measures, establishing a network of sites ("European sites" known in the UK as National Sites); and a legal framework for species requiring strict protection (European protected species). The aim is to ensure the long-term survival of viable populations of Europe's most valuable and threatened species and habitats, to maintain and promote biodiversity.

2.2.2 The requirements concerning the authorisation of plans or projects which may adversely affect European sites are contained in Articles 6(3) and 6(4) of the EU Habitats Directive, see Table 2.1 below.

Table 2.1: EU Habitats Directive 92/43/EEC

Article 6(3)
"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4 (i.e., Art. 6(4)), the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."
Article 6(4)
"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission to other imperative reasons of overriding public interest."

2.3 UK LEGISLATION

2.3.1 Articles 6(3) and 6(4) of the EU Habitats Directive specifically are transposed by the following regulations in the UK (prior to the UK's withdrawal from the EU), collectively known as the Habitats Regulations:

- Regulation 49 and 55 of The Conservation (Natural Habitats, &c.) Regulations 1994 (UK Government);
- Regulation 64 and 68 of Habitats Regulations 2017 (UK Government, 2017a); and
- Regulation 29 and 36 of Offshore Habitats Regulations 2017 (UK Government, 2017b).

2.3.2 Since the UK's withdrawal from the EU (European Union (Withdrawal) Act 2018), the HRA process implemented under the Habitats Regulations has been subject to a few minor changes, such as: European sites in the UK, previously termed "European sites", are collectively termed the "National Site Network", including those that formed part of the Natura 2000 network immediately before 31 December 2020 plus any subsequently designated by the UK Government.

2.3.3 The UK Department for Environment Food and Rural Affairs (Defra) provides guidance on how Government will adhere to EU guidance on meeting the management objectives for what is now the UK's National Site Network (the "Network Objectives") (DEFRA, 2021); and

2.3.4 Section 6(2) of the European Union (Withdrawal) Act 2018 (as amended) establishes that UK courts *"may have regard to anything done by a EU entity [i.e., the EC]…so far as it is relevant".*

2.3.5 In the UK, the Habitats Regulations define National Sites as Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Community Importance (SCIs) and candidate SACs and SPAs. Ramsar sites (as designated under the Ramsar Convention) are also afforded the same protection as National Sites by UK Government policy.

2.4 OVERVIEW OF HRA STAGES 1 AND 2

2.4.1 HRA is generally described as a sequential process, as Regulation 36(1),(2) of the Offshore Habitats Regulations 2017 is consequent upon and follows from a negative outcome to Regulation 29(1),(2) (UK government, 2017). In practice, there can be a degree of overlap between stages and the process can be iterative. There are four broad stages for HRA required in Regulation 29(1), (2) and 36(1),(2) as shown in Table 2.2 These 'derogation tests' are hereafter referred to as the 'HRA Derogation Provisions'.

Table 2.2: The four stages of the HRA process

The four stages of HRA	
Habitats Regulations Provision	**HRA Stage**
Regulation 29(1),(2)	Stage 1 - Screening for Likely Significant Effects (LSE) Stage 2 – Appropriate Assessment (AA)
Regulation 36(1),(2)	Stage 3 – Assessment of Alternatives Stage 4 – Consideration of IROPI and compensatory measures

2.4.2 For stages 1 and 2, the Habitats Regulations require all Competent Authorities to consider whether any plan or project will have an LSE on a National Site. LSE is determined through a HRA Screening Report. Following a finding where LSE cannot be ruled out, the potential for an AEoI is determined through an AA. Both the HRA Screening Report and AA are together known as an HRA. The Habitats Regulations underlies the sequential decision-making tests applied under the HRA process to projects likely to significantly affect European sites.

2.4.3 HRA Stages 1 and 2 require that any project (or plan) likely to have a significant effect on a National Site (alone or in combination) must be subject to AA of the implications for that National Site in view of the site's conservation objectives. The exception to this requirement is when the project is directly connected with or necessary to the management of the sites in question; this is not the case for VE.

2.4.4 The RIAA and accompanying screening and integrity matrices are required to set out the methodology and evidence in respect of HRA stages 1 and 2, applying the above legal principles. The 'shadow' AA undertaken by the Applicant is documented in the RIAA and is referred to throughout this document as it informs stages 3 and 4.

2.4.5 A project must not be authorised if it is concluded, based on the AA, that there would be an AEoI of any National Site, unless the requirements of stages 3 and 4 are satisfied. HRA stages 3 and 4 are directly applied to the derogation case and the process, which is followed, supported by legislation and guidance, is detailed separately below.

2.4.6 It is worth noting that the Planning Inspectorate's Advice Note Ten (Planning Inspectorate, 2022) incorporates these stages (3 and 4) into a single stage 3. However, for the purpose of this document stages 3 and 4 remain separate. This does not make a difference to the outcome of this report.

2.5 OVERVIEW OF HRA STAGES 3 AND 4

2.5.1 The Habitats Regulations acknowledge that there may be IROPI for some plans and projects to proceed where the public interest outweighs possible harm to a National Site if harm is adequately compensated. The regulations therefore allow projects that may have an AEoI to be consented. In such a scenario, a derogation could only be provided if three tests are met in a sequential order. These are stages 3 and 4 and together form the derogation process, as follows:

- there are no Alternative Solutions to the project;
- there are IROPI for the project to proceed; and
- Compensatory measures are secured that ensure that the overall coherence of the network of European sites is protected.

2.5.2 These 'derogation tests' are underpinned by Regulations 29 and 36 of the (UK) Offshore Habitats Regulations, as presented in Table 2.3. These are hereafter referred to as "derogation".

2.5.3 The requirement and nature of derogation in stages 3 and 4 are informed by the extent of any AEoI identified through stages 1 and 2.

Table 2.3 Alternative Solutions, IROPI and Compensation Measures, as set out in the (UK) the Offshore Habitats Regulations.

Derogation Provisions of the Offshore Habitats Regulations	
Regulation	**Considerations of HRA Stages 3 and 4**
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*

Derogation Provisions of the Offshore Habitats Regulations	
	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 a consent, permission or other authorisation, is affirmed on review 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 Natura 2000 is protected."*

2.6 GUIDANCE

2.6.1 The Applicant has drawn on a wide range of guidance (see Section 8) as listed below.

2.6.2 UK Guidance:

- Department for Environment, Food and Rural Affairs (Defra) (2012). Habitats Regulations: guidance on the application of article 6(4);
- Defra (2021). Best practice guidance for developing compensatory measures in relation to Marine Protected Areas; and
- David Tyldesley and Associates (DTA) (2021b) The Habitats Regulations Assessment Handbook.

2.6.3 EU Guidance:

- European Commission (EC) (2010). Wind energy developments and Natura 2000;
- EC (2018). Managing Natura 2000 Sites ("MN 2000"): The provisions of Article 6 of the Habitats Regulations 92/43/EEC; and
- EC (2020b). Guidance document on wind energy developments and EU nature legislation.

2.7 UK PLANNING DECISIONS

2.7.1 The UK planning decisions have been used as a guide on the validity of types of evidence and scenarios and draw on the various guidance itself (e.g. Defra 2012). There have been six derogation cases for offshore wind projects consented as of February 2024 by the UK's SoS for Business, Energy and Industrial Strategy (BEIS) /Energy Security and Net Zero (DESNZ). These include:

- Hornsea Three OWF (Hornsea Three) (BEIS, 2020a);
- Hornsea Four OWF (Hornsea Four) (DESNZ, 2023);
- Norfolk Boreas OWF (Norfolk Boreas) (BEIS, 2021a);
- Norfolk Vanguard (BEIS, 2022a);
- East Anglia ONE North (BEIS, 2022b); and
- East Anglia TWO (BEIS, 2022c).

2.7.2 All six of these OWF projects are located off the East Coast of England in the North Sea and are referred to throughout this document for the element relevant to each section.

3 IMPACTS ON NATIONAL SITE FEATURES

3.1 OVERVIEW

3.1.1 This derogation case has been developed with reference to potential for adverse effects on the LBBG feature of the AOE SPA and Ramsar sites, and a 'without prejudice' derogation case for the kittiwake, guillemot and razorbill features of the FFC SPA and the sandbank feature of the M&LS SAC.

3.1.2 Detailed information about the National sites, the relevant feature affected, the conservation objectives, including the range of ecological attributes that are most likely to contribute to the site's overall integrity and the evidence base are submitted with the DCO Application. Most notably within the RIAA and associated derogation documents (Volume 5, Report 4: Report to Inform Appropriate Assessment and those additional Volume 5 derogation documents highlighted above in Section 1.7.1). The purpose of the derogation case is not to repeat this information. However, a brief overview of the impacts identified for each affected feature is provided in this section.

3.2 ORNITHOLOGY RECEPTORS

3.2.1 The impacts identified in the RIAA for ornithology receptors are summarised within Table 3.1. Impacts for guillemot, razorbill and kittiwake are calculated for the non-breeding seasons.

Table 3.1: Summary of ornithological impacts identified within the RIAA

Species (SPA)	VE		In-combination	
Displacement				
	Predicted mortality	Increase in baseline mortality %	Predicted mortality	Increase in baseline mortality %
Guillemot (FFC)	0.8	0.009	178.9	1.956
Razorbill (FFC)	0.2	0.005	38.6	0.600
Collision				
Kittiwake (FFC)	0.8	0.006	473.8	3.640
Lesser black-backed gull (AOE)	5.7	1.417	70.3	17.475

3.2.2 Due to the very low impacts for guillemot, razorbill and kittiwake (all less than 1 individual) it has been concluded that there is no AEoI through an effect on these species, as concluded in the RIAA. In addition to the very small impacts, the headroom released from Galloper OWF (as outlined in the RIAA) exceeds the full contribution from VE alone to these SPAs. This would reduce the risk of an in-combination AEoI RIAA conclusion for these species if the VE impacts are considered with Galloper OWF.

3.2.3 On this basis, it is reasonable to assume that HRA derogation is not necessary for kittiwake, guillemot and razorbill features of the FFC SPA. However, it would not alter the conclusions of the assessment for lesser black-backed gull.

3.3 SANDBANK HABITAT

3.3.1 The offshore export cable corridor overlaps with a small section of the M&LS SAC and, due to the potential use of cable protection in this area, could result in a permanent or long-term loss of SAC feature sandbanks. This would have the potential to result in habitat loss for those organisms that rely on the sandbank habitat i.e., potentially reducing the area available for those sub-features.

3.3.2 In total the offshore export cable corridor overlaps with 1.26 km^2 of the M&LS SAC which is designated for sandbank features. The maximum total area that is expected to be disturbed by cable protection is 0.54 km^2 which equates to 0.08 % of the total SAC. Further details of the assessment can be found within Volume 6, Part 2, Chapter 5: Benthic Ecology and Volume 5, Report 4: RIAA.

3.3.1 Despite the low magnitude of potential effects, the Applicant has provided a Mitigation Plan (Volume 9, Report 13: Margate and Long Sands SAC: Benthic Mitigation Plan) which addresses any uncertainty around whether the Proposed Development may adversely affect the COs for the SAC. Therefore, on this basis, the RIAA reaches a conclusion of no AEoI alone or in-combination with other plans and projects.

3.3.2 However, in the event that the SoS disagrees with the RIAA conclusion, without prejudice compensatory measures have been put forward, as set out in Volume 5, Report 5.1: Benthic Compensation Strategy Roadmap and Volume 5, Report 5.2: Benthic In-Principle Monitoring Plan.

4 CONSIDERATION OF ALTERNATIVES

4.1 INTRODUCTION

OVERVIEW

4.1.1 Sections 1 & 2 of this derogation case sets out the legal and regulatory background to derogation. The Applicant has assigned a high level of precaution in presenting a reasonable worst-case potential impact on designated features of the AOE SPA and Ramsar site, the FFC SPA and the M&LS SAC.

4.1.2 Section 4 (this part) of the derogation case now examines the need for VE and whether there are any feasible Alternative Solutions to the Proposed Development. It is demonstrated with evidence to the SoS that there are no Alternative Solutions which meet VE's objectives.

4.1.3 It is of note that the "need" for VE presented in this section, overlaps to some extent with the IROPI detailed in Section 5. Both sections consider climate change and national actions and polices. However, the IROPI focuses further on national imperative and specific needs of the public, whilst the "need" that informs the assessment of alternatives, has greater emphasis on technology and carbon neutral power capacity required to meet national targets. Where greater detail is provided in another section, this has been referred to.

4.1.4 A large range of alternatives have been identified, considered, and discounted. These range from "doing nothing", to alternative sites, routes, designs, scales and working methods.

CONTENT AND STRUCTURE

4.1.5 The approach taken follows the legal context and HRA process surrounding the application of derogation, together with guidance and case history, as set out in Section 2. With limited prescriptive legislation for Alternative Solutions, the approach adopted by the Applicant has been principally guided by UK and EC guidance and opinions, as well as UK planning decisions.

4.1.6 Recognising that the case for Alternative Solutions can be a multi-staged process, the Applicant has adopted the four principal steps set out below which consider the potential Alternative Solutions in a structured and sequential process:

- **Step 1 – Project objectives and need**: Define the objectives or purpose of VE and the need for the project.
- **Step 2 – The risk of harm:** Identify the risk of harm to National Site(s), to inform Step 4.
- **Step 3 – Alternatives:** Consideration of alternatives. Are there financially, legally, and technically feasible alternative solutions; and
- **Step 4 – Comparison:** Assess and compare the impacts of any feasible Alternative Solutions with a lesser effect on the integrity of the European Site.

4.1.7 The assessment of Alternative Solutions is supported particularly by the core objectives of VE, which are provided below.

STEP 1 – CORE OBJECTIVES AND NEED FOR VE

PROJECT OBJECTIVES

4.1.8 The objectives of VE are summarised below:

- To generate low carbon electricity from an OWF in support of the decarbonisation of the UK electricity supply;
- To export electricity to the UK National Grid to support UK commitments for offshore wind generation and security of supply;
- To optimise generation and export capacity within the constraints of available (UK) sites and onshore transmission infrastructure; and
- To deliver a significant volume of (UK) offshore wind before 2030.

4.1.9 The basis for these objectives is set out in detail in the Planning Statement (Volume 9, Report 1) for VE.

CLEAR AND URGENT NEED FOR VE

4.1.10 As established, the key drivers underpinning the need for offshore wind power projects are:

- The need to reduce greenhouse gas emissions;
- The need for energy security; and
- The urgency of the need for low carbon electricity capacity.

NEED TO REDUCE GREENHOUSE GAS EMISSIONS:

4.1.11 Greater energy generation from offshore wind is critical for both the reduction of electricity related greenhouse gas emissions, as well as providing a timely contribution to a significant increase in electricity demand due to electrification of transport, heat and industrial demand.

4.1.12 The commitments originally made by the UK and international governments at the United Nations Conference of the Parties 21 (COP21) to the Framework Convention on Climate Change, in Paris in 2015 in (the Paris Agreement) were to limit global temperature increase to below 2^{o}C (preferably 1.5^{o}C) were ratified by the UK foreign secretary in November 2016 and implemented through the fifth UK Carbon Budget. This commits the UK to a 57% reduction in carbon emissions by 2032, compared to emission levels in 1990 (Committee on Climate Change (CCC), 2015).

4.1.13 Most recently, in line with the recommendation of the CCC and the sixth Carbon Budget, the UK government has announced that it will set the world's most ambitious climate change target into law to reduce emissions by 78% by 2035 compared to 1990 levels (BEIS, 2021d).

4.1.14 In 2019, the Sector Deal (BEIS, 2019 reported total UK greenhouse gas emissions were provisionally 45.2% lower than in 1990 and 3.6% lower than 2018 (BEIS, 2020b). This is mainly because of changes in the fuel mix used for electricity generation, away from coal and towards renewables. However, as outlined above, the world is not currently on track to meet the long-term temperature goal set out in the Paris Agreement, with a 2.7ºC increase predicted following COP26 (CCC, 2021a).

4.1.15 The Queen's Speech on 19 December 2019 (HM Government, 2019) confirmed that Government will take steps to meet the world-leading target of net zero greenhouse gas emissions by 2050. The CCC report on recommendations for achieving net zero states that 75GW of offshore wind could be required to reach net zero by 2050 (CCC, 2019). The British Energy Security Strategy (BEIS, 2022d) provides a target of 50GW of operational offshore wind farms by 2030.

4.1.16 NPS EN-1 reflects the UK commitment to the legally binding targets to cut greenhouse gas emissions and recognises that future large-scale renewable energy generation is likely to come from offshore wind projects. NPS EN-1 (Paragraph 3.3.1) reinforces the need for new electricity NSIPs and their urgency:

"Electricity meets a significant proportion of our overall energy needs and our reliance on it will increase as we transition our energy system to deliver our net zero target. We need to ensure that there is sufficient electricity to always meet demand; with a margin to accommodate unexpectedly high demand and to mitigate risks such as unexpected plant closures and extreme weather events."

4.1.17 The UK Government is required to publish a Climate Change Risk Assessment (CCRA) every five years under the 2008 Climate Change Act. The CCRA3 was published in 2022 (Defra, 2022c). The risk assessment considers 61 UK-wide climate risks and opportunities cutting across multiple sectors of the economy and prioritises the following eight risk areas for action before 2025:

- risks to the viability and diversity of terrestrial and freshwater habitats and species from multiple hazards;
- risks to soil health from increased flooding and drought;
- risks to natural carbon stores and sequestration from multiple hazards;
- risks to crops, livestock and commercial trees from multiple climate hazards;
- risks to supply of food, goods and vital services due to climate-related collapse of supply chains and distribution networks;
- risks to people and the economy from climate-related failure of the power system;
- risks to human health, wellbeing and productivity from increased exposure to heat in homes and other buildings;
- multiple risks to the UK from climate change impacts overseas.

4.1.18 VE will have an export capacity greater than 100 megawatts (MW) and in the context of reductions in the capacity of the UK to generate electricity (total UK generating capacity has fallen from 85GW in 2009 to 75.8GW in 2021 – BEIS 2022e), will therefore contribute to meeting the UK Government's ambitious target of 50GW of generating offshore wind energy by 2030. This will help to alleviate the risks associated with climate change such as flooding, water supply shortages and risks to health, food security and productivity and trade. VE will provide an important element for the UK to achieve the target of net zero greenhouse gas emissions by 2050. VE will deliver significant quantities of low-carbon electricity from as early as the late 2020s. This is in line with the UK's Committee on Climate Change (CCC)'s recent identification of the need for urgent action to increase the pace of decarbonisation in the Great Britain (GB) electricity sector (CCC, 2022).

4.1.19 Greater energy generation from offshore wind is critical for both the reduction of electricity related emissions, as well as providing a timely contribution to a massive increase in electricity demand due to electrification of transport, heat and industrial demand.

THE NEED FOR ENERGY SECURITY

4.1.20 A step change in offshore wind has been led by the government capacity targets of 50GW from offshore wind by 2030 (UK Government, 2022). NPS EN-1 reflects and confirms this target.

4.1.21 To meet emissions targets, the electricity being consumed will need to be almost exclusively from low carbon sources.

4.1.22 This shows that energy security has been a key concern in the UK for several years, however the issue has recently been exacerbated by recent sanctions on Russian gas. As a result, European gas prices have increased by more than 200% from 2021 to 2022. This has led to extreme increases in the cost of living, with gas providing a key source of energy to the UK. (BEIS, 2022e).

4.1.23 NPS EN-1 states that *"Decarbonisation means we are likely to become more dependent on some forms of energy compared to others. Using electrification to reduce emissions in large parts of transport, heating and industry could lead to more than half of final energy demand being met by electricity in 2050, up from 17 per cent in 2019, representing a doubling in demand for electricity."*

4.1.24 NPS EN-1 further recognises that it is critical that the UK continues to have secure and reliable supplies of electricity as the transition to a low carbon economy is made, and, to meet this objective, that SoS should give substantial weight to the contribution which projects would make towards satisfying this need.

4.1.25 NPS EN-1 states that *"we need a diverse mix of electricity infrastructure to come forward, so that we can deliver a secure, reliable, affordable, and net zero consistent system in 2050 for a wide range of demand, decarbonisation, and technology scenarios".*

4.1.26 The UK Government recognises the importance to businesses and households of access to an affordable, secure and sustainable supply of energy:

"Where applicable, national objectives with regard to reducing energy import dependency from third countries, for the purpose of increasing the resilience of regional and national energy systems" (The UK's Draft Integrated National Energy and Climate Plan, - BEIS, 2019a).

4.1.27 BEIS (2022e) provides the UK Energy Statistics for 2021. Similarly, to 2020, energy consumption remained low in comparison to pre-pandemic levels, increasing from April as restrictions eased. Overall net energy imports increased by 8% in 2021, which, combined with a drop in exports increased the UK's net import dependency to 38%. Total energy production was down 14% from 2020 with oil and gas output reduced by 17%. Electricity demand in the UK is likely to rise during the 2020s as a greater proportion of the heat and transportation systems electrify.

4.1.28 Reliance on global markets for imported energy leaves the UK vulnerable to spikes in world energy market prices, political pressure, and potentially physical supply disruptions and the knock-on effects of supply challenges in other countries.

4.1.29 Meeting decarbonisation and energy security targets necessitates a significant amount of energy infrastructure, both large and small-scale.

4.1.30 For example, a significant proportion of France's nuclear plants have been closed during 2022 due to planned maintenance, damage to facilities and very hot weather (World Nuclear Association, 2023), and so the UK has been using more gas in power stations to supply France via 3GW of electricity interconnectors, so while interconnectors can help improve the UK's energy security, they can also place additional demand burden when other countries need them for their own security (Ofgem, 2023).

4.1.31 The UK Government recognised in *"The UK's Draft Integrated National Energy and Climate Plan"* the importance to businesses and households of access to an affordable, secure and sustainable supply of energy*:*

"Where applicable, national objectives with regard to reducing energy import dependency from third countries, for the purpose of increasing the resilience of regional and national energy systems" (BEIS, 2019a).

4.1.32 The British Energy Security Strategy (BEIS, 2022d) therefore provides a target of 50GW of operational offshore wind farms by 2030 and recognises the need to fast track the consenting process in order to achieve this target and improve the UK's energy security. In addition, the Strategy involves an *"approach to reduce global reliance on Russian fossil fuels whilst pivoting towards clean, affordable energy"* in the light of the invasion of Ukraine and concerns around reliance in Europe on Russian fuel imports, the constraining of which has led to significant global price rises for consumers.

4.1.33 The strategy has been rapidly deployed with the House of Commons Library research finding in August 2022 (House of Commons, 2022) that:

"In 2021 imports from Russia made up 4% of gas used in the UK, 9% of oil and 27% of coal. In 2021, imports of gas, oil and coal from Russian to the UK were worth a combined £4.5 billion. According to Eurostat, in 2020, imports from Russia made up 39% of the gas used in the EU, 23% of oil imports and 46% of coal imports.

In June 2022, the fourth full month since the invasion, according to UK trade statistics, the UK Imported no oil, gas or coal from Russia. This was the third month in a row with no Russian gas imports, but the first month (since 2000 when this data is available back to) with no gas, oil or coal imports from Russia".

4.1.34 In a global market, this further reduction in supply from Russia continues the upward pressure on prices for energy in the UK and Europe even when the UK's supplies are more diversified.

4.1.35 VE will make a significant contribution to the UK's energy security from the late 2020s. By being connected at the transmission system level, VE will play an important role in the resilience of the GB electricity system from an adequacy and system operation perspective.

THE URGENCY OF THE NEED FOR LOW CARBON ELECTRICITY CAPACITY

4.1.36 VE will deliver significant quantities of low-carbon electricity from as early as the late 2020s. This is in line with the UK's Committee on Climate Change (CCC)'s recent identification of the need for urgent action to increase the pace of decarbonisation in the Great Britain (GB) electricity sector (CCC, 2022). VE is expected to provide enough green electricity to power more than one million UK homes, maximising the capacity of generation in the wind-rich, accessible, and technically deliverable proposed location, is to the benefit of all UK consumers.

4.1.37 In November 2023, in response to the impact of global events on supply chains, the UK government increased the maximum price offshore wind and other renewables projects can receive in the next Contracts for Difference (CfD) auction to ensure it is performing effectively. VE would therefore provide highly competitive electricity compared to conventional and low-carbon generation, both in GB and more widely.

4.1.38 Decarbonisation is the act of reducing the carbon footprint (primarily in the form of greenhouse gas emissions) arising from the use of energy in society, to reduce the warming impact on the global climate. VE is a major renewable energy infrastructure project with an anticipated capacity of at least 100 MW of low-carbon energy, which will provide a significant contribution towards the process of decarbonisation of energy consumption in the UK, as part of a wider global aim to address climate change.

4.1.39 Human-induced warming has reached approximately 1ºC above pre-industrial levels and without a significant and rapid decline in emissions across all sectors, global warming is not likely to be contained (IPCC, 2021). The impacts of climate change are global in scope and unprecedented in human existence. Decarbonisation is already a global challenge, but our efforts, and those of future generations, will need to accelerate if urgent and meaningful actions are not set in motion now so that they can deliver in the critical 2020s and beyond (further consideration on the global imperative is provided in Section 5).

4.1.40 Any delay in reducing carbon emissions today results in greater carbon emissions to the atmosphere, higher global temperature rises and an increased level of and speed of action required to halt impacts. A rise in global temperatures above 1.5°C has potential to cause irreversible climate change, the potential for widespread loss of life and severe damage to livelihoods. Yet greenhouse gases projected at a global scale (using Nationally Determined Contribution (NDCs)) are now set to exceed 1.5°C by 2030 and look increasingly likely to exceed 2°C after 2030 (IPCC 2021). Therefore, any delays incurred now, make the challenge significantly more difficult for the years ahead.

4.1.41 As such, the UK, has declared, in common with many other countries, that we face a global "climate change emergency" (UK Parliament, 2019). By definition, an emergency is a grave situation that demands an urgent response and legal obligations have been committed to as follows:

- International: The United Nations Framework Convention on Climate Change led Paris Agreement (2015);
- UK: the Climate Change Act 2008 (as amended) and Glasgow Climate Pact (2021) (including Scotland and UK).

4.1.42 These legal instruments provide the commitments to become carbon neutral, i.e., to reach "Net Zero" by the middle of the 21st century internationally, by 2050 in the UK; and with interim targets. However, the UK is not currently on track to meet the fourth (2023-2027) or fifth (2028-2032) carbon budgets and requires more challenging measures (CCC 2020; CCC undated).

4.1.43 Urgent actions are required in the UK and abroad, to increase decarbonisation and limit global warming. To meet the Net Zero target, the national energy ecosystem requires transformation. Therefore, low-carbon, wind and solar generation capacity will be required to meet the UK's legally binding targets as set out by the Climate Change Act 2008 (as amended).

4.1.44 Paragraph 4.2.4 of EN-1 presents the conclusion that there is a critical national priority (CNP) for the provision of nationally significant new offshore wind infrastructure (and supporting onshore and offshore network infrastructure). As reflected in EN-3, *"subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure, and it should be progressed as quickly as possible".*

4.1.45 VE is designed to meet this imperative and enacts such fundamental and urgent national objectives articulated at the highest level in legislation and policy documents.

4.1.46 Extensions to operational wind farms have proven to be a successful way of efficiently developing more offshore generating capacity (e.g. Burbo Bank, Kentish Flats, and Walney Extensions). VE is an Extension project which meets the TCE's specified application criteria and was granted a lease in August 2019 following a selection process which included a Plan HRA. It is worthy of not that TCE is currently (as of March 2024) drafting a supplementary HRA to consider potential/ proposed capacity increases for Extension projects.

4.1.47 Extension projects take advantage of the technological gains made since the original installations were made. They benefit from data, information and experience from existing infrastructure, real life experience of working on site, earlier geological and environmental studies and direct experience of the wind resource through existing wind turbine performance (TCE, 2019).

4.1.48 The wind farm extensions, which together offer significant generation potential, will also play a key part in building the industry scale necessary to meet the government's climate change targets. Scale is crucial to delivering further cost reductions, making offshore wind ever cheaper. Not only are offshore wind turbines becoming larger and more efficient, but a larger UK offshore wind industry with a proven track record de-risks future projects.

4.1.49 Given the pre-existing knowledge of these sites, and the ability for them to be brought forward in good timescales, wind farm extensions represent a low risk and low-cost option for the UK.

STEP 2 – POTENTIAL HARM TO NATIONAL SITES (TO INFORM STEP 4)

4.1.50 The evidence and submissions concerning the residual potential impacts on LBBG of AOE SPA and Ramsar sites are detailed in (Volume 5, Report 4: RIAA) and summarised in Section 3 of this document. The total in-combination number of LBBG from the AOE SPA predicted to be subject to collision resultant mortality from the assessed OWFs, including VE, is set out in Table 3.1.

4.1.51 Based on this in-combination impact, the RIAA concluded that the potential for AEoI on lesser black backed gull cannot be ruled out.

4.1.52 The evidence and submissions concerning the residual potential impacts on kittiwake, guillemot and razorbill of the FFC SPA are also detailed in the RIAA and summarised in Section 3 of this document.

4.1.53 To re-iterate, the predicted contribution from VE to an in-combination effect is considered minimal, as shown in Table 3.1, and a without prejudice derogation case is therefore being presented for these four bird species to address the risk that the SoS disagrees with the RIAA conclusion.

4.1.54 It is important to establish the context in which the following considerations and tests are applied. VE's predicted in-combination contribution across all projects is considered insignificant in relation to other OWF projects where derogation has been necessary. The evidence and submissions concerning the residual potential impacts on designated sandbanks of the M&LS SAC are, as for the above sites, detailed in the RIAA and set out in Section 3 of this document. While the RIAA conclusion is no potential for an AEoI, in relation to physical habitat loss/ disturbance from VE alone, a without prejudice derogation case is being presented for sandbanks to address the risk that the SoS disagrees with the RIAA. All potential adverse effects relevant to this document are summarised in Table 1.1.

STEP 3 – CONSIDERATION OF ALTERNATIVES

SCOPE OF ALTERNATIVES CONSIDERATION

4.1.55 In his decision on Hornsea Three, the SoS published the following advice on the scope of alternatives that required consideration:

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

4.1.56 The SoS's advice is therefore to consider the following alternative options:

Do nothing.

Alternative types of wind farm projects - including:

- Offshore wind farms not in UK Exclusive Economic Zone (EEZ);
- Offshore wind farms within UK EEZ, including:
  - At other locations available to the Applicant;
  - Within other Zones leased from The Crown Estate by other developers; and
  - Within Zones to be leased by The Crown Estate under the Licensing Round 4"

4.1.57 The same approach was followed in the Hornsea Project Four decision (DESNZ, *2023).* The SoS's advice for Hornsea Project Three and Hornsea Project Four coincided with Defra (2021) draft guidance[1] which established that the consideration of alternative solutions need not go beyond the form of energy generation proposed, to deliver the objectives of renewable energy production *"Examples of alternatives that may not meet the original objective include a proposal that: offers nuclear instead of offshore wind energy".*

4.1.58 The more recent NPS EN-1 (paragraph 4.2.21) further provides *"For both derogations, the Secretary of State will consider the particular circumstances of any plan or project, but starting from the position that energy security and decarbonising the power sector to combat climate change: requires a significant number of deliverable locations for CNP Infrastructure and for each location to maximise its capacity. This NPS imposes no limit on the number of CNP infrastructure projects that may be consented. Therefore, the fact that there are 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."*

[1] The Applicant is aware of Defra's current (March 2024) consultation on draft updated assessment guidance ('Policies for MPA Assessment Guidance'), however Defra's position on alternatives presented therein has not changed substantially/ materially to the approach taken in this document.

4.1.59 NPS EN-1 also sets limits on alternatives that may be considered in decisions on development consent applications. Whilst this policy applies to development consent decisions rather than specifically to the HRA, it lends emphasis to principles established in the Defra Guidance, in particular where it states in paragraph 4.3.23 that the Secretary of State: *"should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security and climate change benefits) in the same timescale as the proposed development.* Paragraph 4.3.27 also states: *alternative proposals which mean the necessary development could not proceed, for example because the alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision.* Paragraph 4.3.28 goes on to say: *alternative proposals which are vague, or immature can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision.*

4.1.60 In the context of VE, the 'do nothing' option would comprise not proceeding with the project. This would remove any possibility of harm to National Sites. However, the need for the project, and its core objectives would not be met.

4.1.61 The 'do nothing' option can be immediately discounted as it would not meet any of the core project objectives for VE and would (at best) ignore and (at worst) hinder efforts to respond the clear and urgent need for offshore wind deployment at scale, before 2030, to help the UK to meet its legally binding net zero by 2050 commitment to mitigate the effects of climate change.

4.1.62 To do nothing is not a realistic option when having regard to the raft of government policy: NPS EN-1 (DESNZ, 2023a) and EN-3 (DESNZ, 2023b), the net zero by 2050 commitment (DESNZ, 2022), and the UK government's commitment to deliver 50 GW of offshore wind by 2030, as set out in the UK governments British Energy Security Strategy (UK Government, 2022). There is an imperative need for renewable energy schemes and for offshore wind in particular.

4.1.63 Given the need to tackle pressing climate change, a "do nothing" approach is inappropriate. It is not compatible with a climate emergency to wait and see if the development of other potential future offshore wind projects means VE is not required. Any suggestion that other (yet to be identified) projects could make up for the loss of VE fundamentally misunderstands the scale of the task in hand and the long lead-time for offshore wind development.

4.1.64 If VE is abandoned, a relatively low cost and low risk project with the scope to provide a significant capacity of clean, renewable energy before 2030 would be lost.

CURRENT OFFSHORE WIND APPLICATIONS

4.1.65 In the UK, there are currently 14.7 GW of built and operational OWFs (Table 4.1). A further 21.18GW is committed (either currently under construction or have government support on offer (i.e. CfD, DCO consent). A further minimum of 30.72GW of offshore wind projects have been announced with the anticipation of them being completed in time for the 2030 50 GW target (this includes VE). Should all projects go ahead this will mean there will be a total of 66.55 GW of offshore wind energy production by the end of 2030.

4.1.66 However, it should be noted that some OWF projects could be subject to lengthened timescales from planning through to construction associated with the development process, may end up being withdrawn, or fail to gain DCO consent, so run the risk of not becoming fully operational by 2030. Attrition may also be expected in line with previous rounds whereby 78% of awarded sites have become operational in Round 1 and 87% for Round 2, for England and Wales. Therefore, it is possible that there may be further reduction in capacity of some projects once in operation by 2030.

4.1.67 With consideration of the above risk, and that only 35.83 GW has been fully consented or is operational, VE is a necessary project to ensure the UK meets its target of 50GW by 2030.

4.1.68 Furthermore, the majority of other current OWF proposals are likely to have the same or greater effects on National Sites as VE.

4.1.69 This demonstrates that not only would VE be critical to help the UK meet its 2030 targets but will play a larger role in post-2030 targets of reaching net zero by 2050, owing to potential attrition and lengthened timescales beyond 2030, with a number of projects being due for decommissioning prior to the 2050 target date.

Table 4.1: Status of UK offshore wind farms

Project status	Number of projects	Capacity (GW)
Operational	40	14.65
Under construction	9	8.84
Consented	10	12.34
In planning	13	14.12
Pre-planning	9	16.6
Pre-Planning (post 2030 delivery)	15	16.46

FUTURE OFFSHORE WIND APPLICATIONS

4.1.70 Any resulting projects from future offshore wind applications are considered discounted at this time as any “potential” windfarm that is not yet in the formal planning system is not considered a feasible alternative solution as it is extremely unlikely any of these would be generating power by 2030. In recognition of this, future leasing rounds were discounted by the SoS in consideration of alternatives for previous OWF decisions, e.g., Hornsea Three (BEIS, 2020a) and Hornsea Four (DESNZ, 2023).

4.1.71 The urgent need to mitigate climate change and the consequent demand for deployment of offshore wind, at scale, by 2030, means that waiting to see how future proposals might progress is not an option.

4.1.72 TCE has calculated indicative timeframes for offshore wind based on its experience of previous offshore wind leasing rounds as shown in Figure 4.1 below (TCE, 2018). Given the leasing (and follow-on consenting) timescales there is only a very small possibility for the generating capacity (of at least 100 MW) of VE to be fulfilled by another UK project in future rounds by 2030. The scale of the UK targets for offshore wind, the short timescales to meet 2030 targets and prevalence of offshore environmental and technical constraints, mean that lost capacity cannot be expected to be offset or replaced by other future leasing rounds even in the most optimistic of outlooks.

Figure 4.1: Indicative time frames for delivering new OWF Projects (TCE, 2018).

SUMMARY – DO NOTHING

4.1.73 The do-nothing scenario would result in an estimated loss of at least 100 MW[2] of clean energy and would further decrease the chances of the UK meeting its target of 50 GW by 2030, as the combined generating capacity of existing and planned OWFs falls significantly short of this target by 2030.

4.1.74 The 2020s is the decade to develop many projects which have potential to deliver decarbonisation in the 2030s and beyond. It is also the decade in which to deliver those low and no regrets projects which are critical to reducing carbon emissions as early as possible. This will avoid the additional burden caused by late delivery of such projects, on the development pipeline for the 2030s and beyond.

[2] Noting The Crown Estate is exploring the potential for capacity increases for projects including VE, see The Crown Estate sets out plan to unlock enough new offshore wind capacity to power up to four million homes | The Crown Estate

4.1.75 Consenting VE is consistent with this approach. The urgent need to mitigate climate change and the consequent demand for deployment of offshore wind, at scale, by 2030, means that doing nothing and waiting to see how future proposals might progress is not an option.

4.1.76 If VE is abandoned, a relatively low cost and low risk project with the scope to provide a large generational capacity producing clean and renewable energy estimated capacity of at least 100 MW before 2030 would be lost. The Defra (2021a) compensatory measures guidance[3] acknowledges that doing nothing would rarely be a true alternative:

"It is unlikely in most cases that the 'do nothing' option (i.e. no proposed activity) would be an acceptable alternative as it would not deliver the same overall objective as 'the activity'. However, it is useful to provide a comparison for other alternatives and to act as a baseline against which public benefits can be assessed. Where it is most likely to be an option is where no or limited tangible public benefit can be demonstrated."

4.1.77 The alternative of not developing an offshore wind farm would not satisfy any of the project objectives and would not comply with precedents set by other recent offshore wind farm decisions (Hornsea Project Three, Hornsea Project Four, Norfolk Boreas, Norfolk Vanguard, East Anglia ONE North and East Anglia TWO). The "do nothing" scenario is therefore not considered further.

ALTERNATIVE LOCATIONS FOR OFFSHORE WIND FARM PROJECTS

4.1.78 An assessment of alternative offshore wind farm locations is provided in the following sections. This includes:

- Locations outside of the UK EEZ;
- Other locations within the UK EEZ, including:
  - Repowering existing windfarms;
  - Scotwind leasing;
  - Round 3; and
  - Round 4.

4.1.79 The section also includes consideration of feasible design alternatives for VE, as presented in Volume 6, Part 1, Chapter 4: Site Selection and Alternative which sets out the alternative designs that have been considered to reach the design of the final scheme for application.

ALTERNATIVE ARRAY LOCATIONS NOT IN THE UK EXCLUSIVE ECONOMIC ZONE (EEZ)

[3] To be revised following Defra's current (March 2024) consultation on updated assessment guidance ('Policies for MPA Assessment Guidance').

4.1.80 Alternative sites for OWFs outside the UK would not meet any of the core project objectives for VE, primarily because they would provide no contribution to the identified UK need.

4.1.81 The UK is party to international treaties and conventions in relation to climate change and renewable energy.

4.1.82 This includes a legally binding requirement to reach net zero emissions by 2050, and its commitment under the Paris agreement to a plan – called a nationally determined contribution, or NDC, to cut emissions by 68% by 2030, compared with 1990 levels. Other international and EU countries similarly have their own (different) binding targets.

4.1.83 As such, sites outside the UK cannot count towards the need identified by UK policy. Conversely, sites outside the UK are required for other countries to achieve their own respective targets in respect of climate change and renewable energy.

4.1.84 It is therefore self-evident that locations outside the UK cannot be an alternative solution to VE. This concurs with the Hornsea Three decision (BEIS, 2020a), where the SoS confirmed that *"it does not consider offshore wind farm projects that are located outside UK territorial waters as being an alternative to the Project [Hornsea Three] since this would not meet the objective to support the decarbonisation of the UK electricity supply and UK commitments on offshore wind generation".*

4.1.85 The same approach conclusion was drawn in the Hornsea Four decision (DESNZ, 2023).

4.1.86 This option is therefore not considered further.

ALTERNATIVE UK EEZ LOCATIONS

4.1.87 Offshore wind development(s) located in alternative UK EEZ locations can be discounted on one or more of the following grounds:

- such development would not meet core project Objectives 1, 2, 3 or 4 (see The Core Objectives of VE, paragraphs 4.1.6 and 4.1.8);
- such development is not feasible (for the Applicant);
- such development is complimentary (not an alternative) to VE given the scale and urgency of the need;
- such development may have similar adverse effects on European site(s); and
- even if it is assumed that such development could have lesser effects on European site(s), the strength and urgency of the IROPI case demands implementation of VE in addition to or in preference.

4.1.88 In his determination of Hornsea Project Three, the SoS considered Alternatives to the development and determined that for the reasons set out in the HRA, which are replicated above for VE, that no Alternative Solutions are available with respect to alternative wind farm projects both within and out-with the UK EEZ.

4.1.89 TCE own and/or hold the exclusive rights to manage the leasing of seabed for offshore wind development within UK territorial waters and the UK EEZ, with seabed made available for offshore wind development selectively, in successive offshore leasing rounds, usually several years apart. Alternative UK EEZ locations cannot be Alternative Solutions for the reasons set out in the sections below.

REPOWERING EXISTING WINDFARMS

4.1.90 Most operational wind farms to date typically have a life span of 20 to 25 years before decommissioning is planned and these assets will not reach their decommissioning stage for another decade. The timeframes involved for the decisions on repowering therefore do not meet project Objective No. 4 in *'delivering a significant volume of (UK) offshore wind in the 2020s'*. Furthermore, due to rapid technological advances in the size of turbines (increase rotor diameter from 120m (3.6MW) in 2013 to 260m (12MW) in 2021), it is highly unlikely that pairing foundations designed for smaller capacity turbines with larger turbines would be feasible due to fundamental engineering constraints. Newly designed and built windfarms are likely to present the only means of repowering, requiring new consent.

SCOTWIND LEASING

4.1.91 In June 2020, The Crown Estate Scotland launched the Scotwind leasing round to grant property rights for seabed in Scottish water for new commercial scale offshore wind projects. The closing date for applications was 16 July 2021. In October 2020, the final Sectoral Marine Plan for Offshore Wind Energy ("the Plan") and Offshore Wind Policy Statement (OWPS) was published. The Plan, which was published by Marine Scotland, sets out the most suitable sustainable locations for the future development of commercial offshore wind energy. The Plan provides the strategically planned spatial footprint for offshore wind development in Scotland and identifies 15 Plan Options ("POs"), split across 4 regions which are capable of generating several GW of renewable energy.

4.1.92 Following evaluation of the bids, option agreements were offered to the successful parties in January 2022 and confirmed as signed in April 2022.

4.1.93 The ScotWind Leasing clearing process opened in April 2022 with Option Agreements being offered in August 2022 and confirmed as signed in November 2022.

4.1.94 Up to 30.6 GW of new generating capacity could be built over the next decade as a result. However, it is highly likely that significantly less of this capacity will be available before 2030 (TCE 2023) with the current projects stating that up to 14.4 GW has the aim of being in place by 2030.

4.1.95 It is envisaged that all of this generating capacity will be required, in addition to VE, to reach the UK Governments ambitious renewable energy generation and carbon reduction targets.

4.1.96 It should be also noted that ScotWind projects do not necessarily represent alternatives with less damaging ecological impacts and that a project level HRA will be required of each project in due course.

4.1.97 Therefore, for the reasons set out above, ScotWind projects are not considered a feasible alternative solution for VE.

ROUND 3

4.1.98 The identification of Round 3 Zones was the output of a robust Government and TCE spatial planning process involving Strategic Environmental Appraisals (SEA) to identify / indicate relative levels of constraint and opportunity, and an AA by TCE of its plan to award the nine Zone Development Agreement (ZDAs).

4.1.99 Out of the nine zones identified during the TCE Round 3 process, only six zones were taken through to successfully deliver projects, including East Anglia ONE North, East Anglia TWO, Norfolk Vanguard, Norfolk Boreas and Hornsea Four. However, the consenting of Round 3 OWFs does not lessen the scale or urgency of the need for further large-scale offshore wind projects. To meet the 2030 Sector Deal (BEIS, 2019), the majority, if not all, of the ScotWind projects, the capacity proposed to be delivered under the TCE Extensions Round, and the Round 4 projects, are also likely to be required. Further, most of these projects are likely to have the same or greater adverse effects on European sites as VE. These are not, therefore, considered to be Alternative Solutions.

ROUND 4

4.1.100 Round 4 projects may be generating power before 2030. Regardless of timescales, they are still needed in addition to, not instead of VE to meet the 50GW target.

4.1.101 For LBBG, given the foraging ranges of the species, any comparable large-scale offshore wind proposal located within this foraging range is likely to give rise to an increased level of impact on AOE SPA (alone or in-combination).

4.1.102 In terms of kittiwake, given the mobile nature and large foraging ranges of these species, any comparable large-scale offshore wind proposal located within this foraging range is highly likely to give rise to a significantly increased level of impact on FFC SPA (alone or in-combination).

4.1.0 This is further confirmed through the Round 4 projects plan level HRA (TCE, 2021) which has concluded an AEoI of FFC SPA (Kittiwake feature). Therefore, each Round 4 project, which is subject to a project level HRA, is highly likely to have the same or worse effect in relation to this site and feature. In other words, the notion that unidentified and unconstrained areas exist to deliver the scale of development required, without effects on the integrity of the FFC SPA is improbable.

4.1.1 For guillemot and razorbill any comparable large-scale offshore wind proposal located within this foraging range is likely to give rise to an increased level of impact on FFC SPA (alone or in-combination).

4.1.2 Furthermore, given the number and spread of European sites around the UK, any large-scale offshore wind proposal is likely to affect one or more European sites - as illustrated through the constraint mapping and regional characterisation reports published in connection with Leasing Round 4 (TCE, 2023).

4.1.3 For sandbank features, given the small area in the Margate and Long Sands SAC that could be affected by the offshore ECC, plus the relative abundance of the sandbank feature within the site and southern North Sea as a whole, it is unlikely to give rise to a significantly increased level of impact to this site.

4.1.4 On this basis VE presents an opportunity to deliver a substantial renewable energy generating project that, even in the event of an AEoI, will only have a minimal effect, which is comparatively rare.

CONSIDERATION OF SCALE AND DESIGN ALTERNATIVES FOR VE

4.1.5 The consideration of environmental parameters and other constraints has been a central theme of the VE site selection and design. The site selection and design assessments have been supported by detailed consideration of the findings of the original Greater Gabbard and Galloper project EIAs and Examination processes, together with the knowledge and understanding gained through the post-consent and construction phases of these (adjacently located) projects. All of these have provided additional insight and understanding of the relevant environmental sensitivities and the range of other constraints applicable for VE.

4.1.6 VE has adopted various mitigation commitments (including primary design principles inherent as part of VE, installation techniques and engineering designs/modifications) as part of their pre- application phase, to eliminate and/or reduce the LSE arising from any potential impacts (as far as possible). These are outlined in full in the Schedule of Mitigation – Routemap (Volume 9, Report 31).

4.1.7 Consideration has been given to feasible alternatives throughout the development process for VE. This has formed a fundamental driver for decision making within the project. The Applicant has continued to re-appraise all elements of the maximum development scenario (MDS) for VE (see Volume 6, Part 2, Chapter 1: Offshore Project Description), to ensure that feasible and practical mitigation has been deployed, where deemed appropriate to do so (to eliminate or reduce likely significant effects (LSE), in EIA terms).

4.1.8 Volume 6, Part 1, Chapter 4: Site Selection and Alternatives outlines the site selection process for VE including a comparison of alternatives considered and the reasons for selecting the final MDS.

4.1.9 Consultation was a key part of this process, informing all stages, and has helped to refine the project through wider spatial, design and process considerations discussed in broader forums, both formally through Evidence Plan meetings, or more informally through the feedback received through public consultation.

4.1.10 The Applicant has closely followed the pre-application consultation process, as required under the Planning Act 2008, and set out in 'Planning Act 2008: guidance on the pre-application process for major infrastructure projects' (UK Government, 2015).

4.1.11 Prior to consultation with stakeholders, consideration was given to several technical, commercial, and environmental consenting constraints, informed by data analysis and constraints mapping.

4.1.12 Through the process of consultation and environmental assessment reduction of wind farm array areas and design changes have been considered with adverse effects of relevant species and sites forming part of this process. The feasibility of relevant alternative solutions that could be considered to reduce the relevant impacts are set out in the paragraphs below.

SMALLER WIND FARM SITE

4.1.13 The initial definition of the site boundary or the leasing round was informed by a range of factors including the requirements stipulated by TCE, the presence of sea use activities, bathymetry, ground conditions and presence of protected sites and species. Since the initial boundary was defined, ongoing engagement and environmental assessment has informed a reduction in the northern array boundary. Full details of the how the array boundary has been refined are provided in Chapter 4: Site Selection and Alternatives.

4.1.14 The key driver of the reduction of the (northern) array boundary is a constrained hot spot of shipping and navigation activity in the original north eastern area of the northern array boundary. The ornithology aerial surveys do not indicate any specific hotspot for bird activity in either of the array area, similarly no hot spots for marine mammals or sensitive protected benthic features.

4.1.15 Therefore, the reduction of the northern array boundary (an effective 22 % reduction for the northern array boundary and a 16% reduction for the combined array boundary overall) has also had a general positive impact with regards to constraining the spatial area over which impacts upon birds could manifest.

4.1.16 Clearly, any reduction in the array areas limits the potential generating capacity of the site, which impacts the financial feasibility of the site and limits the opportunity for the site to contribute to the UK Government's offshore wind and decarbonisation targets and VE's project objectives. In addition, the wake loss effect considerations within the VE array and with the existing Galloper Project and other constraints such as ground conditions and compliance with layout requirements set out in the Maritime and Coastguard Agency's Guidance Note 654 (MGN654), reduce the opportunity to increase the density of turbines to reduce the size of the array.

4.1.17 Further reduction of the array areas is not considered to be financially or technically feasible, nor is it likely to be significantly less damaging. Therefore, further reduction of the array area is not considered to be an acceptable alternative solution.

FEWER TURBINES

4.1.18 The project design envelope includes a range of turbine scales to accommodate the ongoing rapid development in wind turbine technology and provide a future proof design envelope. The maximum number of turbines is associated with lower capacity. The number of turbines specified allows the capacity the site can generate to be optimised.

4.1.19 Fewer turbines, resulting in a lower capacity would limit the ability of the Project to contribute to the 2030 targets, it is likely that most of the capacity currently in planning will be required to achieve the 50GW target. This alternative scale is therefore not considered further.

NUMBER AND LOCATION OF EXPORT CABLES

4.1.20 The export cable corridor routing sought to avoid all designated sites, particularly those designated for benthic habitats. However, during consultation with shipping and navigational stakeholders it was noted that routing the offshore cable to the north of M&LS SAC risked compromising navigational safety.

4.1.21 Consequently, the offshore export cable corridor overlaps with the M&LS SAC at the northern periphery. This overlap has been necessary to maintain a buffer distance from a pilotage area to the north. Alternative routes were considered (as set out in Volume 6, Part 1, Chapter 4: Site selection and alternatives) but were deemed not feasible for various reasons. However, taking into account feedback from Natural England and other stakeholders, through detailed engineering assessment and optimisation, it has been possible to reduce the number of export cables to be installed from four to two which reduces the duration and footprint of works by ~50% from that assessed at the PEIR stage. Further mitigation measures within this area are also set out in Volume 9, Report 13: Margate and Long Sands SAC Benthic Mitigation Plan.

4.1.22 Further reduction in the number of cables would result in the project objectives not being met. Therefore, it is not a feasible alternative to adapt the cable route to avoid the SAC or further reduce the number of cables and associated footprint of impact.

4.1.23 The Applicant has assessed the potential adverse effects on European Site features alongside other project challenges and has presented a MDS which incorporates avoidance and mitigation measures for potential effects on all sensitive receptors; and it is considered that any further design refinement is likely to reduce the benefit without any material improvement. Therefore, further design changes are not considered a feasible alternative solution for VE.

OFFSHORE TRANSITION NETWORK REVIEW

4.1.24 The Applicant is currently engaged in the government-led Offshore Transmission Network Review (OTNR) process which is running alongside the development of the project. Under this process VE is part of a scheme to investigate the feasibility of coordinated offshore grid connection and is working with DESNZ and the SeaLink and North Falls projects. Further details of this process are provided in Volume 9, Report 29: Offshore Connection Scenario.

4.1.25 The current project design (which is subject to this DCO application) includes an offshore ECC to shore to facilitate power export from the array areas to the national electricity grid. Under the OTNR option, if it proceeds, the onshore connection would not be required.

4.1.26 Despite the potential of the OTNR, scenarios explored as part of the government led OTNR process sit outside of the VE ES and the DCO application, as there is currently no certainty that this option is viable.

4.1.27 An offshore connection will not be feasible until the OTNR process is complete, and it may not conclude that an offshore connection is a feasible option for VE.

4.1.28 Should an offshore connection (via the SeaLink project) become a feasible option for VE it should be noted that whilst the current Sealink avoids the M&LS SAC it does cross several other designated sites as set out in the SeaLink Preliminary Environmental Information Report (PEIR)[4].

[4] Sea Link Project | Document library | National Grid ET

4.1.29 For the reasons set out above, the OTNR option is not considered a feasible alternative for VE.

INCREASED AIR GAP

4.1.30 The minimum air gap (clearance between the rotor blades and sea surface) requirements are set by MGN 654 where a 22 m minimal air gap is mandated for safe navigation. Early engagement with Natural England indicated that increased air gap should be considered as it avoids peak sensitive bird densities and reduces collision impacts.

4.1.31 Having regard to this, the project has sought to increase the air gap, however in the case of the VE project options and certainty are constrained by the water depths (up to 55m deep) at the site and resulting concerns with regards to feasible foundation design. In addition to collision risk considerations, impacts on seascape, landscape and visuals have been raised as a significant concern by various stakeholders including Natural England and Suffolk Coast and Heaths AONB which has driven the project to look at commitments to curtail turbine heights.

4.1.32 The 28m clearance has been driven by the balance of collision risk, engineering and SLVIA considerations. SLVIA concerns and engineering matters mean that the ability to further increase the air gap above 28m is not currently feasible. Therefore, it is not a feasible alternative to increase the airgap beyond 28m.

SMALLER ROTORS/ SWEPT AREA

4.1.33 Smaller rotors for the same number of turbines would result in a lower capacity project which would limit the ability of VE to contribute to the 2030 targets and it is likely that the majority of capacity currently in planning will be required to achieve the 50GW target.

4.1.34 Smaller rotors to achieve the same offshore wind farm capacity would require a greater number of turbines which would increase the magnitude of potential effects on ornithology receptors and would potentially require an increased wind farm site area. This alternative is therefore not considered further.

STEP 4 - ASSESSMENT AND COMPARISON OF THE IMPACT OF ANY FEASIBLE ALTERNATIVE SOLUTIONS ON EUROPEAN SITES (NATIONAL SITE NETWORK)

4.1.35 Step 4 would involve an assessment and comparative analysis of the relevant impacts of any identified feasible alternatives in respect of European sites comprised in the National Site Network. However, as the previous Steps (1 – 3) demonstrate, there are no feasible alternatives to VE at other sites or to the final design and area for VE, this Step is therefore not required.

SUMMARY AND OVERALL CONCLUSIONS ON ALTERNATIVE SOLUTIONS

4.1.36 The purpose of this section has been to demonstrate objectively to the SoS that there are no feasible Alternative Solutions to VE.

4.1.37 The sections above summarise the iterative and comprehensive design and mitigation process including a range of potential alternatives discounted by the Applicant during pre-application prior to determining the final design and maximum area for development for VE.

4.1.38 The consideration of Alternative Solutions must be approached on a reasonable basis, with reference to the genuine project objectives designed to serve the identified need. Each stage/ step must be grounded in real world considerations of feasibility (legally, technically, and commercially). With that in mind, the Applicant has undertaken a comprehensive analysis of potential alternative options which is considered sufficient to enable the SoS to be objectively satisfied as to the absence of any feasible Alternative Solutions to VE.

4.1.39 In this context it is relevant and reasonable for the SoS to have regard to and place weight on the experience and expertise of the Applicant in offshore wind development. RWE has pioneered UK offshore wind energy over two decades, having installed the first offshore turbines at Blyth in 2000, and commissioned the UK's first commercial-scale offshore wind farm, North Hoyle, in 2004. RWE owns and/or operates 10 offshore wind farms with a total installed capacity of 3.86GW. With six projects already in development and plans to establish commercial scale floating wind in the UK, RWE has one of the largest offshore wind pipelines in the UK.

4.1.40 The final design and maximum area for development for VE is informed by expert judgement and market leading expertise, with current knowledge of the realities and challenges of construction in the marine environment. The Applicant believes that the experience RWE holds in offshore wind delivery should give the SoS confidence that the Applicant has considered all feasible options to avoid or reduce harm to European Sites whilst ensuring a viable and deliverable project.

5 IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)

5.1 INTRODUCTION

5.1.1 The HRA Derogation Provisions provide that a project having an AEoI on a European Site may proceed (subject to a positive conclusion on alternatives and provision of any necessary compensation) if the project must be carried out for IROPI that justify the project despite the environmental damage it may cause.

5.1.2 Section 5 of the without prejudice derogation case is provided to demonstrate that the SoS can be satisfied that there are IROPI for VE, should the SoS conclude AEoI in respect of any European Sites.

5.1.3 This section of the document sets out a compelling case that VE must be carried out for IROPI in view of its social and economic benefits, which align with (and are needed to achieve) UK government policy aspirations and legal commitments.

5.1.4 The case submitted demonstrates that VE can substantially contribute to the UK's legally binding climate change targets by helping to decarbonise the UK's energy supply, whilst also contributing to the essential tasks of ensuring security of supply and providing low-cost energy for consumers in line with the UK government's national policies. VE will also provide substantial employment opportunities and skills development, particularly in coastal communities, whilst also playing a major role in supporting the UK's supply chain.

5.2 CONTENT AND STRUCTURE

5.2.1 The IROPI information in this section of the report is structured as follows:

- Section 5.3
  - Consideration of the Scope of the IROPI;
  - Imperative: it must be essential (whether urgent or otherwise), weighed in the context of the other elements below, that the plan or project proceeds;
  - Public interest: a public benefit must be delivered rather than a solely private interest;
  - Long-term interest: European Commission guidance states that it is reasonable to assume that the interest can only be overriding if it is a "long-term interest"; and
  - Overriding: the interest served by the plan or project outweighs the harm (or risk of harm) to the integrity of the site as identified in the appropriate assessment.
- Section 5.4
  - The final conclusion that there are IROPI to support VE.

5.3 THE VE IROPI CASE

THE SCOPE OF IROPI

5.3.1 The HRA Derogation Provisions identify certain in-principle grounds of IROPI that may be advanced in favour of a project, although these are not exhaustive and other IROPI grounds may be relied upon. There are restrictions on IROPI grounds for impacts to priority habitat or species unless the matter is subject to a further opinion.

5.3.2 In terms of the species and habitats covered in this derogation case for VE, none of these are listed as 'priority' on the relevant site's conservation objectives and, on this basis, a further opinion from Defra is not necessary.

5.3.3 Therefore, the IROPI which can be considered for VE are unconstrained, and can include:

- The core IROPI of human health, public safety and beneficial consequences of primary importance for the environment;
- IROPI of a social or economic nature; and
- Any other IROPI.

5.3.4 The parameters of IROPI are explored in Defra 2012 and MN 2000 (European Commission, 2018), which identify the following principles:

5.3.5 **Imperative – urgency and importance**: There would usually be urgency to the objective(s) and it must be considered "indispensable" or "essential" (i.e. imperative). In practical terms, this can be evidenced where the objective falls within a framework for one or more of the following:

- actions or policies aiming to protect fundamental values for citizens' life (health, safety, environment);
- fundamental policies for the State and the Society; or
- activities of an economic or social nature, fulfilling specific obligations of public service.

5.3.6 **Public interest**: The interest must be a public rather than a solely private interest (although a private interest can coincide with delivery of a public objective).

5.3.7 **Long-term:** The interest would generally be long-term; short-term interests are unlikely to be regarded as overriding because the conservation objectives of the Habitats and Birds Directives are long term interests.

5.3.8 **Overriding**: The public interest of development must be greater than the public interest of conservation of the relevant European site(s).

5.3.9 The parameters of IROPI are further established in the context of the precedent setting decision on Hornsea Three (BEIS, 2020a) and subsequent projects, for which the SoS was satisfied there are IROPI for the Development to proceed (subject to adequate compensatory measures (paragraph 6.35). Further, in terms of IROPI, paragraph 4.2.21 of EN-1 states that "*the Secretary of State will consider the particular circumstances of any plan or project, but starting from the position that energy security and decarbonising the power sector to combat climate change…"*

…"are capable of amounting to imperative reasons of overriding public interest (IROPI) for HRAs, and, for MCZ assessments, the benefit to the public is capable of outweighing the risk of environmental damage, for CNP Infrastructure."

IMPERATIVE REASONS

5.3.10 The impacts of climate change are global in scope and unprecedented in human existence. The science linking the concentration of greenhouse gas emissions to average global temperature on earth is unequivocal. The climate stability that has enabled humans to prosper is now at risk. This has been highlighted by the Sixth Assessment Report published recently by the Intergovernmental Panel on Climate Change (IPCC, 2023). This report highlighted amongst other things that it is unequivocal that human influence has warmed the atmosphere, ocean and land and that widespread changes in the atmosphere, ocean, cryosphere, and biosphere have occurred.

5.3.11 The direct and indirect consequences of climate change, which include extreme weather events (flooding, heat waves and droughts), species extinctions and ecosystems collapse all threaten the health, safety, and environment of global citizens. For example, by hindering food production, water resources and putting lives and settlements at risk.

5.3.12 The UK government recognises that people are already experiencing some impacts and that those impacts will become more severe and widespread as global temperatures rise. The measure of the impacts that citizens experience depends upon how successfully greenhouse gas emissions can be reduced. The IPCC has stressed that global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO_2)and other greenhouse gas emissions occur in the coming decades.

5.3.13 With the potential to generate an estimated capacity of at least 100 MW, VE will deliver a substantial, near-term contribution to GB decarbonisation objectives and security of supply and will significantly help to reduce the UK's greenhouse gas emissions, by offsetting millions of tonnes of CO_2 emissions per annum.

5.3.14 In the Hornsea Three and Hornsea Four decisions, the SoS determined that the consequences of not contributing to the objective of limiting the extent of climate change would be *"severely deleterious to societies across the globe, including the UK, to human health, to social and economic interests and to the environment"* (paragraph 6.37).

5.3.15 This closely reflects the primary case for IROPI, as provided through core objectives in the HRA of the updated Energy NPS (EN-3, November 2023); which is predicated by the principle and essential need for the NPSs in providing a framework for delivering the UK's international commitments on climate change in accordance with the objectives of the Paris Agreement. The consequences of not achieving those objectives would be severely deleterious to societies across the globe, including the UK, to human health, to social and economic interests and to the environment.

THE UK CONTEXT

5.3.16 The UK has demonstrated global leadership on climate change. It has in place a comprehensive set of measures to reduce greenhouse gas emissions through investment in renewables. Recent enhancements of UK government policy and legislation to tackle climate change provide unequivocal evidence that the objectives of VE fall within a framework of fundamental policies for the state (and the society it serves).

5.3.17 In July 2019, the UK became the first major economy to legally commit to reducing its greenhouse gas emissions to net zero by 2050. In their 2019 Report (CCC, 2019), the UK's CCC advise that consistently strong deployment of low-carbon generation in the lead up to 2050 will be required to meet net zero, including *"…at least 75GW of offshore wind."* In the most recent CCC report (CCC, 2022), the CCC emphasise that in order to achieve Net Zero there is a required *"a rapid scale up in low carbon investment…and speed up the delivery which will need to accelerate even where ambition is broadly on track. For example, although the Government's 2030 target for offshore wind is in line with the CCC pathway, a minimum of 4GW of additional offshore wind capacity will be needed each year from the mid-2020s onwards, significantly greater than the current 2GW per year".*

5.3.18 The adoption of a net zero by 2050 commitment requires a substantial reduction in the carbon emissions from transport and heat. This in turn is expected to create a substantial additional demand for low-carbon electricity in the 2030s and 2040s. This additional demand places a new urgency on the development of new and additional sources of low-carbon electricity that must be established in the 2020s to meet the UK government's carbon budgets out to 2050.

5.3.19 Again, this closely aligns with the Energy NPS HRA which states that the key objectives of the Energy NPS suite are for the energy system to ensure supply of energy always remains secure, reliable, affordable, and consistent with meeting our target to cut greenhouse gas emissions to net zero by 2050.

5.3.20 Through the British Energy Security Strategy (BESS) the UK government has pledged to install 50 GW of offshore wind capacity by 2030, up from the previous target of 40 GW (BEIS, 2022d). This pledge represents a five times increase of the UK's installed offshore wind capacity within the next decade and reflects Government's aim to accelerate its journey in order to deliver net zero greenhouse gas emissions. As illustrated in Figure 4.1, the development of large-scale offshore wind farms typically takes more than eight years. Projects that are not consented, in planning or well-advanced are unlikely to contribute by 2030.

5.3.21 Without the contribution from VE, it is very possible that delivery of the Sector Deal (BEIS, 2019) and the UK government's 2030 ambition would fall short. Offshore wind is recognised as being an important technology for low-carbon generation and the urgent need for large capacities of low-carbon generation is clear to avoid compromising security of electricity supply. Specifically, VE will be a necessary part of the future generation mix, and as such will make a valuable contribution in the direction of adopted UK government policy and achievement of decarbonisation commitments.

5.3.22 In the Hornsea Three Decision (BEIS 2020a), the SoS references the UK's international commitments on climate change to define the principal and essential benefit of the project. These are delivered through the Climate Change Act 2008 (as amended), the National Policy Statements (NPS) for energy (EN-1), renewable energy infrastructure (EN-3) and electricity networks (EN-5).

5.3.23 Furthermore, these NPSs place greater emphasis on OWFs, as these are considered critical national infrastructure.

THE CLEAR AND URGENT NEED FOR VE

5.3.24 The fundamental importance of and need to urgently deliver VE is therefore clear and demonstrable. It flows from the important and urgent requirement to deliver significant volumes of renewable energy generating capacity to meet the UK's legally binding net zero by 2050 commitment in response to the latest climate science and, in turn, from the size of the contribution expected from offshore wind, as confirmed by the government's commitment of 50 GW of offshore wind by 2030.

5.3.25 The need for significant quantities of offshore wind is already well-established in the relevant National Policy Statements (NPS) (EN-1 and EN-3) which pre-date the more recent commitments. Since the NPSs were first published in 2011 there have been significant developments to UK energy and climate policy. Recent enhancements of existing UK government policy on climate change and the development of offshore wind (not referenced above) include:

- The Energy White Paper Powering our Net Zero Future (BEIS, 2020c) presented to Parliament by the SoS in December 2020 that set out measures to support the development of offshore wind. These include funding for manufacturing infrastructure and the Offshore Renewable Energy Catapult project to serve as a leading testing facility for the development of technologies;
- The reaffirming of the 40 GW by 2030 ambition on 18 November 2020 by the Government's 'Ten Point Plan for a Green Industrial Revolution (BEIS 2020b); and
- The British Energy Security Strategy (BEIS, 2022d), which sets an even more ambitious target of 50 GW by 2030 – as confirmed in the Planning Statement EN-1.

5.3.26 The energy industry has also continued to evolve with the cost of many key technologies falling significantly, which the CCC note is an indication of *"…major changes to what is possible…".* There is now an even greater urgency for offshore wind generation, particularly large projects like VE which are deliverable in the late-2020s, given announcements made in 2019 relating to nuclear deployment in the UK. Offshore wind is now one of the lowest cost forms of energy and one that can be deployed at scale within relatively short timeframes. It is essential to meet the government's decarbonisation, security of supply and affordability policies.

5.3.27 Paragraph 3.3.20 of NPS EN-1 states *"Wind and solar are the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply (as they are not reliant on fuel for generation). Our analysis shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar."*

5.3.28 As explained in Section 4, the deployment of offshore wind, and specifically VE, is needed to make a significant contribution to the following UK Government's national policy aims of decarbonisation:

- Net-zero and the importance of deploying zero-carbon generation assets at scale;
- Security of supply (geographically and technologically diverse supplies); and
- Affordability.

5.3.29 Wind generation is economically and technically preferential, to the GB electricity consumer for the following reasons:

- Decarbonisation is a UK legal requirement and is of global significance. It cannot be allowed to fail, and urgent actions are required in the UK and abroad, to keep decarbonisation on track to limit global warming;
- Wind generation is an essential element of the delivery plan for the urgent decarbonisation of the GB electricity sector. This is important not only to reduce power-related emissions, but also to provide a timely next-step contribution to a future generation portfolio which is capable of supporting the decarbonisation of transport and heat sectors, through electrification;
- As part of a diverse generation mix, wind generation contributes to improve the stability of capacity utilisations among renewable generators. By being connected at the transmission system level, large-scale offshore wind generation can and will play an important role in the resilience of the GB electricity system from an adequacy and system operation perspective;
- Internationally, and importantly, GB is leading in this regard, offshore wind generation assets are becoming bigger and cheaper, each subsequent project providing a real-life demonstration that size and scale works for new offshore wind and providing benefits to consumers in the process. Other conventional low-carbon generation (e.g., tidal, nuclear or conventional carbon with CCUS) remain important contributors to achieving the 2050 Net-Zero obligation, but their contributions in the important 2020s is likely to be low;
- Offshore wind is already highly competitive against other forms of conventional and low-carbon generation, both in GB and more widely.

5.3.30 VE specifically offers the following benefits:

- The VE development proposes a substantial infrastructure asset, capable of delivering large amounts of low-carbon electricity, from as early as the late

2020s. This is in line with the CCC's recent identification of the need for urgent action to increase the pace of decarbonisation in the GB electricity sector; and

- VE's connection to the National Energy Transmission System (NETS) means that it will be required to play its part in helping National Grid Electricity System Operator (NGESO) manage the national electricity system. This includes participating in mandatory balancing markets (to help balance supply and demand on a minute-by-minute basis and provide essential ancillary services) as well as providing visibility to the GB power market of its expected generation. This means that the low marginal cost wind power it will produce, can be forecast and priced into future contracts for power delivery by all participants, thus allowing all consumers to benefit from the market-price reducing effect of low-marginal cost offshore wind generation.

5.3.31 VE can make a large, meaningful, and timely contribution to decarbonisation and security of supply, while helping lower bills for consumers throughout its operational life, thereby addressing all important aspects of the UK's legal obligations and existing and emerging UK government policy. The case for VE is urgent and important.

A CLEAR PUBLIC INTEREST

5.3.32 There is a clear public interest in VE proceeding. That flows from its ability to provide a substantial contribution in the late 2020s towards the achievement of the UK government's national policies, which demand the urgent decarbonisation, ensuring security of supply and affordability discussed above.

5.3.33 Defra (2021) advises that the NPSs and other documents setting out UK government policy (e.g., the UK Renewable Energy Roadmap, DECC, 2013) provide a context for competent authorities in considering derogation and that projects which enact or are consistent with national strategic plans or policies (e.g., such as those provided for in NPS EN-1 and EN-3) are more likely to show a high level of public interest.

5.3.34 VE is consistent with and enacts important national policy as demonstrated in the sections above.

5.3.35 It is further noted that in the determination of Hornsea Project Three (BEIS 2020a), the SoS found that the project will provide an essential public benefit (paragraph 6.36) in terms of the delivery of renewable energy.

COMBATTING CLIMATE CHANGE

5.3.36 The public interest in VE goes further than meeting legal and policy targets. VE could be instrumental in combating climate change and the threats it poses to human beings and the environment (including seabirds). The health and well-being of our species, and the future of our planet, depends on the rapid deployment of renewable resource such as VE.

5.3.37 The most recent climate change risk assessment for the UK published by the UKs CCC highlights a series of risks to the UK from climate change (CCC, 2021). 61 risks and opportunities were identified in the report and many of these risks could be combatted by the deployment of large-scale offshore wind resource such as, and including, VE.

5.3.38 Kittiwake is a species evidenced to be more sensitive to climate change than other seabirds. By way of example, climate change has been linked with an 87% decline in breeding Kittiwakes on Orkney and Shetland, and by 96% at St Kilda since 2000. This is in comparison with a predicted reduction in the annual growth population growth rate of 0.48 % due to in-combination OWF collision risk mortality (RSPB, 2017). Additionally, recent research by Marine Scotland (2021) describes the observed impact of increases in sea surface temperature on abundance of sandeel, which is a key prey species for seabird species including Kittiwake. Sadykova *et al*. (2020) predict significant spatial shifts in a number of UK predator prey relationships by 2050, including Kittiwake/sandeel, with all but one model showing significant decreases overall.

5.3.39 The adverse effects of increased sea-surface temperature are not unique to kittiwake, however. Sandeel are also a key prey species for guillemot. Like kittiwake, they also almost exclusively rely on sandeel for provisioning their young (Frederiksen *et a*l., 2013). However, there is some evidence from the Isle of May, Scotland, that guillemot have shifted their prey intake from a sole reliance on sandeel to also incorporate sprat into their diets (Harris *et al*., 2022). Due to the current aggressive rates of climate change, it is unlikely that, without climate mitigation measures, guillemot will have time to adjust their range and prey selection in a way that can counteract population-level loss (Searle *et al*., 2022).

5.3.40 Other auks, like razorbill, incorporate other prey species into their diets and are less reliant on sandeels (Searle *et al*., 2022). However, the range of this prey availability is subject to shift and shrink as ocean thermodynamics change (Searle *et al*., 2022). This can put pressure on razorbill populations as competition for resources will take place in a shrinking viable habitat.

5.3.41 Food availability for gulls, especially lesser black-backed gull will also be affected by the changing climate. A collapse in Norwegian herring stock in the 1980s left lesser black-backed gull populations at 10-20% of their peak population size (Bustnes et al., 2009). It was found that this stock collapse was caused by increased sea temperatures after a mild winter (Bustnes et al., 2009). Therefore, it can be predicted that warming sea temperatures will affect lesser black-backed gull populations who are dependent on sea temperature-sensitive prey. It must be noted, however, that gulls are prey generalists, and some sources of prey for gulls will benefit from increasing sea temperatures. Pelagic swimming crab populations in the North Sea have shown population increases due to increased sea surface temperatures (Luczak *et a*l., 2012). This increase directly correlated with an increase in key lesser black-backed gull populations who depended on this prey species during the breeding season (Luczak *et al*., 2012).

5.3.42 Gannet may also receive certain benefits from increased ocean temperatures. As this species is adapted to warmer waters, their at-sea distribution modelling predicts that gannet productivity will increase in both the summer and winter due to rising sea surface temperatures (Searle *et al*., 2022). This increase in productivity is also compounded by their varied diet, as they are not solely dependent on species like sandeel that are negatively affected by climate change (Searle *et al*., 2022). In contrast, kittiwake populations favour cooler waters, and at-sea distribution modelling predicts productivity declines for kittiwake in both the summer and winter as sea surface temperatures rise (Searle *et al*., 2022).

5.3.43 Though certain species like lesser black-backed gull and gannet may receive certain benefits from increased ocean temperatures, it is important to note that these specific benefits will not necessarily result in a net positive benefit at the population level. Lesser black-backed gull and gannets, as well as the other species mentioned above (kittiwake, guillemot, and razorbill), will also face effects of climate change that are universal across seabird species. Both adult birds and chicks will be subject to heat stress, and chicks may be subject to physiological stress due to difficulty regulating their body temperature in fluctuating temperatures (Phillips *et al*., 2023).

5.3.44 Furthermore, climate change will increase storm frequency. Increased storms and extreme weather can result in direct mortality for seabirds, but they can also result in an energetic cost if birds must work harder to fly in changing wind conditions (Searle *et al*., 2022; Phillips *et al*., 2023). Furthermore, increased storms risk nest flooding which will increase chick mortality (Phillips *et al*., 2023).

5.3.45 This research demonstrates that climate change will result in a variety of effects for different seabird species. Despite a few benefits for certain species, environmental changes due to warming temperatures will have a broad negative effect for seabirds across their different needs and life stages.

5.3.46 Habitats vulnerable to climate change that are not adversely impacted by VE will benefit from climate change mitigation which low carbon generation provides. This demonstrates that climate change mitigation including low carbon generation is an essential part of protecting the coherence of the UK SPA, Ramsar and SAC network.

SOCIO-ECONOMIC BENEFITS

5.3.47 The public interest in VE goes further still and includes substantial economic benefit to the UK and its regions. VE will provide substantial benefits to the UK economy including facilitating confidence in the UK and local supply chain, growing a skilled workforce and providing wider community benefits.

EMPLOYMENT

5.3.48 As detailed in Volume 6, Part 3, Chapter 3: Socioeconomics, Tourism and Recreation, it is anticipated that the onshore substation, onshore export cable and road widening works would be constructed over a period of 19 months in total (up to two years), supporting an average of up to 390 direct, on-site Full Time Equivalent (FTE) roles during that time, with a peak of around between 540-600 FTE jobs supported.

5.3.49 Based on these estimates it is anticipated that around 22% of this employment would be sourced from the existing labour market (the area comprising Essex and Suffolk) and around 73% would be sourced from within the UK.

5.3.50 This equates to a maximum average of 90 FTE jobs supported in the existing labour market of Essex and Suffolk during the construction period, with peaks of up to 130 FTE jobs. The remainder of the workforce is likely to move to the area on a temporary basis for short-term contracts.

5.3.51 Offshore installation and commissioning will be related to the works required for the turbine installation and commissioning, foundation installation, array cable installation, offshore export cable installation and offshore substation works. This element of activity is likely to support up to 410 FTE years of employment over the construction phase (depending on the number of turbines being installed).

5.3.52 Assuming a two-year construction phase this is likely to support an average of up to 205 FTE roles during the construction phase.

GROSS VALUE ADDED (GVA) AND SUPPLY CHAIN

5.3.53 The employment supported by the construction of VE will also contribute to the size and overall productivity of the national and local economies, ultimately supporting their recovery from the current downturn experienced as a result of the COVID-19 pandemic.

5.3.1 As set out in Volume 6, Part 3, Chapter 3: Socioeconomics, Tourism and Recreation, the assessment of the key quantitative measures of economic impact (i.e. employment and Gross Value Added (GVA) output) during the construction phase are driven by the amount of the relevant projects supply chain expenditure captured by businesses located within each study area identified.

5.3.2 GVA generated by onshore activity is related to the manufacturing of the onshore export cable and components of the onshore substation including electricals, building, access and security.

5.3.3 It is anticipated that this activity could generate around £7.4m in GVA during the manufacture of these components within the supply chain.

5.3.4 While onshore electricals are not likely to be sourced locally, there is the potential for a relatively large proportion of activity relating to the onshore substation (non-electrical) components to be sourced locally. For assessment purposes it is anticipated that around £2.2m could be supported within the local (Essex and Suffolk) supply chain and £4.6m within the national economy.

5.3.5 In terms of employment supported, this GVA would equate to around 30 FTE years of employment within the local supply chain and 60 FTE years of employment in the national supply chain.

5.3.6 GVA is also generated as a result of employment supported by the installation and commissioning of onshore infrastructure as a result of construction activity required. This is anticipated to support between £34m to £75m GVA in total (relating to the onshore cable and substation but not including the operations base in-line with assessments of direct employment above), of which around £14m to £16m would be anticipated to be retained locally and £47m to £54m retained nationally.

5.3.7 GVA generated by offshore activity is related to the manufacturing of turbine components, and balance of plant relating to the foundation, array cable, offshore export cable, cable protection, and elements of the offshore substation (predominantly electricals).

5.3.8 Depending on the number of turbines to be installed, it is anticipated that this activity could generate up to £101m in GVA during the manufacture of these components within both the regional and national supply chain.

5.3.9 In terms of employment supported, this GVA would equate to up to around 480 FTE years of employment within the national supply chain and more than 5 FTE years of employment in the local supply chain.

5.3.10 GVA is also generated as a result of employment supported by the installation and commissioning of offshore infrastructure as a result of the construction activity required. This is anticipated to support between £20m and £38m GVA in total, of which around £0.5m to £0.9m would be anticipated to be retained locally and £2.8m to £5.4m retained nationally.

PUBLIC INTEREST

5.3.11 While the Applicant is a private entity, the strategy to harness the UK's offshore wind resource to produce renewable electricity can only be delivered through the private sector. The identification and development of offshore sites for that purpose is a fundamental national policy pursued within a clear framework, which seeks to protect the environment and human health from the consequences of climate change and promote public safety.

5.3.12 Critically, it is a state-led policy. From the earliest rounds of offshore wind, it has been promoted and pursued by the Government, delivered through TCE. Site appraisal was initiated by the Government Strategic Environmental Appraisal (SEA), with subsequent site appraisal and delivery refined by TCE through SEA and Zone Appraisal and Planning studies.

5.3.13 Therefore, the policy drivers for offshore wind clearly lie in and serve the public interest. However, delivery of that public interest must be through private companies such as RWE.

5.3.14 It is widely acknowledged that it is the nature of the interest, not the party promoting that interest, that must be public; and only public interests, irrespective of whether they are promoted either by public or private bodies, can be balanced against the conservation aims of the Regulations.

5.3.15 It is beyond doubt that projects developed by private bodies can be considered where such public interests are served, as in this case.

A LONG TERM INTEREST

5.3.16 For IROPI to arise, the public interest would usually be long-term. Each public interest identified above is a long-term UK interest – decarbonisation, security of supply, provision of low-cost energy, protecting the human species and the environment, providing employment opportunities, contribution to the UK economy, provision of skills training and community benefit.

5.3.17 VE will be capable of providing clean energy generation for around 24 - 40 years (possibly longer) and it can be deployed within a relatively short time frame (before 2030). It will contribute to the UK's future low carbon energy mix needed to meet UK's net zero commitment but also beyond 2050.

5.3.18 As demonstrated in earlier sections of this report, delivery of offshore wind resource is urgently required to bridge the gap between the move away from carbon generation technologies to the large-scale deployment of other technologies such as nuclear, wave and tidal.

5.3.19 All scenarios forecast to achieve net zero involve the large-scale deployment of renewable generation, with the CCC stating that at least 75 GW of offshore wind is required. Electricity demand is predicted to rise and there is a long-term interest in ensuring that the lights remain on, whilst also meeting decarbonisation targets and combatting climate change.

5.3.20 Large energy infrastructure projects have a long lead time due to the planning and consenting framework. The potential contribution of VE is significant to decarbonisation and security of supply, but also strategically important, to ensuring continuity in the offshore wind sector. Through the Offshore Wind Sector Deal (BEIS, 2019), industry has committed to strengthening the competitiveness of the UK supply chain, consistent with the UK's Clean Growth Strategy (BEIS, 2017). This is a long-term endeavour which seeks to maximise the advantages for UK industry from the global shift to clean growth.

5.3.21 Economic benefits will derive not only from the direct construction, operation, and maintenance of VE but from the important confidence it will bring to the UK supply chain.

OVERRIDING INTEREST

5.3.22 Consideration of IROPI necessarily involves a balancing exercise and an exercise of planning judgement by the decision maker, which in the case of the Application is the SoS.

5.3.23 In case C-239/0436, Advocate General Kokott said:

"The necessity of striking a balance results in particular from the concept of 'override', but also from the word 'imperative'. Reasons of public interest can imperatively override the protection of a site only when greater importance attaches to them. This too has its equivalent in the test of proportionality, since under that principle the disadvantages caused must not be disproportionate to the aims pursued."

5.3.24 Or, as put by the EC in C-239/04 82:

"…the choice requires a balance to be struck between the adverse effect on the integrity of the SPA and the relevant reasons of overriding public interest."

5.3.25 It will be for the SoS therefore to make a judgement on whether the substantial, long-term public interest that VE delivers, outweighs the potential harm to European Sites.

5.3.26 VE's Overriding Interest is set against the envisaged harm. To inform the SoS's exercise of judgement as to the planning balance of whether, in light of the alternatives considered and the case for IROPI (significant public benefits to the UK and humanity) VE should be granted consent despite the potential for AEoI of the AOE SPA and Ramsar site, the FFC SPA and the M&LS SAC.

BENEFITS TO EUROPEAN SITES AND BIODIVERSITY

5.3.27 If the SoS concludes an AEoI on any National site/s then they must determine where the balance lies between the public interest of conserving biodiversity in the short term and the public interest(s), including indirectly conserving biodiversity, provided by VE.

5.3.28 As presented in detail under the 'Combatting Climate Change' section (above), VE will serve the interest of conserving biodiversity in the longer term. In relation to seabirds, as global warming has accelerated, warmer winter sea temperatures have caused shifts in the abundance and quality of seabird prey species such as sandeels, with knock-on effects for seabirds. In addition, an increase in the frequency of extreme weather events could affect breeding habitat and create unfavourable foraging conditions, which may lead to increased mortality of adults and chicks. VE will provide a significant contribution to alleviating one of the key anthropogenic pressures on the seabirds at the impacted SPAs and Ramsar site: climate change driven reductions in prey availability.

5.3.29 This case would also apply for benthic habitats (of SAC's) where increased weather instability could result in suboptimal conditions for benthic communities and their supporting habitat.

5.4 CONCLUSION

5.4.1 VE is a project of strategic importance for the UK, for the future protection of local communities, property, and infrastructure and to ensure a reliable supply of electricity for the UK in the long-term. Concurrently, the transition to renewable energy is more beneficial ecologically than a continuous reliance on finite fossil fuels.

5.4.2 The long-term public interest that VE delivers must outweigh the potential harm to European Sites, and The Applicant considers that there are no alternatives to VE. As the Proposed Development is a fundamental component of the UK's need and obligations to address climate change, the potential harm is clearly outweighed by the substantial public interest. Ultimately the decision over a long-term renewable energy strategy versus minimal predicted adverse impacts on European sites rests with the SoS.

5.4.3 In terms of support from previous cases, it is noted that in the determination of previous OWF derogation cases (see Section 2.7), the SoS found that the projects would provide an essential public benefit in terms of the delivery of renewable energy, specifically (and the statement is consistent across all five Decisions) *'a public benefit which is essential and urgent despite the harm to the integrity of the [feature(s)].'* The SoS has supported its conclusions based on *'the principal and essential benefit of the [Proposed] Development as a significant contribution to limiting the extent of climate change in accordance with the objectives of the Climate Change Act 2008 (as amended)'*; and outlines that by not meeting these targets it *'would be severely detrimental to societies across the globe, including the UK, to human health, to social and economic interests and to the environment.'*

5.4.4 The SoS's determination of previous OWF derogation cases is further supported by the SoS's references to NPSs (EN-1, 2, 3), international agreements and Net Zero targets to support IROPI as well as the need for increased demand for electricity, need for a *'reliable and secure mix of low-carbon electricity sources, including large-scale development of offshore wind generation'.*

5.4.5 Scale of development and urgency is also a clear reason for the SoS's decision stating the projects make *'a significant contribution to meeting the target capacity in the timeframe required are therefore both necessary and urgent'.*

5.5 SUMMARY OF IROPI

5.5.1 This submission demonstrates a compelling case that VE is indispensable and must be carried out for IROPI.

5.5.2 VE can substantially contribute to the UK's legally binding climate change targets by helping to decarbonise energy supply, whilst also contributing to the essential tasks of ensuring security of supply and providing low-cost energy for consumers in line with the UK Government's national policies.

5.5.3 VE will contribute to tackling the climate change risks identified in the UK CCC's "UK Third Climate Change Risk Assessment (CCRA3)", all of which impact the core IROPI of human health, public safety, and the primary importance of the environment.

5.5.4 VE will also contribute materially to the economic and social landscape in the UK as it can provide substantial employment opportunities and skills development, particularly in coastal communities, whilst also playing a major role in supporting the UK's supply chains.

5.5.5 If the SoS finds AEoI in respect of the AOE SPA and Ramsar site, the FFC SPA and the M&LS SAC then there is a demonstrable overriding public interest in VE and the policy objectives it will serve, which significantly outweighs the contribution of VE to AEoI.

6 COMPENSATORY MEASURE PROVISION

6.1.1 Having demonstrated that there are no Alternative Solutions and that there are IROPI for VE, it is also necessary for the SoS to be satisfied that compensatory measures can be put in place if necessary to ensure the overall coherence of the European Site Network is protected, should the SoS conclude AEoI on any European Site.

6.1.2 The approach to compensation in England has been, to date, on a project-level piecemeal basis – where individual projects plan, secure and deliver appropriate compensation for their own anticipated effects on the National Site Network. However, it is acknowledged across industry, by the UK Government and regulators that this approach is inefficient and unsustainable and that a more strategic, joined-up approach is necessary.

6.1.3 The Offshore Wind Environmental Improvement package (OWEIP) is the UK Government's solution to this problem. The OWEIP is designed to strengthen commitments in the BESS (BEIS, 2022d), and includes the setting up of a 'Marine Recovery Fund' (MRF) to help deliver these strategic measures.

6.1.4 The industry funded MRF will provide an efficient method for delivering compensatory measures which are becoming increasingly difficult to identify at the individual project level (DESNZ, 2023).

6.1.5 NPS EN-1 includes provisions to deliver measures on Marine Protected Area (MPA) assessments, strategic compensation and the above mentioned MRF. The powers apply specifically for the development of offshore wind and associated infrastructure in the marine environment. These powers allow:

- regulations to be made relating to the assessment of the environmental effects of relevant offshore wind activities in relation to protected sites and about compensatory measures.
- strategic compensatory measures to be taken or secured.
- regulations to be made to establish one or more MRFs.

6.1.1 Defra has been working in partnership with industry and environmental stakeholders on pilot projects to identify effective strategic compensatory measures for delivery through a MRF. These are being added to a library of measures to be made available to developers and will enable projects to move forward where compensation needs to be considered and can only be effectively delivered strategically across multiple projects.

6.1.2 Defra recently (February 2024) released a consultation on "policies to inform updated guidance for MPA assessments", following review of its 2021 draft guidance "Best practice guidance for developing compensatory measures in relation to Marine Protected Areas" (Defra, 2021). The new guidance will include recommendations on how to ensure MPA assessments provide a proportionate understanding of ecological impact. This consultation is part of a series of consultations on the OWEIP; further consultations are planned on OWES and in relation to draft regulations for MPA assessments and the MRF.

6.1.3 Defra has also recently (February 2024) consulted on 'policies to inform updated guidance for MPA assessments'. This consultation is a key part of Defra's Offshore Wind Environmental Improvement Package (OWEIP) which aims to help accelerate offshore wind deployment whilst ensuring the marine environment is protected.

6.1.4 As the MRF and relevant guidance is relatively new and undeveloped, it is currently unknown how quickly it will be suitably developed. **Notwithstanding this, the Applicant would consider fulfilling its compensation requirements through this mechanism, if available and appropriate.**

6.1.5 Through considering the UK Government's current and emerging advice, the Applicant has identified a suite of potential project-level and strategic, DEFRA led, compensatory measures that would be suitable for VE. Full details of these measures are available in the following documents:

- Volume 5, Report 5.1: Benthic Compensation Strategy Roadmap
- Volume 5, Report 5.2: Outline Benthic In-Principle Monitoring Plan
- Volume 5, Report 5.3: Lesser Black-Backed Gull Compensation – Evidence, Sitr Selection and Roadmap
- Volume 5, Report 5.4: Kittiwake – Evidence, Site Selection and Roadmap
- Volume 5, Report 5.5: Guillemot and Razorbill – Evidence, Site Selection and Roadmap
- Volume 5, Report 5.6: Lesser Black Backed Gull Implementation and Monitoring Plans
- Volume 5, Report 5.7: Kittiwake Implementation and Monitoring Plans
- Volume 5, Report 5, Annex 5.8: Guillemot and Razorbill Implementation and Monitoring Plans

7 DEROGATION CASE CONCLUSION

7.1.1 The UK urgently needs to deploy significant volumes of large-scale low carbon generation to meet its legally binding net zero commitment. VE is a major infrastructure project which responds directly to fundamental and urgent national objectives, delivering significant volumes of low carbon generation in the 2020s, whilst also contributing to the essential tasks of ensuring security of supply and providing low-cost energy for consumers in line with the UK government's national policies.

7.1.2 As an extension project, VE brings the additional benefits of making the best use of favourable 'tried and tested' locations and existing infrastructure – thereby minimising environmental risks whilst increasing renewable energy generation at a lower cost.

7.1.3 The Applicant strongly believes the evidence is clear to support the Application position that no Alternative Solutions exist, and a favourable derogation conclusion can confidently be reached.

7.1.4 The Applicant is confident that the HRA with/without prejudice derogation case submitted provides the necessary information to support a clear and overriding case for VE should the SoS conclude AEoI for AOE SPA and Ramsar site, FFC SPA or M&LS SAC.

7.1.5 If the SoS finds AEoI in respect of any of these European Sites then there is a demonstrable overriding public interest in VE and the policy objectives it will serve, which outweighs the risk of any adverse impact on the sites.

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FIVE ESTUARIES
OFFSHORE WIND FARM

PHONE 0333 880 5306
EMAIL fiveestuaries@rwe.com
WEBSITE www.fiveestuaries.co.uk
ADDRESS Five Estuaries Offshore Wind Farm Ltd
Windmill Hill Business Park
Whitehill Way, Swindon, SN5 6PB
COMPANY NO Registered in England and Wales
company number 12292474