




F I V E   
ESTUARIES  
OFFSHORE WIND FARM

FIVE ESTUARIES  
OFFSHORE WIND FARM  
PRELIMINARY ENVIRONMENTAL  
INFORMATION REPORT

VOLUME 3, CHAPTER 11: HUMAN  
HEALTH, MAJOR DISASTERS & CLIMATE  
CHANGE

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## DEFINITION OF ACRONYMS

Term	Definition
AQMA	Air Quality Management Area
Area of Search	AoS
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
ECC	Export Cable Corridor
EMF	Electromagnetic Fields
EN -1	National Policy Statement for Energy
ES	Environmental Statement
FRA	Flood Risk Assessment
HDD	Horizontal Directional Drilling
HIA	Health Impact Assessment
ICNIRF	International Commission on Non-ionizing Radiation Protection
LSE	Likely Significant Effects
NPS	National Policy Statement
NRMM	Non-Road Mobile Machinery
OHID	Office for Health Improvement and Disparities
OnSS	Onshore Substation
OWF	Offshore Wind Farm
PAMP	Public Access Management Plan
PEIR	Preliminary Environmental Information Report
PRoW	Public Rights of Way
SoS	Secretary of State
TCC	Temporary Construction Compound
UXO	Unexploded Ordnance
VE	Five Estuaries Offshore Wind Farm
WTP	Workforce Travel Plan



## 11 HUMAN HEALTH, MAJOR DISASTERS & CLIMATE CHANGE

### 11.1 INTRODUCTION

- 11.1.1 This chapter considers the likely significant effects associated with the Five Estuaries Offshore Wind Farm (VE) on human health, major accidents and climate change. It draws on information that has been gathered and presented in other chapters of the Preliminary Environmental Information Report (PEIR) for VE. The purpose of this chapter is to signpost to the potential impacts of VE on the health of the local population and to climate change.
- 11.1.2 Human health is an inherent part of a number of technical areas assessed within the PEIR, including flood risk, air quality, noise and vibration, socioeconomics, tourism and recreation and traffic and transport. This chapter provides a summary of the conclusions for each relevant PEIR chapter assessment, which are referenced below, as these effects are not considered in the wider PEIR in the context of human health.
- 11.1.3 The mitigation of climate change and provision of renewable energy to contribute towards UK targets for energy decarbonisation and the move to Net Zero is an inherent aim of VE. Each technical chapter, where relevant, has considered the impact that climate change may have on the project, as well as potential impacts the project may have on climate change. Future work for the Environmental Statement (ES), will build on these initial considerations to more fully assess the impact that VE may have on climate change and vice versa.
- 11.1.4 This chapter should be read alongside the following chapters and annexes of the PEIR, which are referred to and drawn upon throughout this document:
- > Volume 1, Annex 3.1: Cumulative Effects Assessment Methodology;
  - > Volume 1, Chapter 2: Policy and Legislative Context;
  - > Volume 1, Chapter 4: Site Selection and Alternatives;
  - > Volume 3, Chapter 1: Onshore Projects Description;
  - > Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation;
  - > Volume 3, Chapter 5: Ground Conditions and Land use;
  - > Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk;
  - > Volume 3, Chapter 8: Traffic and Transport;
  - > Volume 3, Chapter 9: Airborne Noise and Vibration;
  - > Volume 3, Chapter 10 Air Quality;
  - > Volume 2, Chapter 13: Military and Civil Aviation;
  - > Volume 5, Annex 5.8.3: Outline Construction Traffic Management Plan (CTMP);
  - > Volume 5, Annex 5.8.4: Outline Public Access Management Plan (PAMP);
  - > Volume 5, Annex 5.8.5: Outline Workforce Travel Plan (WTP);
  - > Volume 5, Annex 6.1: Export cable corridor flood risk assessment;
  - > Volume 5, Annex 6.2: Onshore substation flood risk assessment;
  - > Volume 5, Annex 10.2: Air Quality;
  - > Volume 5, Annex 10.3: Air Quality - Offshore Activities Assessment;



- > Volume 5, Annex 10.4: Air Quality - Road Traffic Dispersion Modelling;
- > Volume 5, Annex 10.5: Air Quality - Air Quality Mitigation Measures; and
- > Volume 7, Report 6: Navigational Risk Assessment.

## 11.2 HUMAN HEALTH

### STATUTORY AND POLICY CONTEXT

- 11.2.1 Detail regarding the relevant legislation and policy is outlined in Volume 1, Chapter 2: Policy and Legislation. This section identifies legislation, guidance and policy of particular relevance to the potential impact on human health associated with the construction, operation and decommissioning of VE.
- 11.2.2 The Planning Act 2008, Infrastructure Planning EIA Regulations 2017 (EIA Regulations 2017) and Environment Act (1995) are considered along with the more specific legislation relevant to human health. Where health and well-being impacts have been assessed in other PEIR chapters, further specific legislation and policy information has been provided in the relevant chapter.
- 11.2.3 Planning policy relating to human health, which is of relevance to the proposed development, is provided by the National Policy Statements (NPSs). These provide the primary basis for the recommendations made by the Examining Authority (the Planning Inspectorate) to the Secretary of State for Business Energy and Industrial Strategy on applications for development consent for nationally significant renewable energy projects. Overarching guidance on nationally significant energy projects is provided in National Policy Statement for Energy (NPS EN-1) (DECC 2011a). The NPSs are currently being revised and draft versions were published for consultation in 2021. Technical chapters take account of the existing and draft NPSs.
- 11.2.4 Guidance specifically relating to onshore grid connections is provided in EN-5 (DECC 2011c). This policy focuses on guidance primarily in relation to overhead lines which is not applicable to VE as all onshore export transmission cables from the landfall location to the proposed onshore substation (OnSS) and proposed East Anglia Connection Node substation would be underground.
- 11.2.5 Consideration has been given to the advice provided in the Institute of Environmental Management and Assessment, 2017: Health in Environmental Assessment, a primer for a proportionate approach (Cave *et al.*, 2017). The advice notes that Health Impact Assessment (HIA) is a separate process to EIA and is used to provide specific human health input to project design and to identify appropriate actions to improve and protect human health. The advice goes on to acknowledge that EIA includes some aspects of human health, for example consideration of human receptors in relation to air or water quality and noise or light disturbance. Furthermore, the socio-economics chapter of an EIA typically includes the implications on public services (including health services), education and employment (as is the case for the VE socioeconomics chapter).

### CONSULTATION AND SCOPING

- 11.2.6 Consultation on the scope of the EIA took place following the publication of the VE Scoping Report (Five Estuaries Offshore Wind Farm (OWF), September 2021).



11.2.7 A Scoping Opinion for VE was sought from the Secretary of State (SoS) which included consultation responses from PINS, Essex County Council, North East Essex Clinical Commissioning Group and UK Health Security Agency and the Office for Health Improvement and Disparities (OHID) (formerly Public Health England) which are relevant to this chapter. The Scoping Opinion was received in November 2021. Table 11.1 provides a summary of the relevant consultation responses received in relation to human health.



**Table 11.1: Human health consultation summary**

Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
PINS, Scoping Opinion, November 2021	<p><b>Impact on human health due to air emissions including dust and emissions during operation.</b></p> <p>As the Scoping Report did not explain whether backup generators are likely to be required and the location of the onshore substation (OnSS) was not described, PINS does not consider that sufficient evidence was presented to scope out this matter. It stated that the ES should include an assessment of these matters or information demonstrating the absence of Likely Significant Effects (LSE).</p>	<p>These impacts are assessed in Volume 3, Chapter 10: Air Quality, Section 10.11.</p>
PINS, Scoping Opinion, November 2021	<p><b>Impacts on human health due to water emissions during operation.</b></p> <p>PINS agree that this matter can be scoped out of further assessment on the basis that no planned activities during the operation phase are anticipated which could result in notable additional run-off into the water environment.</p>	<p>Impacts on human health due to water emissions during operation have been scoped out of the assessment undertaken in Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk.</p>





Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
PINS, Scoping Opinion, November 2021	<p><b>Impacts on human health due to soil emissions (including hazardous waste and substances) during operation.</b></p> <p>PINS agree that this matter can be scoped out of further assessment on the basis that no planned activities during the operation phase are anticipated which could result in the mobilisation of contaminants and hazardous substances. It states the reasons for the absence of LSE must be fully justified in the ES.</p>	<p>Impacts on human health due to soil emissions (including hazardous waste and substances) during operation have been scoped out of the assessment undertaken in Volume 3, Chapter 5: Ground Conditions and Land Use.</p> <p>An assessment has been undertaken in relation to ingress and accumulation of hazardous ground gases during operation.</p>
PINS, Scoping Opinion, November 2021	<p><b>Disruption to local road network (reduced access to services and amenities) during operation</b></p> <p>PINS agree that this matter can be scoped out of further assessment on the basis that no disruptions to the local road network are anticipated due to the low numbers of vehicles anticipated to be required during the operation and maintenance phase. It states the ES project description should explain the likely number and frequency of visits during operation and maintenance.</p>	<p>Impacts on the local road network during operation been scoped out of the assessment undertaken in Volume 3, Chapter 8: Traffic and Transport.</p> <p>The frequency of traffic in relation to operational and maintenance activities is outlined in Volume 3, Chapter 8: Traffic and Transport, Section 8.4.</p>



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
PINS, Scoping Opinion, November 2021	<p><b>Impacts on human health due to exposure to Electromagnetic fields (EMFs) (all phases)</b></p> <p>PINS agree that this matter can be scoped out of further assessment on the basis that all electrical infrastructure will have to comply with International Commission on Non-ionizing Radiation Protection (ICNIRP) guidelines for public exposure and design of electrical infrastructure, and the impact will be of negligible magnitude.</p>	Impacts on human health due to exposure to EMFs have been scoped out of the EIA.
PINS, Scoping Opinion, November 2021	<p><b>Impacts on human health due to pests (all phases)</b></p> <p>PINS agree that this matter can be scoped out of further assessment on the basis that no pathways are anticipated to result in the increase of pests.</p>	Impacts on human health due to pests (all phases) have been scoped out of the EIA.
PINS, Scoping Opinion, November 2021	<p><b>Impacts on human health due to odours (all phases)</b></p> <p>PINS agree that this matter can be scoped out of further assessment on the basis that no notable odours are anticipated during any of the phases of the project, but state this should be revisited once final route alignments have been agreed and the risk of impact on contaminated land has been fully evaluated.</p>	Impacts on human health due to odours (all phases) have been scoped out of the EIA. This will be reviewed once more detailed project design information is received and updated information will be presented in the Environmental Statement (ES) which will accompany the Development Consent Order (DCO).



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
PINS, Scoping Opinion, November 2021	<p><b>Cumulative effects</b></p> <p>The Inspectorate considers that there was insufficient evidence to scope this matter out of the ES and states that Cumulative effects in terms of inter-relationships with other developments, projects and activities should be considered.</p>	<p>Cumulative effects in terms of inter-relationships with other developments, projects and activities are considered where relevant within the technical chapters of the PEIR. The methodology used is outlined in Volume 1, Annex 3.1: Cumulative Effects Assessment Methodology.</p>
PINS, Scoping Opinion, November 2021	<p><b>Transboundary impacts in relation to human health</b></p> <p>PINS agree that this matter can be scoped out of further assessment based on the localised nature of the impacts associated with VE.</p>	<p>Transboundary impacts in relation to human health have been scoped out of the EIA.</p>
PINS, Scoping Opinion, November 2021	<p><b>Vulnerable groups</b></p> <p>PINS stated that the assessment should include consideration of the potential for vulnerable groups to experience particular effects and identify any mitigation measures accordingly. Efforts should be made to agree the groups likely to be affected with relevant consultation bodies. The ES should explain how these vulnerable groups have been identified.</p>	<p>Volume 3, Chapter 8: Traffic and Transport has assessed the potential effect of VE on the safety of vulnerable road users (particularly pedestrians and cyclists) and road safety in Section 8.9.</p>



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
<p>North East Essex Clinical Commissioning Group, Scoping Opinion, November 2021</p>	<p><b>Traffic issues and emergency services response times including cumulative effects.</b></p> <p>Seek to understand the potential impacts of HGVs on A12 and minor A roads.</p> <p>State that impacts on emergency services response times should be assessed.</p>	<p>Volume 3, Chapter 8: Traffic and Transport has assessed the potential effect of VE in relation to traffic issues including those routes likely to be used by emergency services.</p>
<p>North East Essex Clinical Commissioning Group, Scoping Opinion, November 2021</p>	<p><b>Noise, vibration and air quality - Air Quality Management Area</b></p> <p>State that nearest Air Quality Management Area (AQMA) is Colchester which would not produce comparable data on potential impacts.</p>	<p>All AQMAs including Colchester AQMA have been considered within the air quality assessment in Volume 3, Chapter 10: Air Quality. There are not considered direct project interactions with the Colchester AQMA which have the potential to cause an air quality impact. Further information in relation to Colchester AQMA is provided in Paragraph para 10.7.3 of Volume 3, Chapter 10: Air Quality.</p>
<p>North East Essex Clinical Commissioning Group, Scoping Opinion, November 2021</p>	<p><b>Socio-economics – education and training</b></p> <p>Are keen to work with the developer in relation to skills, education, training for young and local people including links to educational establishments to develop a local workforce.</p>	<p>The potential for VE to contribute to employment and skills is under consideration in consultation with stakeholders, see Volume 3, Chapter 3: Socio-economics, Tourism and Recreation for more information.</p>



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
<p>North East Essex Clinical Commissioning Group, Scoping Opinion, November 2021</p>	<p><b>Demand on healthcare services</b>            Are keen to ensure that the detail provided on the potential demand on healthcare services during the construction period.</p>	<p>There is potential for an influx of workers during the construction phase to create a demand for local healthcare services that may lead to undue pressure on the system (Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation, Table 3.3).</p> <p>The assessment of effects on healthcare services is the subject of ongoing data collection and will be addressed in full in the ES submitted with the DCO, see Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation for more information.</p>
<p>UK Health Security Agency and OHID</p>	<p><b>Vulnerable populations</b>            State that the identification of vulnerable populations and sensitive receptors such as community facilities and public open space should be considered. State that baseline health data should be provided, which references the list provided by the Welsh Health Impact Assessment Support Unit<sup>1</sup></p>	<p>Impacts on vulnerable road users are assessed in Volume 3, Chapter 8: Traffic and Transport. Impacts on community facilities and public open space are assessed in Volume 3, Chapter 3: Socioeconomics, Tourism.</p>

<sup>1</sup> WHIASU (2020). Health Impact Assessment – A Practical Guide



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
<p>UK Health Security Agency and OHID</p>	<p><b>Construction work force - Housing affordability and availability / healthcare demands</b></p> <p>State that the peak numbers of construction workers should be established and a proportionate assessment undertaken on the impacts for housing availability and affordability and impacts on any local services</p>	<p>In its consultation response PINS have stated that assessment of housing affordability can be scoped out <i>“The Applicant states that the construction and decommissioning phases of the Proposed Development are expected to be relatively short-term activities that will not lead workers to relocate to the area with their families, and therefore there is not expected to be an influx of workers seeking housing and schools’ services in the wider study area. The Inspectorate agrees this impact is unlikely to result in significant effects and this matter can be scoped out of further assessment in the ES.”</i></p> <p>In terms of healthcare demands as stated above, there is potential for an influx of workers during the construction phase to create a demand for local healthcare services that may lead to undue pressure on the system, (Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation, Table 3.3).</p> <p>The assessment of effects on healthcare services is the subject of ongoing data collection and will be addressed in full in the ES, see Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation for more information.</p>



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
Essex County Council, Scoping Opinion, November 2021	<p><b>Health and Wellbeing - Traffic and Transport</b></p> <p>Agrees with the scope of the traffic and transport assessment, however, does not support scoping out assessment of decommissioning impacts and states that a whole lifecycle approach is required.</p>	<p>A qualitative assessment of likely decommissioning activities has been undertaken in Volume 3, Chapter 8: Traffic and Transport, Section 8.9.</p>
Essex County Council, Scoping Opinion, November 2021	<p><b>Health and Wellbeing – Air Quality</b></p> <p>Agrees with scope proposed, however, states that to agree with scoping out emissions from operation of Non -Road Mobile Machinery (NRMM) during construction, robust control measures will need to be implemented and enforced effectively.</p>	<p>The impacts on human health from air quality have been assessed in Volume 3, Chapter 10: Air Quality, Sections 10.10, 10.11, 10.12 and Volume 5, Annex 10.2: NRMM Assessment, Annex 10.3: Offshore Activities Assessment and Annex 10.4: Road Traffic Dispersion Modelling.</p> <p>Following the outcomes of the NRMM qualitative emissions assessment presented within Volume 3, Chapter 10: Air Quality, proportionate mitigation, as recommended by relevant guidance is proposed to minimise, or where possible remove potential impacts from NRMM as described in Volume 7, Report 3: Draft Code of Construction Practice (CoCP)</p>
Essex County Council, Scoping Opinion, November 2021	<p><b>Health and Wellbeing - Socio Economics and Tourism</b></p> <p>Agrees with the scope of assessment proposed.</p>	<p>The effects on human health from Socio-economic impacts have been assessed in Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation, Sections 3.8, 3.9, 3.10.</p>



Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
Essex County Council, Scoping Opinion, November 2021	<p><b>Health and Wellbeing - Socio Economics and Tourism</b></p> <p>Agrees with the proposed cumulative assessment of impacts in respect of construction operations and workers / skills/ labour availability</p>	This has been assessed in Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation, Section 3.11.
Essex County Council, Scoping Opinion, November 2021	<p><b>Public Health Assessment</b></p> <p>Welcomes the broad comprehensive approach towards Public Health matters as described in the Scoping Report.</p>	The assessment of impacts on Public Health undertaken throughout relevant chapters of the PEIR is summarised in this chapter.
Essex County Council, Scoping Opinion, November 2021	<p><b>Public Health Assessment</b></p> <p>Draws attention to the National Policy Statement for Energy (EN -1) as referenced in the Scoping Report.</p>	The EIA has taken account of this guidance.
Essex County Council, Scoping Opinion, November 2021	<p><b>Public Health Assessment</b></p> <p>Broadly agrees with the scope of the assessment for Public Health as outlined in Table 28.1 of the Scoping Report.</p>	Addressed in all PEIR chapters as appropriate and conclusions summarised in this chapter.





<p>Essex County Council, Non-Statutory Consultation, August 2022</p>	<p><b>Community impacts Stated:</b></p> <p><i>“...it is unavoidable for the development to result in serious and lasting negative residual impacts on the community and locality, including on amenity, loss/reduced quality of recreational opportunity for the community, tourism, culture and heritage, and health and wellbeing. ECC expects appropriate and robust mitigation for such residual impacts, which could be, for example, include but not be limited to, funding for alternative outdoor recreational offers, access and amenity improvements, green space, cultural and heritage enhancements”.</i></p> <p><b>Health and Wellbeing</b></p> <p>Supports comments made by NHS, CCG and the Blue Light Emergency Services.</p> <p>States that a construction Management Plan (CMP) with regard to BS 5228:2009 Code of Practice of Noise and Vibration Control on Construction and Open Sites should be submitted.</p> <p>States an appropriate noise and lighting assessment should be undertaken.</p> <p>States that the consultation undertaken so far is not sufficient to provide details for how VE would affect blue light services or access to NHS services within Tendring and the wider region.</p>	<p>Further consultation has been ongoing with the host authority, NHS, Suffolk County Council and Essex County Council throughout various expert topic groups and non-statutory public consultations throughout 2022.</p> <p>Noted, please see control measures proposed in Volume 7, Report 3: Draft CoCP.</p> <p>Volume 3, Chapter 9: Airborne Noise and Vibration Sections 9.10 and 9.11 assess construction and operational noise impact from VE upon the existing environment.</p> <p>Volume 3, Chapter 8: Traffic and Transport assesses the impact of VE on blue light services.</p> <p>The assessment of effects on healthcare services is the subject of ongoing data collection and will be addressed in full in the ES submitted with the DCO, see Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation for more information.</p>
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Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
NHS Jobs, Skills and Health Team, Consultation meeting, September 2022	<p>General project update meeting to the NHS and to explain our approach to jobs, skills and health in the PEIR process.</p> <p>Following the NHS response in non-stat consultation in August 2022, the key issue raised was the benefit of employment to individuals' health.</p>	<p>An Employment, Skills and Education Strategy has been committed to by the project to seek to address this concern, see Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation for more information.</p>



## IMPACTS SCOPED OUT

- 11.2.8 Further to the EIA scoping and receipt of the scoping opinion, the following impacts have been scoped out of assessment in relation to human health:
- > Impacts on human health due to exposure to EMFs from all phases of the development;
  - > Impacts on human health due to pests as a result of all phases of the development;
  - > Impacts on human health due to odours as a result of all phases of the development;
  - > Impacts on human health due to water emissions from construction and decommissioning phases;
  - > Impacts on human health due to noise disturbance from operation of the onshore substation;
  - > improvement of air quality relative to alternative fuel sources such as coal and gas power stations;
  - > Impacts on human health due to air, water and soil emissions as result of operations and maintenance phases; and
  - > Impacts on human health as a result from disruption to local road network as result of operations and maintenance phases.

## IMPACTS SCOPED IN AND ADDRESSED AT PEIR

- 11.2.9 Table 11.2 lists the potential impacts which have been assessed in relation to human health and provides information on the chapters of the PEIR where they have been assessed.
- 11.2.10 For each of the impacts considered below, the study area is described in the relevant technical chapters.
- 11.2.11 Potential impacts on human health have been minimised by the site selection process described in Volume 1, Chapter 4: Site Selection and Alternatives, used to define the OnSS Area of Search (AoS).
- 11.2.12 Similarly, the Export Cable Corridor (ECC) AoS was identified through an iterative process and potential impacts on human health from the ECC were minimised.
- 11.2.13 It is important to note that impacts on other environmental topics were also avoided, so far as reasonable and practicable.
- 11.2.14 Residual effects on all identified human health receptors within the relevant chapters listed below are deemed to be not significant:
- > Volume 3, Chapter 3: Socio-economics, Tourism and Recreation;
  - > Volume 3, Chapter 5: Ground Conditions and Land use;
  - > Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk;
  - > Volume 3, Chapter 8: Traffic and Transport;
  - > Volume 3, Chapter 9: Airborne Noise and Vibration; and
  - > Volume 3, Chapter 10: Air Quality.



**Table 11.2: Human health impacts addressed at PEIR**

Potential Impact on Human Health	Relevant PEIR Chapter
<b>CONSTRUCTION AND DECOMMISSIONING</b>	
<p>Impacts on human health due to air emission impacts including dust.</p>	<p>The impacts on human health from air emissions have been assessed in Volume 3, Chapter 10: Air Quality, Section 10.10 in relation to the following topics:</p> <ul style="list-style-type: none"> <li>&gt; Construction dust;</li> <li>&gt; Road traffic;</li> <li>&gt; Non-Road Mobile Machinery (NRMM); and</li> <li>&gt; Offshore activities (vessel and helicopter movements).</li> </ul>
<p>Impacts on human health due to impacts on surface and groundwater water quality and flood risk (water emissions).</p>	<p>The impacts on water quality and flood risk have been assessed in Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk, Sections 6.11 and 6.12 in relation to:</p> <ul style="list-style-type: none"> <li>&gt; The tidal and fluvial floodplain; Various watercourses; including Main Rivers and ordinary watercourses or drains;</li> <li>&gt; The near-shore tidal waters of the North Sea; and</li> <li>&gt; Underlying groundwater bodies.</li> </ul>
<p>Impacts on human health due to soil emissions (including hazardous waste and substances).</p>	<p>The impacts on human health due to soil emissions (including hazardous waste and substances) have been assessed in Volume 3, Chapter 5: Ground Conditions and Land Use, Sections 5.10, 5.11 and 5.12 in relation to:</p> <ul style="list-style-type: none"> <li>&gt; Contaminated land: Impacts to construction workers and offsite human receptors;</li> <li>&gt; Onshore UXO (unexploded ordnance);</li> <li>&gt; Risks to sensitive surface water and groundwater resources; and</li> <li>&gt; Impacts upon soil quality / resource.</li> </ul>



Potential Impact on Human Health	Relevant PEIR Chapter
Impacts on human health due to noise and vibration disturbance.	<p>The impacts on human health have been assessed in Volume 3, Chapter 9: Airborne noise and vibration, Sections 9.10, 9.11 and 9.12 in relation to:</p> <ul style="list-style-type: none"> <li>&gt; Noise and vibration impacts during the construction of the Landfall;</li> <li>&gt; Noise and vibration impacts during the construction of the ECC;</li> <li>&gt; Noise and vibration impacts during the construction of the OnSS; and</li> <li>&gt; Noise impacts from construction vehicles using the road network.</li> </ul>
Disruption to local road network	<p>The disruption to the local road network in terms of impacts on human health have been assessed in Volume 3, Chapter 8: Traffic and Transport, Sections 8.9, 8.10 and 8.11 in relation to:</p> <ul style="list-style-type: none"> <li>&gt; Driver severance and delay;</li> <li>&gt; Community severance;</li> <li>&gt; Vulnerable road users and road safety;</li> <li>&gt; Pedestrian Amenity;</li> <li>&gt; Dust and Dirt; and</li> <li>&gt; Dangerous loads.</li> </ul>
Impact on human health as a result of Socioeconomics, Tourism and Recreation impacts.	<p>The impacts on human health have been assessed in Volume 3, Chapter 3: Socioeconomics, Tourism and Recreation, Sections 3.8, 3.9 and 3.10 and 3.1 in relation to:</p> <ul style="list-style-type: none"> <li>&gt; Healthcare services within the wider study area; and</li> <li>&gt; Community facilities.</li> </ul>
Impacts from major accidents and disasters	<p>A standalone chapter on the topic of major accidents and/or disasters is not proposed to be included within the PEIR, rather these matters are included throughout the PEIR in the relevant chapters, see Section 12.5 of this chapter for more information.</p>



Potential Impact on Human Health	Relevant PEIR Chapter
Vulnerable groups and populations	Volume 3, Chapter 8: Traffic and Transport has assessed the potential effect of VE on the safety of vulnerable road users (particularly pedestrians and cyclists) and road safety in Section 8.9.
<b>OPERATION</b>	
Impacts on human health due to noise disturbance from the OnSS	The impacts on human health have been assessed in Volume 3, Chapter 9: Airborne noise and vibration, Sections 9.10, 9.11 and 9.12 in relation to: > Noise impacts during the operation of the OnSS.
Impacts from major accidents and disasters	See Section 11.5 of this chapter for more information. Major accidents and disasters are considered throughout the EIA in the relevant chapters.

## CONCLUSIONS

- 11.2.15 This section provides a summary of consultation responses received in relation to human health. It lists the relevant chapters of the PEIR which contain assessment information in relation to these topics.
- 11.2.16 Potential additional mitigation measures from the relevant technical chapters and associated documents in relation to each potential impact have been summarised. A summary of the residual effects that would apply after these mitigation measures have been applied, as stated in each technical chapter, is provided.
- 11.2.17 The overall conclusion is that after the relevant mitigation measures are applied, VE would not cause any significant residual effects in relation to human health.

## NEXT STEPS

- 11.2.18 As the project design is refined and more detailed information becomes available, the impact assessments conducted at PEIR will be updated, along with any resulting need to update proposed mitigation. These updates will be captured in the ES that will accompany the DCO application.
- 11.2.19 In addition, an OnSS FRA will be developed for the chosen OnSS location at ES to accompany the DCO application.



## 11.3 MAJOR DISASTERS

### STATUTORY AND POLICY CONTEXT

- 11.3.1 Detail regarding the relevant legislation and policy is outlined in Volume 1, Chapter 2: Policy and Legislation. This section identifies legislation, guidance, and policy of particular relevance to the potential impact of Major Disasters associated with the construction, operation and decommissioning of VE.
- 11.3.2 Regulation 5(4) of the EIA Regulations 2017 requires developers to consider 'expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development.'
- 11.3.3 The EIA Regulations 2017 go on to say in Paragraph 8 of Schedule 4 that developers should include:

*'a description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the.. Council or Council Directive 2009/71/Euratom or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.'*

### CONSULTATION AND SCOPING

- 11.3.4 Consultation on the scope of the EIA took place following the publication of the VE Scoping Report (Five Estuaries Offshore Wind Farm (OWF), September 2021).
- 11.3.5 A Scoping Opinion for VE was sought from the Secretary of State (SoS) which included consultation responses from PINS, Essex County Council, North East Essex Clinical Commissioning Group and UK Health Security Agency and the Office for Health Improvement and Disparities (OHID) (formerly Public Health England) which are relevant to this chapter. The Scoping Opinion was received in November 2021. Table 11.3 provides a summary of relevant consultation responses in relation to human health, major disasters and climate change respectively.



**Table 11.3: Major disasters consultation summary**

Date and Consultation Phase/Type	Consultation and Key Issues Raised	PEIR Chapter Where Comment Addressed
PINS, Scoping Opinion, November 2021	<p><b>Impacts from major disasters (all phases)</b></p> <p>The Inspectorate does not consider that sufficient information was presented to conclude that there would be no LSE from potential major accidents and disasters in respect of the vulnerability of VE to these impacts or for VE to cause them.</p>	<p>These matters are included throughout the PEIR in the relevant chapters, see Section 11.5 of this chapter for more information.</p>

### IMPACTS SCOPED OUT

11.3.6 The following impacts have been scoped out of assessment in relation to major disasters:

- > The handling and storage (or control) of large quantities of chemicals or substances hazardous to health. VE will not require large quantities of hazardous substances and therefore will not be impacted by major disasters. Smaller quantities of hazardous substances such as paint and fuel will be stored in locked and/or bunded containment as appropriate.

### IMPACTS SCOPED IN AND ADDRESSED AT PEIR

11.3.7 For each of the impacts considered below, the study area is described in the relevant technical chapters.

11.3.8 VE will not hold any large inventories of hazardous material during the construction, operation or decommissioning phases, that could be released in the event of a natural disaster affecting the project.

11.3.9 The main areas of vulnerability for the development stem from its marine operating conditions (but for which it will be designed in the first place), coastal erosion at the landfall and flood risk. However, the likelihood of a natural disaster for any of these components leading to consequential significant environmental effects is negligible.

11.3.10 However, relevant aspects of the EIA have examined risks to VE and potential consequential risks to the environment and people. In this EIA, the three aspects relating to major accidents or disasters which could affect VE, with knock on effects to environmental receptors that have been assessed are aviation (see Volume 2, Chapter 13: Military and Civil Aviation), navigational risk (see Volume 7, Report 6, Navigational Risk Assessment) and flood risk (see Volume 5, Annexes 6.1: Export cable corridor flood risk assessment).

11.3.11 A standalone chapter on the topic of major accidents and/or disasters is not proposed to be included within the EIA, rather these matters are included throughout the PEIR in the relevant chapters.





## RISKS TO AVIATION AND MITIGATION

11.3.12 In relation to aviation, it is noted that the construction of VE will create a physical obstruction to flight operations in the vicinity of the array areas. Construction infrastructure such as vessels, offshore substation platforms and erected wind turbines can be difficult to see from the air, particularly in poor meteorological conditions, leading to potential increased obstacle collision risk. Furthermore, during the construction phase, the presence and movement of construction infrastructure may present a potential obstacle collision risk to low flying aircraft operations. To mitigate this risk, a range of embedded mitigation measures, in the form of appropriate notification to aviation stakeholders, lighting and marking to minimise effects to aviation flight operations would apply to the development of VE. These measures would comply with current guidelines and be agreed with the appropriate stakeholders. In addition, the Volume 2, Chapter 13: Military and Civil Aviation, states “It is expected that the continued safe operation of uncontrolled airspace between the shore and VE will not be affected by the addition of helicopter flights in support of VE”.

## RISKS TO SHIPPING & NAVIGATION AND MITIGATION

11.3.13 In terms of navigational risks on the established existing environment, outputs of consultation with key stakeholders and consideration of the future case scenario including the outputs of collision and allision risk modelling, the following impacts have been assessed:

- > Vessel displacement and increased collision risk (array areas and offshore ECC);
- > Third-party with project vessel collision risk (array areas and offshore ECC);
- > Reduced access to local ports and harbours and reduction in under keel clearance (array areas and offshore ECC);
- > Creation of allision risk (array areas);
- > Anchor interaction with subsea cables (array areas and offshore ECC); and
- > Reduction of emergency response capability (including SAR access) (array areas and offshore ECC).

11.3.14 To mitigate all risks to acceptable levels a range of measures have been proposed. Vessel displacement and increased third-party vessel collision risk will be mitigated using a traffic management strategy that will be discussed with local ports and the Sunk Vessel Traffic Service, in addition to, communication of day-to-day project vessel movements in marine coordination.

11.3.15 Creation of allision risk areas and placement of the offshore substation(s) will be discussed with appropriate stakeholders in future consultation.

11.3.16 Overall, the environmental assessment concludes that there will be no significant effects arising from VE, whether in isolation or cumulatively with other projects, during the construction, operation & maintenance, and decommissioning phases.

## FLOOD RISK AND MITIGATION

11.3.17 In relation to flood risk, Volume 5, Annex 6.1: Export cable corridor flood risk assessment concludes that:



11.3.18 "...the perceived level of flood risk to and caused by the development is low and the development would be safe, without significantly increasing flood risk elsewhere".

11.3.19 Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk concludes that the potential substation sites are not in an area of historic flood risk and that the risks of tidal and groundwater flooding are low or very low. The main risks are surface water flooding caused by un-named watercourses / drains and the increased impermeable area at the sites. This would be mitigated by raising the operational platforms above the existing ground level. It is therefore considered that the risk of flooding does not pose a risk to VE in terms of increasing the risk of major accidents and disasters.

## CONCLUSIONS

11.3.20 This section provides a summary of consultation responses received in relation to major disaster. It lists the relevant chapters of the PEIR which contain assessment information in relation to these topics.

11.3.21 Potential additional mitigation measures from the relevant technical chapters and associated documents in relation to each potential impact have been summarised. A summary of the residual effects that would apply after these mitigation measures have been applied, as stated in each technical chapter, is provided.

11.3.22 The overall conclusion is that after the relevant mitigation measures are applied, VE would not cause any significant residual effects in relation to major disasters.

## NEXT STEPS

11.3.23 As the project design is refined and more detailed information becomes available, the impact assessments conducted at PEIR will be updated, along with any resulting need to update proposed mitigation. These updates will be captured in the ES that will accompany the DCO application.

11.3.24 In addition, an OnSS FRA will be developed for the chosen OnSS location at ES to accompany the DCO application.



## 11.4 CLIMATE CHANGE

### STATUTORY AND POLICY CONTEXT

11.4.1 Detail regarding the relevant legislation and policy is outlined in Volume 1, Chapter 2: Policy and Legislation. This section identifies legislation, guidance, national and local policy of particular relevance to the potential impact of and on Climate associated with the construction, operation and decommissioning of VE.

### NATIONAL POLICY AND STRATEGY

11.4.2 In the Overarching National Policy Statement for Energy EN 1 (DECC 2011a), predictions were made that a continuation of global emission trends, including emissions of greenhouse gases such as carbon dioxide, could lead average global temperatures to rise by up to 6°C by the end of this century. The potential impacts associated with such a global temperature rise include:

- > Increased frequency of extreme weather events such as floods and drought;
- > Reduced food supplies;
- > Impacts on human health;
- > Increased poverty; and
- > Ecosystem impacts, including species extinction.

11.4.3 The draft NPS EN-1 (BEIS, 2021) also notes the change in target and focus since the original iteration of EN-1 which had a target of 80% reduction in greenhouse gases by 2050, by highlighting the more ambitious target to reach Net Zero by 2050.

11.4.4 The draft NPS EN-1 also includes the following requirement in relation to carbon assessment:

- > Section 5.3.4 All proposals for energy infrastructure projects should include a carbon assessment as part of their ES. This should include:
  - > A whole life carbon assessment showing construction, operational and decommissioning carbon impacts;
  - > An explanation of the steps that have been taken to drive down the climate change impacts at each of those stages; and
  - > Measurement of embodied carbon impact from the construction stage

11.4.5 In the UK Government's Ten Point Plan for a Green Industrial Revolution, it is recognised that action is necessary to avoid catastrophic climate change. The government target is to reduce 180 million tonnes of carbon dioxide equivalent between 2023 and 2032, with the overall national priority target of net zero by 2050. The first of the ten points specifically focusses on the contribution of offshore wind, through advancing offshore wind development and increasing production to 40 GW by 2030, with the predicted impact of the proposed offshore wind target contributing £20 billion of private investment, and £6 billion in consumer savings. Additionally, the 2022 British Energy Security Strategy has an even more ambitious target of up to 50 GW of offshore wind by 2030.



## LOCAL POLICY AND STRATEGY

- 11.4.6 Essex County Council set up the Essex Climate Action Commission in May 2020 with the objective of developing recommendations on tackling the climate crisis. The recommendations have been set out in the commission's report 'Net Zero: Making Essex Carbon Neutral', published in July 2021. The report put forward a comprehensive plan to:
- > reduce the county's greenhouse gas emissions to net zero by 2050, in line with UK statutory commitments; and
  - > make Essex more resilient to climate impacts such as flooding, water shortages and overheating.
- 11.4.7 The following is a quote from the Energy Chapter of the report – 'We should embrace large-scale renewable energy installations, such as solar and wind farms. We can do this without giving up too much agricultural land and in a way that benefits the local community and supports developments that offer community ownership, and improvements to biodiversity'. The energy chapter also sets a series of recommendations including the following:
- > Essex to produce enough renewable energy within the county to meet its own needs by 2040;
  - > Create hydrogen storage facilities to store excess renewable energy (offshore wind and solar) by 2030; and
  - > Facilities to be created to produce green hydrogen to fuel heavy goods vehicles by 2040.
- 11.4.8 All of these recommendations are consistent with the development of new offshore wind projects off the Essex coast.
- 11.4.9 The proposed onshore cable route corridor and substation location(s) for VE are situated in the Tendring district of Essex. Tendring District Council's Local Plan 2013-2033 and Beyond does contain some policies which are supportive of offshore wind development, including the following:
- > Tendring District Local Plan 2013-2033 and Beyond: North Essex Authorities' Shared Strategic Section 1:
    - > Paragraph 5.8 Opportunities have been identified for Tendring to develop potential future strengths in offshore wind and the care and assisted living sector.
  - > Tendring District Local Plan 2013-2033 and Beyond: Section 2:
    - > 6.5.8 The Aspinall Verdi Employment Land Review (2016) highlights that there is the need to promote Tendring District as a vibrant place to live, work and visit, and to promote the area to support sustainable economic growth. Key opportunity sectors in the District include Offshore Wind and Care and Assisted Living. Other sectors, including agri-tech, composite, engineering, manufacturing, hospitality and retail all have the potential to contribute to growth in jobs across the District; and
    - > 7.9.2 Tendring District supports renewable energy generation in terms of wind energy, solar energy and biomass installations.



## LEGISLATION

- 11.4.10 The Climate Change Act 2008 commits the UK to a net reduction in greenhouse gas emissions against the 1990 baseline by 2050. This is implemented through a system of carbon budgets, which are set by the Government for a period of five years each that will run until 2032 to restrict the level of emissions they legally emit within each five-year period. More recently, the Climate Change Act 2008 (2050 Target Amendment) Order 2019 amended the Climate Change Act 2008, to enshrine in law a more challenging commitment that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline.
- 11.4.11 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) sets out the following requirement which is relevant in relation to how climate change is assessed for Nationally Significant Infrastructure Projects:
- > Schedule 4 Regulation 14(2) Information for Inclusion in Environmental Impact Assessment Statements:
- 11.4.12 A description of the likely significant effects of the development on the environment resulting from, inter alia: (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change.

## CONSULTATION AND SCOPING

- 11.4.13 Consultation on the scope of the EIA took place following the publication of the VE Scoping Report (Five Estuaries Offshore Wind Farm (OWF), September 2021).
- 11.4.14 A Scoping Opinion for VE was sought from the Secretary of State (SoS) which included consultation responses from PINS, Essex County Council, North East Essex Clinical Commissioning Group and UK Health Security Agency and the Office for Health Improvement and Disparities (OHID) (formerly Public Health England) which are relevant to this chapter. The Scoping Opinion was received in November 2021. Table 11.4 provides a summary of relevant consultation responses in relation to human health, major disasters and climate change respectively.



**Table 11.4: Climate change consultation summary**

<b>Date and Consultation Phase/Type</b>	<b>Consultation and Key Issues Raised</b>	<b>PEIR Chapter Where Comment Addressed</b>
<p>PINS, Scoping Opinion, November 2021</p>	<p><b>Climate Change</b></p> <p>State that the ES should include a description and assessment (where relevant) of the likely significant effects the Proposed Development has on climate (for example having regard to the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change. Where relevant, the ES should describe and assess the adaptive capacity that has been incorporated into the design of the Proposed Development. This may include, for example, alternative measures such as changes in the use of materials or construction and design techniques that will be more resilient to risks from climate change.</p>	<p>The effects on climate change from impacts resulting from VE have been assessed in Volume 3, Chapter 10: Air Quality and Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk. See Impacts Scoped In and Addressed at PEIR for further details.</p>
<p>Essex County Council, Scoping Opinion, November 2021</p>	<p><b>Climate Change</b></p> <p>States that ES should include a description and assessment (where relevant) of the likely significant effects the Proposed Development has on climate (for example having regard to the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project during its construction phase, and operational phase, to climate change. Where relevant, the ES should describe and assess the adaptive capacity that has been incorporated into the design of VE.</p> <p>Express concern that this topic is not commented on in any detail in a specific chapter.</p>	<p>Each technical PEIR chapter, where relevant, provides an assessment of the effects of VE in relation to climate change and the conclusions are summarised in this chapter.</p> <p>Further information in relation to climate change will be included in the ES which will accompany the DCO application when more detailed project information will be available.</p>



## IMPACTS SCOPED OUT

11.4.15 The following impacts have been scoped out of assessment in relation to climate change:

- > Transboundary air quality impacts – on the basis that impacts will be localised within Essex County Council and Tendring District Council administrative areas and not experienced across international boundaries; and
- > improvement of air quality relative to alternative fuel sources such as coal and gas power stations.

## IMPACTS SCOPED IN AND ADDRESSED AT PEIR

11.4.16 For each of the impacts considered below, the study area is described in the relevant technical chapters.

11.4.17 As outlined in Statutory and Policy Context, there is a clear policy driver to develop competitive, offshore renewable energy to bring about decarbonisation of the UK economy to meet the ambitious 2030 targets. The renewable electricity VE is anticipated to generate would contribute to this. Nonetheless, the following sections describe the potential impacts which have been assessed in relation to climate change and provides information on the chapters of the PEIR where they have been assessed.

## IMPACTS OF THE PROJECT ON CLIMATE CHANGE

11.4.18 The significant positive impact of avoiding carbon emissions through generation of electricity by offshore wind is referred to in the introduction to the chapter. The construction, operation, maintenance and decommissioning does though give rise to carbon emissions associated with:

- > Construction methods and materials (concrete, wind turbine generator components – blades, towers etc), transport (of materials, components and workers) and associated use of hydrocarbon fuels;
- > Processing of raw materials and manufacturing;
- > Operation and Maintenance – similar aspects as construction; and
- > Decommissioning – similar aspects as construction.

11.4.19 The potential impacts related to the above aspects of the project will be given more detailed consideration when the project design is further refined prior to the application for a Development Consent Order (DCO).

## VULNERABILITY OF THE PROJECT TO CLIMATE CHANGE

11.4.20 The potential areas of project vulnerability relate mainly to flood risk associated with sea-level rise, surface water and groundwater. In this context the potential vulnerable assets onshore could be as follows:

- > Onshore Substation;
- > Temporary construction compounds;
- > Construction activities;
- > Operation and maintenance activities; and
- > Decommissioning activities.



## AIR QUALITY EFFECTS ON CLIMATE CHANGE

- 11.4.21 The effects on climate change from air quality impacts have been assessed in Volume 3, Chapter 10: Air Quality, Section 10.14. It is expected that the project will contribute to local air emissions during construction. During operation however, the low carbon/ low emissions nature of offshore wind energy generation is expected to help improve regional and global air quality by displacing existing combustion forms of energy generation.
- 11.4.22 Air quality effects on climate change associated with VE itself are considered to be negligible. There is a potential for localised short-term effects during construction. This will be temporary in nature and will be minimised through construction best practice.

## CLIMATE CHANGE EFFECTS ON TIDAL, FLUVIAL & SURFACE WATER FLOOD RISK

- 11.4.23 The effects of VE on tidal, fluvial and surface water flood risk taking into account climate change have been assessed in Volume 5, Annex 6.1: Export cable corridor flood risk assessment. A summary of the results is provided in Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk.
- 11.4.24 The risk of tidal flooding to the land behind the defences has been considered and assessed for the construction phase and the defences are considered adequate to provide protection to this land for this phase of the development. During operation the installed cables would be buried underground and are not considered to be vulnerable to flooding.
- 11.4.25 Increased peak river flow as a result of climate change would potentially increase the frequency, extent or depth of flooding associated with fluvial flood events. Based on an assessment of the location and topography of the onshore ECC and Substation Search Areas, the extent and shape of the present-day fluvial floodplain and the distance of the onshore ECC and Substation Search Areas to fluvial watercourses, it is considered unlikely that fluvial flood risk would increase over the lifetime of VE.
- 11.4.26 The hydrology, hydrogeology and flood risk assessment (FRA) has taken account of recommended climate change allowance for peak rainfall intensity set for the Combined Essex Management Catchment (DEFRA 2022) and all likely effects of the VE are Not Significant taking account of this guidance.
- 11.4.27 In terms of Shoreline Management, The Shoreline Management Plan 8 (SMP, Essex County Council) outlines the strategy for managing flood and erosion risk along the coastline, over short, medium and long-term periods. Further information is provided in Volume 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk, Section 6.7.

## CONCLUSIONS

- 11.4.28 The above section provides a summary of consultation responses received in relation to climate change. The relevant chapters of the PEIR which contain assessment information in relation to these topics are also set out.





11.4.29 The overall conclusion is that after the relevant mitigation measures are applied, VE would not cause any significant adverse effect in relation to climate change. Further, it is expected that VE will contribute to an overall reduction in greenhouse gas emissions regionally and globally, by displacing existing sources of fossil fuel energy generation. However, a full assessment of climate change impacts on the project, adaptation measures, and the project's impact on climate change will be undertaken as the design is developed at the ES stage for DCO application.

#### NEXT STEPS

11.4.30 As the project design is refined and more detailed information becomes available, the impact assessments conducted at PEIR will be updated, along with any resulting need to update proposed mitigation. These updates will be captured in the ES that will accompany the DCO application.

11.4.31 Refining the project design for DCO application will allow a more detailed assessment of the impacts of the project on climate change and vulnerability of the project to climate change. Further assessment of this will include the following:

- > A whole life carbon assessment showing construction, operational and decommissioning carbon impacts and an explanation of the steps taken to drive down the climate change impacts at each of those stages;
- > A description of Climate Change Adaptation measures that have been built in to the project, including elements such as planting strategies, drainage designs etc;
- > A description of key mitigation and how it will be delivered e.g., using measures in relevant management plans; and
- > An FRA for the chosen OnSS will be developed for the ES to accompany the PEIR.



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