



# White Cross Offshore Windfarm Environmental Statement

**Chapter 19: Offshore Seascape,  
Landscape and Visual Amenity**



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## Glossary of Acronyms

Acronym	Definition
<b>AfL</b>	Agreement for Lease
<b>AOD</b>	Above Ordnance Datum
<b>AONB</b>	Area of Outstanding Natural Beauty
<b>AoS</b>	Area of Search
<b>BEIS</b>	Department for Business, Energy, and Industrial Strategy
<b>CAA</b>	Civil Aviation Authority
<b>CPRE</b>	Campaign to Protect Rural England
<b>CAONB</b>	Cornwall Area of Outstanding Natural Beauty
<b>CEMP</b>	Construction Environmental Management Plan
<b>CEA</b>	Cumulative Effect Assessment
<b>DLCA</b>	Devon Landscape Character Area
<b>Defra</b>	Department for Environment, Food and Rural Affairs
<b>EIA</b>	Environmental Impact Assessment
<b>ES</b>	Environmental Statement
<b>GLVIA3</b>	Guidelines for Landscape and Visual Impact Assessment Version 3.
<b>GIS</b>	Geographical Information System
<b>GPS</b>	Global Positioning System
<b>HFoV</b>	Horizontal Field of View
<b>IALA</b>	International Association of Marine Aids to Navigation and Lighthouse Authorities
<b>IEMA</b>	Institute of Environmental Management and Assessment
<b>IPC</b>	Infrastructure Planning Commission
<b>JNCC</b>	Joint Nature Conservancy Council
<b>km</b>	Kilometre
<b>LCA</b>	Landscape Character Area
<b>LCT</b>	Landscape Character Type
<b>LDR</b>	Long Distance Route
<b>m</b>	Metre
<b>MCA</b>	Marine Character Area
<b>MCZ</b>	Marine Conservation Zone
<b>MHWS</b>	Mean High Water Springs
<b>MSL</b>	Mean Sea Level
<b>MMO</b>	Marine Management Organisation
<b>MoD</b>	Ministry of Defence
<b>MPS</b>	Marine Policy Statement
<b>MW</b>	Megawatts
<b>NE</b>	Natural England

<b>Acronym</b>	<b>Definition</b>
<b>nm</b>	Nautical Mile
<b>NCA</b> s	National Character Areas
<b>NLCA</b>	National Landscape Character Area
<b>NPS</b>	National Policy Statement
<b>NP</b>	National Park
<b>NPPG</b>	The National Planning Practice Guidance
<b>NRW</b>	Natural Resources Wales
<b>NDESCA</b>	North Devon and Exmoor Seascape Character Assessment
<b>NDCAONB</b>	North Devon Coast Area of Outstanding Natural Beauty
<b>O&amp;M</b>	Operation and Maintenance
<b>OSP</b>	Offshore Substation Platform
<b>OFTO</b>	Offshore Transmission Owner (OFTO)
<b>ONS</b>	Office for National Statistics
<b>OS</b>	Ordnance Survey
<b>OTNR</b>	Offshore Transmission Network Review
<b>OWL</b>	Offshore Wind Ltd
<b>PCNP</b>	Pembrokeshire Coast National Park
<b>PCP</b>	Pembrokeshire Coast Path
<b>PINS</b>	Planning Inspectorate
<b>PPG</b>	Planning Practice Guidance
<b>SCA</b>	Seascape Character Area
<b>SCT</b>	Seascape Character Type
<b>SWCP</b>	South West Coast Path
<b>SLVIA</b>	Seascape, Landscape and Visual Impact Assessment
<b>SSSI</b>	Site of Special Scientific Interest
<b>TJB</b>	Transition Joint Bay
<b>WCS</b>	Worst Case Scenario
<b>WTG</b>	Wind Turbine Generator
<b>ZoI</b>	Zone of Influence
<b>ZTV</b>	Zone of Theoretical Visibility

## Glossary of Terminology

Defined Term	Description
<b>Agreement for Lease</b>	An agreement for lease (AfL) is a non-binding agreement between a landlord and prospective tenant to grant and/or to accept a lease in the future. The AfL only gives the option to investigate a site for potential development. There is no obligation on the developer to execute a lease if they do not wish to.
<b>Applicant</b>	Offshore Wind Limited
<b>Cumulative effects</b>	The effect of the Project taken together with similar effects from a number of different projects, on the same single receptor/resource. Cumulative impacts are those that result from changes caused by other past, present, or reasonably foreseeable actions together with the Project.
<b>Department for Business, Energy, and Industrial Strategy</b>	Government department that is responsible for business, industrial strategy, science and innovation and energy and climate change policy and consent under Section 36 of the Electricity Act.
<b>Design Envelope</b>	A description of the range of possible elements that make up the Project design options under consideration. This envelope is used to define the Project for Environmental Impact Assessment purposes when the exact parameters are not yet known.
<b>Development Area</b>	The area comprising the Onshore Development Area and the Offshore Development Area
<b>Engineer, Procure, Construct and Install</b>	A common form of contracting for offshore construction. The contractor takes responsibility for a wide scope and delivers via own and subcontract resources.
<b>Environmental impact assessment</b>	Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation and decommissioning.
<b>Export Cable Corridor</b>	The area in which the export cables will be laid, from the Offshore Substation Platform to the Onshore Substation comprising both the Offshore Export Cable Corridor and Onshore Export Cable Corridor.
<b>Front end engineering and design</b>	Front-end engineering and design (FEED) studies address areas of windfarm system design and develop the concept of the windfarm in advance of procurement, contracting and construction.
<b>High Voltage Alternating Current</b>	High voltage alternating current is the bulk transmission of electricity by alternating current (AC), whereby the flow of electric charge periodically reverses direction.
<b>High Voltage Direct Current</b>	High voltage direct current is the bulk transmission of electricity by direct current (DC), whereby the flow of electric charge is in one direction.
<b>In-combination effects</b>	In-combination effects are those effects that may arise from the development proposed in combination with other plans and projects proposed/consented but not yet built and operational.

Defined Term	Description
<b>Inter-array cables</b>	Cables which link the wind turbines to each other and the Offshore Substation Platform
<b>Jointing bay</b>	Underground structures constructed at regular intervals along the Onshore Export Cable Corridor to join sections of cable and facilitate installation of the cables into the buried ducts
<b>Landfall</b>	Where the offshore export cables come ashore
<b>Link boxes</b>	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links
<b>Mean high water springs</b>	The average tidal height throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest.
<b>Mean low water springs</b>	The average tidal height throughout a year of two successive low waters during those periods of 24 hours when the range of the tide is at its greatest.
<b>Mean sea level</b>	The average tidal height over a long period of time.
<b>Mitigation</b>	<p>Mitigation measures have been proposed where the assessment identifies that an aspect of the development is likely to give rise to significant environmental impacts and discussed with the relevant authorities and stakeholders in order to avoid, prevent or reduce impacts to acceptable levels.</p> <p>For the purposes of the EIA, two types of mitigation are defined:</p> <ul style="list-style-type: none"> <li>• Embedded mitigation: consisting of mitigation measures that are identified and adopted as part of the evolution of the project design, and form part of the project design that is assessed in the EIA</li> <li>• Additional mitigation: consisting of mitigation measures that are identified during the EIA process specifically to reduce or eliminate any predicted significant impacts. Additional mitigation is therefore subsequently adopted by OWL as the EIA process progresses.</li> </ul>
<b>Offshore Development Area</b>	The Windfarm Site and Offshore Export Cable Corridor to Landfall
<b>Offshore export cables</b>	The cables which would bring electricity from the Offshore Substation Platform to the Landfall
<b>Offshore Export Cable Corridor</b>	The proposed offshore area in which the export cables will be laid, from the perimeter of the Windfarm Site to Landfall
<b>Offshore infrastructure</b>	All of the offshore infrastructure including wind turbines, Offshore Substation Platform(s) and all cable types



Defined Term	Description
<b>Offshore Substation Platform(s)</b>	A fixed structure located within the Windfarm Site, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore
<b>Offshore Transmission Owner</b>	An OFTO, appointed in UK by Ofgem (Office of Gas and Electricity Markets), has ownership and responsibility for the transmission assets of an offshore windfarm.
<b>Onshore Development Area</b>	The onshore area above MHWS including the underground onshore export cables connecting to the Onshore Substation
<b>Onshore Export Cables</b>	The cables which bring electricity from Landfall to the Onshore Substation
<b>Onshore Export Cable Corridor</b>	The proposed onshore area in which the export cables will be laid, from Landfall to the Onshore Substation
<b>Onshore infrastructure</b>	The combined name for all infrastructure associated with the Project from Landfall to grid connection
<b>Onshore Substation</b>	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of the electrical transformers
<b>Platform link cable</b>	This is an electrical cable which links one or more offshore platforms
<b>Safety zones</b>	An area around a structure or vessel which should be avoided
<b>Service operation vessel</b>	A vessel that provides accommodation, workshops and equipment for the transfer of personnel to turbine during OMS. Vessels in service today are typically up to 85m long with accommodation for about 60 people.
<b>Scour protection</b>	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water
<b>Transition bay</b>	Underground structures at the Landfall that house the joints between the offshore export cables and the onshore export cables
<b>White Cross Offshore Windfarm</b>	Up to 100MW capacity offshore windfarm including associated onshore and offshore infrastructure
<b>Windfarm Site</b>	The area within which the wind turbines, Offshore Substation Platform and inter-array cables will be present
<b>Works completion date</b>	Date at which construction works are deemed to be complete and the windfarm is handed to the operations team. In reality, this may take place over a period of time.



## 19. Offshore Seascape, Landscape and Visual Impact Assessment

### 19.1 Introduction

1. This seascape, landscape, and visual impact assessment (SLVIA) chapter of the Environmental Statement (ES) presents the effects of the White Cross Offshore Windfarm Project (the Offshore Project) on offshore seascape, landscape, and visual amenity. Specifically, this chapter considers the potential impacts of the Offshore Project seaward of Mean High-Water Springs (MHWS) during its construction, operation and maintenance, and decommissioning phases.
2. The Offshore Export Cables will be constructed along the seabed and would therefore not be visible during operation and maintenance. During the construction and decommissioning of the Offshore Export Cables the only effect on the seascape, landscape and visual amenity would be the visibility of a small number of vessels out at sea, which are a common occurrence as part of the baseline character and views. As set out in the Scoping Report, it is considered that, even taking into account the designated status of the landscapes along the coastline closest to the Offshore Export Cable Corridor and at the landfall (**Figure 19.1**) such temporary, short duration effects are not likely to give rise to significant effects. Therefore, hereafter, the SLVIA assesses the effects of the construction, operation and maintenance, and decommissioning of only the Windfarm aspect of the Offshore Project, as set out in **Section 19.3.7**, and **Table 19.10**.
3. The ES has been finalised with due consideration of pre-application consultation to date (see **Chapter 7: Consultation**). The ES will accompany the application to the Marine Management Organisation (MMO) on behalf of the Secretary of State for Business for The Department for Business, Energy, and Industrial Strategy (BEIS) for Section 36 Consent and relevant Marine Licences under Marine and Coastal Access Act (2009).
4. This ES chapter:
  - Presents the existing environmental baseline established from desktop studies, field work and consultation
  - Presents the potential environmental effects on offshore seascape, landscape, and visual amenity arising from the Offshore Project, based on the information gathered and the analysis and assessments undertaken in the field
  - Identifies any assumptions and limitations encountered in compiling the environmental information

- Highlights any necessary monitoring and/or mitigation measures which could prevent, minimise, reduce, or offset the possible environmental effects identified in the EIA process.

## 19.2 Policy, Legislation and Guidance

5. **Chapter 3: Policy and Legislative Context** describes the wider policy and legislative context for the Offshore Project. The principal policy and legislation used to inform the assessment of potential impacts on offshore seascape, landscape, and visual amenity for the Offshore Project are outlined in this section.

### 19.2.1 Legislation

6. The legislation relevant to this SLVIA is set out in **Table 19.1**, which relates to the presence of a National Park (NP) and Areas of Outstanding Natural Beauty (AONB) located within the study area.

*Table 19.1 Legislation Relevant to SLVIA*

Legislation	Key provisions	How and where this is considered in the ES
<b>National Parks and Access to the Countryside Act 1949</b>	Provided the framework for the establishment of National Parks and AONBs and sets out their purpose of conserving and enhancing natural beauty, wildlife, and cultural heritage of National Parks and of promoting opportunities for the understanding and enjoyment of the special qualities of those Parks by the public.	The effect on the Pembrokeshire Coast National Park (PCNP) is assessed in <b>Section 19.13</b> .
<b>Environment Act 1995</b>	Sets out the duty of certain bodies to have regard to the purposes for which National Parks are designated (to preserve and enhance the natural beauty of the Park areas and for the purpose of promoting their enjoyment by the public) that they shall seek to foster the economic and social well-being of local communities within the National Park by cooperating with local authorities. If it appears there is a conflict between those	The effect on the PCNP is assessed in <b>Section 19.13</b> .

Legislation	Key provisions	How and where this is considered in the ES
	<p>purposes then the relevant authority shall attach greater weight to the purpose of conserving and enhancing the natural beauty, wildlife, and cultural heritage of the area of the National Park.</p>	
<p><b>Countryside and Rights of Way Act 2000 (CRoW)</b></p>	<p>Introduces provisions to help secure the better management and protection of AONBs. It requires the preparation and publication of a management plan for every AONB. It also places a duty on 'relevant authorities' when exercising or performing any function in relation to, or so as to affect, land in an AONB, to have regard to the purpose of conserving and enhancing the natural beauty of the AONB.</p>	<p>The effect on the North Devon Coast Area of Outstanding Natural Beauty (NDCAONB) and Cornwall Area of Outstanding Natural Beauty (CAONB) is assessed in <b>Section 19.12</b>.</p>
<p><b>The Marine and Coastal Access Act 2009</b></p>	<p>Provides the framework for marine planning in Wales and across the UK. It sets Welsh Ministers as the Marine Plan authority for the Welsh Inshore and Offshore regions. When considering the impact of an activity it states that the marine plan authority (MPA) 'should take into account existing character and quality, how highly it is valued and its capacity to accommodate change...' (2.6.5.3).</p>	<p>These aspects of the seascape, landscape and visual amenity are considered in the assessment of the impacts in <b>Section 19.7</b>.</p>

### 19.2.2 National Policy Statement

- The specific assessment requirements for SLVIA are set out within the overarching National Policy Statement (NPS) for Energy (EN-1), NPS for Renewable Energy Infrastructure (EN-3), and NPS for Electricity Networks Infrastructure (EN-5) and summarised in **Table 19.2**. This includes the Draft Overarching NPS EN-1, EN-3, and EN-5. Draft policies are included in the table where they differ from extant policy.

8. NPSs are statutory documents which set out the government’s policy on specific types of Nationally Significant Infrastructure Projects (NSIPs) and are published in accordance with the Planning Act 2008. Although the Offshore Project is not an NSIP, it is recognised that due to its size of up to 100MW and its location in English waters, certain NPS are considered relevant to the Offshore Project and decision-making and are referred to in this ES.

*Table 19.2 Summary of NPS EN-1, EN-3, and EN-5 provisions relevant to SLVIA*

Summary	How and where this is considered in the ES
<b>NPS EN-1</b>	
<p>“when considering cumulative effects, the ES should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence).” – <b>EN-1 Paragraph 4.2.5</b></p>	<p>The cumulative effect of the Offshore Project is considered in <b>Section 19.14</b> of this Chapter.</p>
<p>“high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object – be it a building or other type of infrastructure – including fitness for purpose and sustainability, is equally important. Applying ‘good design’ to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.” – <b>EN-1 Paragraph 4.2.5</b></p>	<p>Opportunities for enhancement of the quality of an area through the ‘Good Design’ of an offshore wind farm are limited due to the technical and economic requirements associated with producing renewable energy as well as other environmental factors.</p> <p>The need to retain flexibility of WTG numbers, size, and location within the Windfarm Site through the planning stages and assessment of a Realistic worst-case scenario (a necessary part of the process that is recognised through the NPS at paragraphs 4.2.5-4.2.6) also reduces opportunities for good design as part of the embedded mitigation.</p>
<p>“The applicant should carry out a landscape and visual assessment and report it in the ES. (See Section 4.2) A number of guides have been produced to assist in addressing landscape issues<sup>125</sup></p>	<p>‘The Guidelines for Landscape and Visual Impact Assessment’ (GLVIA) (2002, 2nd edition) has been superseded by GLVIA Version 3.</p>

Summary	How and where this is considered in the ES
<p>...<sup>125</sup>Landscape Institute and Institute of Environmental Management and Assessment (2002, 2nd edition): Guidelines for Landscape and Visual Impact Assessment; and Land Use Consultants (2002): Landscape Character Assessment – Guidance for England and Scotland.” - <b>EN-1 Paragraph 5.9.5</b></p>	<p>Landscape Character Assessment – Guidance for England and Scotland has been superseded by Natural England’s ‘An Approach to Landscape Character Assessment’.</p> <p>This SLVIA has been prepared following the updated versions of these documents which are referred to in <b>Section 19.2.4</b>.</p>
<p>“The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant’s assessment should also take account of any relevant policies based on these assessments in local development documents in England.” - <b>EN-1 Paragraph 5.9.5</b></p>	<p>Published landscape character assessments and associated studies for the study area are referred to in <b>Section 19.4</b> of the SLVIA.</p>
<p>“The applicants assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character.” - <b>EN-1 Paragraph 5.9.6</b></p>	<p>The effect on landscape character during construction and operation and maintenance are assessed in <b>Section 19.11</b> of the SLVIA.</p>
<p>“The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity.” - <b>EN-1 Paragraph 5.9.7</b></p>	<p>The visual effects of the Offshore Project during construction and operation and maintenance, including night-time visual effects, are considered in <b>Section 19.7.1</b> and <b>Section 19.8</b> the SLVIA.</p>
<p>“Landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape. Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant</p>	<p>The quality, value, and capacity of the landscape to accommodate change are considerations of the landscape assessment presented in <b>Sections 19.11, 19.12, and 19.13</b> where they inform the assessment of effects of the Offshore Project on the landscape. The design of the Offshore Project has considered and addressed the potential impact on seascape, landscape, and visual receptors, in order to minimise harm by mitigation. Adverse landscape and visual</p>

Summary	How and where this is considered in the ES
<p>constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate." - <b>EN-1 Paragraph 5.9.7</b></p>	<p>effects are minimised through embedded environmental measures (as described in <b>Section 19.3.4</b>).</p>
<p>"Landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape." - <b>EN-1 Paragraph 5.9.8</b></p>	<p>The quality, value, and capacity of the landscape to accommodate change are considerations of the landscape assessment set out in <b>Sections 19.11, 19.12, and 19.13</b> where they inform the assessment of effects of the Offshore Project on the landscape.</p>
<p>"Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate." - <b>EN-1 Paragraph 5.9.8</b></p>	<p>The siting and design of the Offshore Project has considered and addressed the potential effects on landscape in order to 'minimise harm' by mitigation of seascape and landscape effects as presented in <b>Section 19.3.4</b> of the SLVIA and <b>Chapter 5: Project Description</b>.</p>
<p>"The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints." - <b>EN-1 Paragraph 5.9.12</b></p>	<p>The potential for the Offshore Project to effect the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), and the Cornwall Area of Outstanding Natural Beauty (CAONB) has been considered in <b>Section 19.12 and 19.13</b> of the SLVIA.</p>
<p>"The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent." - <b>EN-1 Paragraph 5.9.13</b></p>	
<p>"Outside nationally designated areas, there are local landscapes that may be highly valued</p>	<p>Effects on landscape character are assessed in respect landscape receptors in <b>Sections</b></p>

Summary	How and where this is considered in the ES
<p>locally and protected by local designation. Where a local development document in England has policies based on landscape character assessment, these should be paid particular attention. However, local landscape designations should not be used in themselves to refuse consent, as this may unduly restrict acceptable development." - <b>EN-1 Paragraph 5.9.14</b></p>	<p><b>19.11, 19.12, and 19.13</b> where they inform the assessment of effects of the Offshore Project on the landscape.</p>
<p>"The scale of such projects means that they will often be visible within many miles of the site of the proposed infrastructure...The IPC [now the relevant Secretary of State] should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project." - <b>EN-1 Paragraph 5.9.15</b></p>	<p>Effects on landscape character are assessed in respect landscape receptors in <b>Sections 19.11, 19.12, and 19.13</b> where they inform the assessment of effects of the Offshore Project on the landscape.</p>
<p>"In reaching a judgment, the IPC [now the relevant Secretary of State] should consider whether any adverse impact is temporary, such as during construction, and/ or whether any adverse impact on the landscape will be capable of being reversed in a timescale that the IPC considers reasonable." - <b>EN-1 Paragraph 5.9.16</b></p>	<p>Where the impacts of the Offshore Project are temporary or reversible this is set out in <b>Section 19.7 to Section 19.14</b></p>
<p>"The IPC [now the Planning Inspectorate and the Secretary of State] should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation." - <b>EN-1 Paragraph 5.9.17</b></p>	<p><b>Chapter 4: Site Selection and Assessment of Alternatives</b> of the ES sets out the iterative process that has influenced the design of the Offshore Project.</p>
<p>"All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. The IPC [now the relevant Secretary of State] will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area,</p>	<p>The impacts on visual receptors are assessed in <b>Section 19.7.1 and Section 19.8.</b></p>



Summary	How and where this is considered in the ES
<p>outweigh the benefits of the project." - <b>EN-1 Paragraph 5.9.18</b></p>	
<p>"Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function - for example, the electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in function. In these circumstances, the IPC may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function." - <b>EN-1 Paragraph 5.9.21</b></p>	<p>The balance between mitigation of visual and landscape effects and significant operational constraint / reduction in function is considered in <b>Section 19.3.4</b>.</p>
<p>"Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration." - <b>EN-1 Paragraph 5.9.22</b></p>	<p>Adverse landscape and visual effects are minimised through embedded environmental measures as presented in <b>Section 19.3.4</b> of the SLVIA. The role of the site selection process in minimising landscape and visual effects is presented in <b>Chapter 4: Site Selection and Assessment of Alternatives</b>. Choice of colours and materials is set out in <b>Chapter 5: Project Description</b>.</p>
<b>NPS EN-3</b>	
<p>"Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology." - <b>EN-3 Paragraph 2.4.2</b></p>	<p>The Offshore Project has been designed to address potential seascape, landscape, and visual effects. Embedded environmental measures that address seascape, landscape and visual effects are presented in <b>Section 19.3.4</b> of the SLVIA.</p>
<p>"Where a proposed offshore wind farm will be visible from the shore, an SVIA should be undertaken which is proportionate to the scale of the potential impacts. Impact on seascape should be addressed in addition to the landscape and visual effects discussed in - EN-1" - <b>EN-3 Paragraph 2.6.202</b></p>	<p>The visibility of the Offshore Project from onshore locations is assessed in <b>Sections 19.7.1</b> and <b>19.8</b> of the SLVIA. Impacts on seascape are also addressed in <b>Section 19.9</b> and <b>19.10</b>.</p>



Summary	How and where this is considered in the ES
<p>“Where necessary, assessment of the seascape should include an assessment of three principal considerations on the likely effect of offshore wind farms on the coast:</p> <ul style="list-style-type: none"> <li>• limit of visual perception from the coast;</li> <li>• individual characteristics of the coast which affect its capacity to absorb a development; and</li> <li>• how people perceive and interact with the seascape.” - <b>EN-3 Paragraph 2.6.203</b></li> </ul>	<p>The visibility of the Offshore Project from onshore locations is assessed in <b>Sections 19.7.1 and 19.8</b> of the SLVIA. Impacts on seascape are also addressed in <b>Section 19.9 and 19.10</b>.</p>
<p>“As part of the SVIA, photomontages are likely to be required. Viewpoints to be used for the SVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage” - <b>EN-3 Paragraph 2.6.204</b></p>	<p>Viewpoints were agreed in consultation with statutory consultees as described in <b>Section 19.3.8</b>. Photomontages are included in <b>Figure 19.25, Figure 19.29, Figure 19.31, and Figure 19.33</b>.</p>
<p>“Magnitude of impact to both the identified seascape receptors (such as seascape units and designated landscapes) and visual receptors (such as viewpoints) should be assessed in accordance with the standard methodology for SVIA.” - <b>EN-3 Paragraph 2.6.205</b></p>	<p>The methodology for the assessment of magnitude of impact to seascape receptors, designated landscapes and visual receptors is set out in <b>Appendix 19.A</b>.</p>
<p>“Where appropriate, cumulative SVIA should be undertaken in accordance with the policy on cumulative assessment outlined in Section 4.2 of EN-1.” - <b>EN-3 Paragraph 2.6.206</b></p>	<p>Potential cumulative impacts are considered in <b>Section 19.14</b></p>
<p>“Where a proposed offshore wind farm is within sight of the coast, there may be adverse effects. The IPC should not refuse to grant consent for a development solely on the ground of an adverse effect on the seascape or visual amenity unless: it considers that an alternative layout within the identified site could be reasonably proposed which would minimise any harm, taking into account other constraints that the applicant has faced such as ecological effects, while maintaining safety or economic viability of the application; or taking account of the sensitivity of the receptor(s) as set out in EN-1 paragraph 5.9.18, the harmful effects are considered to</p>	<p><b>Chapter 4: Site Selection and Assessment of Alternatives</b> sets out the alternatives that have been considered. The SLVIA is based on a Rochdale Envelope Approach, which has defined a realistic worst-case scenario for assessment, as agreed through stakeholder consultation. The Rochdale Envelope Approach and the acknowledged need to maintain flexibility until the detailed design stage, post consent, does not lend itself to further detailed consideration of WTG layout within the Windfarm Sites within the SLVIA.</p>

Summary	How and where this is considered in the ES
<p>outweigh the benefits of the proposed scheme." - <b>EN-3 Paragraph 2.6.208</b></p>	<p><b>Section 19.3.4</b> of this Chapter sets out the embedded mitigation introduced to address effects on sensitive receptors.</p>
<p>"Where adverse effects are anticipated either during the construction or operational phases, in coming to a judgement, the IPC should take into account the extent to which the effects are temporary or reversible." - <b>EN-3 Paragraph 2.6.209</b></p>	<p>The assessment of receptors in <b>Section 19.5</b> and <b>19.7</b> onwards sets out the extent to which the identified effects are temporary or reversible.</p>
<b>NPS EN-1 (Draft, September 2021)</b>	
<p>"Applicants need to consider the importance of 'good design' criteria. Such consideration of 'good design' criteria should be demonstrated when submitting applications for energy infrastructure projects to the Secretary of State. To ensure good design is embedded within the project development, a project board level design champion could be appointed and a representative design panel used to maximise the value provided by the infrastructure. Design principles<sup>53</sup> should be established from the outset of the project to guide the development from conception to operation." - <b>EN-1 Draft Paragraph 4.1.10</b></p>	<p>The design of White Cross Offshore Windfarm cannot be fixed at this time. This is recognised by NPS EN-1 Paragraph 4.2.5 and NPS EN-3 Paragraphs 2.23.6 and 2.23.7.</p> <p>The approach taken to the assessment and 'worst case' scenario in the SLVIA is set out in <b>Section 19.3.3</b>.</p>
<p>"In some instances, it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case." - <b>EN-1 Draft Paragraph 4.2.5</b></p> <p>"Where some details are still to be finalised, the ES should set out to the best of the applicant's knowledge, what the likely worst-case environmental, social and economic effects of the proposed development may be and assess, on that basis, to ensure that the impacts of the project as it may be constructed have been</p>	<p><b>Chapter 5: Project Description</b> sets out the Project Design Envelope, or 'Rochdale Envelope' and outlines which areas are and are not finally defined in detail.</p> <p><b>Section 19.3.2</b> sets out the uncertainty and difficulty arising from this, and <b>Section 19.3.3</b> sets out the realistic worst-case scenario that has been defined to ensure that the worst-case seascape, landscape, and visual effects are assessed.</p>

Summary	How and where this is considered in the ES
<p>properly assessed.” - <b>EN-1 Draft Paragraph 4.2.6</b></p>	
<p>“The visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object - be it a building or other type of infrastructure - including fitness for purpose and sustainability, is equally important. Applying ‘good design’ to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.” - <b>EN-1 Draft Paragraph 4.6.1</b></p>	<p>Opportunities for enhancement of the quality of an area through the ‘Good Design’ of an offshore wind farm are limited due to the technical and economic requirements associated with producing renewable energy as well as other environmental factors. The need to retain flexibility of Wind Turbine Generator (WTG) numbers, size, and location within the Windfarm Site through the planning stages and assessment of a Realistic worst-case scenario (a necessary part of the process that is recognised through the NPS at paragraphs 4.2.5-4.2.6) also reduces opportunities for good design as part of the embedded mitigation.</p>
<p>“Good design is also a means by which many policy objectives in the NPS can be met... Given the benefits of ‘good design’ in mitigating the adverse impacts of a project, applicants should consider how ‘good design’ can be applied to a project during the early stages of the project lifecycle. Design principles should be established from the outset of the project to guide the development from conception to operation.” - <b>EN-1 Draft Paragraph 4.6.2</b></p>	<p><b>Chapter 4: Site Selection and Assessment of Alternatives</b> sets out the iterative process that has influenced the design of the Proposed Development. Opportunities for enhancement of the quality of an area through the ‘Good Design’ of an offshore wind farm are limited due to the technical and economic requirements associated with producing renewable energy as well as other environmental factors. The need to retain flexibility of WTG numbers, size, and location within the Windfarm Site through the planning stages and assessment of a Realistic worst-case scenario (WCS) (a necessary part of the process that is recognised through the NPS at paragraphs 4.2.5-4.2.6) also reduces opportunities for good design as part of the embedded mitigation. <b>Section 19.3.4</b> of this Chapter sets out the embedded mitigation that is included in the</p>

Summary	How and where this is considered in the ES
	Proposed Development and <b>Section 19.7</b> includes an assessment of the visual impacts on the landscape or seascape.
<p>"The Secretary of State should be satisfied that the applicant has taken into account both functionality (including fitness for purpose and sustainability) and aesthetics (including its contribution to the quality of the area in which it would be located, any potential amenity benefits, and visual impacts on the landscape or seascape) as far as possible." - <b>EN-1 Draft Paragraph 4.6.3</b></p>	<p><b>Section 19.3.4</b> of this Chapter sets out the embedded mitigation that is included in the Proposed Development and <b>Section 19.7</b> onwards assesses the visual impacts on the landscape or seascape.</p>
<p>"...the Secretary of State should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy. Many of the wider impacts of a development, such as landscape and environmental impacts, will be important factors in the design process... Assessment of impacts must be for the stated design life of the scheme rather than a shorter time period." - <b>EN-1 Draft Paragraph 4.6.4</b></p>	<p>The evolution of the design is set out in <b>Chapter 4: Site Selection and Assessment of Alternatives</b>.</p> <p>The duration of the impacts is assessed in <b>Section 19.5</b> and <b>19.7</b> onwards.</p>
<p>"references to landscape should be taken as covering seascape and townscape where appropriate." - <b>EN-1 Draft Paragraph 5.10.1</b></p>	<p><b>Section 19.7</b> addresses both seascape and landscape as well as the varied visual effects.</p>
<p>"The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales. For seascapes, applicants should consult the Seascape Character Assessment and the Marine Plan Seascape Character Assessments, and any successors to them."<sup>113</sup></p>	<p><b>Section 19.7</b> onwards takes into account the relevant landscape and seascape character assessments as identified in <b>Section 19.4</b>.</p>

Summary	How and where this is considered in the ES
<p><sup>113</sup>The Seascape Character Assessments Guidance:  <a href="https://www.gov.uk/government/publications/seascapecharacter-assessments-identify-and-describe-seascape-types">https://www.gov.uk/government/publications/seascapecharacter-assessments-identify-and-describe-seascape-types</a> Marine plan seascape character assessments:  <a href="https://www.gov.uk/government/publications/seascape-assessments-for-north-east-north-west-south-east-southwest-marine-plan-areas-mmo1134">https://www.gov.uk/government/publications/seascape-assessments-for-north-east-north-west-south-east-southwest-marine-plan-areas-mmo1134</a>" - <b>EN-1 Draft Paragraph 5.10.5</b></p>	
<p>"The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include light pollution effects, including on local amenity, and nature conservation." - <b>EN-1 Draft Paragraph 5.10.7</b></p>	<p>Visual effects during construction and operation and maintenance are assessed in <b>Section 19.7.1</b>. Night-time visual effects are considered in <b>Section 19.8</b>.</p>
<p>"The assessment should also demonstrate how noise and light pollution from construction and operational activities on residential amenity and on sensitive locations, receptors and views, will be minimised." - <b>EN-1 Draft Paragraph 5.10.8</b></p>	<p><b>Section 19.3.4</b> of this Chapter sets out the embedded mitigation. This includes a commitment by the Applicant to reduced lighting intensity in certain conditions.   <b>Section 19.8</b> considers the visual effects of operational visible aviation lighting.</p>
<p>"Applicants should consider how landscapes can be enhanced using landscape management plans, as this will help to enhance environmental assets where they contribute to landscape and townscape quality." - <b>EN-1 Draft Paragraph 5.10.10</b></p>	<p>There are no physical effects on landscape components as a result of the offshore infrastructure. There are however effects on Seascape components and landscape character, and these are assessed in <b>Section 19.9</b> onwards.</p>
<p>"All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents,</p>	<p>The impacts on visual receptors are assessed in <b>Section 19.7</b>. This includes consideration of visibility from undeveloped coast.   The benefits (including need) of the Offshore Project are set out in <b>Chapter 4: Site</b></p>

Summary	How and where this is considered in the ES
<p>and other receptors, such as visitors to the local area, outweigh the benefits of the project. Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast." - <b>EN-1 Draft Paragraph 5.10.20</b></p>	<p><b>Selection and Consideration of Alternatives.</b></p>
<p>"It may be helpful for applicants to draw attention, in the supporting evidence to their applications, to any examples of existing permitted infrastructure they are aware of with a similar magnitude of impact on sensitive receptors. This may assist the Secretary of State in judging the weight they should give to the assessed visual impacts of the proposed development." - <b>EN-1 Draft Paragraph 5.10.21</b></p>	<p><b>Section 19.18</b> sets out examples of existing permitted infrastructure with greater magnitudes of impact on sensitive receptors.</p>
<p><b>NPS EN-3 (Draft, September 2021)</b></p>	
<p>"In sites with nationally recognised designations (SSSIs, National Nature Reserves, National Parks, the Broads, Areas of Outstanding Natural Beauty, Registered Parks and Gardens, and Marine Conservation Zones), consent for renewable energy projects should only be granted where the relevant tests in Sections 5.4 and 5.10 of EN-1 are met and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits." - <b>EN-3 Draft Paragraph 2.22.21</b></p>	<p>The Windfarm Site does not lie within a nationally recognised landscape planning designation. Therefore, this paragraph of EN-3 is not applicable.</p>
<p>"Owing to the complex nature of offshore wind farm development, many of the details of a proposed scheme may be unknown to the applicant at the time of the application to the Secretary of State, possibly including:</p> <ul style="list-style-type: none"> <li>· the precise location and configuration of turbines and associated development <ul style="list-style-type: none"> <li>• the foundation type and size</li> </ul> </li> </ul>	<p>The need for a level of flexibility within the design envelope is well established and described in the <b>Chapter 4: Site Selection and Assessment of Alternatives.</b></p> <p>The parameters used in the assessment of the worst case scenario (WCS) for the purpose of SLVIA are set out in <b>Section 19.3.3.</b></p>



Summary	How and where this is considered in the ES
<ul style="list-style-type: none"> <li>• the exact turbine tip height and rotor swept area</li> <li>• the cable type and precise cable route</li> <li>• the exact locations of offshore and/or onshore substations” - EN-3 Draft Paragraph 2.23.6</li> </ul> <p>“In accordance with Section 4.2 of EN-1, the Secretary of State should accept that wind farm operators are unlikely to know precisely which turbines will be procured for the site until some time after any consent has been granted. Where some details have not been included in the application, the applicant should explain which elements of the scheme have yet to be finalised, and the reasons. Therefore, some flexibility may be required in the consent. Where this is sought and the precise details are not known, then the applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.6) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope)<sup>24</sup>. In this way the maximum adverse case scenario will be assessed and the Secretary of State should allow for this uncertainty in its consideration of the application and consent” - <b>EN-3 Draft Paragraph 2.23.7</b></p>	
<p>“Seascape is an additional issue for consideration given that it is an important environmental, cultural and economic asset. This is especially so where seascape provides the setting for a nationally designated landscape (National Park, the Broads or AONB) and supports the delivery of the designated area’s statutory purpose; and for stretches of coastline identified as Heritage Coasts which are associated with a largely undeveloped coastal character. Seascape is a discrete area within which there is shared inter-visibility between land and sea.<sup>36</sup> In some circumstances it may be necessary to</p>	<p>The effects on seascape components and landscape character are assessed in <b>Section 19.9</b> onwards.</p>

Summary	How and where this is considered in the ES
<p>carry out a seascape and visual impact assessment (SLVIA) in accordance with the relevant offshore wind farm EIA policy. This will always be the case where a coastal National Park, the Broads or AONB, or a Heritage Coast is potentially affected.” - <b>EN-3 Draft Paragraph 2.35.2</b></p>	
<p>“Relevant guidance should be followed including, but not limited to seascape character assessments… and marine plan seascape character assessments.” - <b>EN-3 Draft Paragraph 2.35.3</b></p>	<p>Relevant seascape character assessments have been referenced as set out in <b>Section 19.4 and 19.20</b>.</p>
<p>“where an offshore wind farm will be visible from the shore and would be within the setting of a nationally designated landscape with potential effects on the area’s statutory purpose, an SLVIA should be undertaken which is proportionate to the scale of the potential impacts.” - <b>EN-3 Draft Paragraph 2.35.4</b></p>	<p>It is considered that the SLVIA is proportionate to the scale of the potential impacts and the assessment in <b>Section 19.7</b> onwards includes the effects on the settings of nationally designated landscapes.</p> <p>The SLVIA has been informed through consultation with stakeholders during statutory and non-statutory processes, which has influenced the SLVIA in all aspects, from consideration of the realistic worst-case scenarios, the number and location of viewpoints, the approach taken to assessment at each location, and detail presented in contextualizing key assessment criteria such as magnitude and susceptibility. The SLVIA is therefore directly proportionate both to the scale of potential impacts and the quantum of feedback provided.</p>
<p>“Where necessary, assessment of the seascape should include an assessment of four principal considerations on the likely effect of offshore wind farms on the coast: The limit of visual perception from the coast under poor, good and best lighting conditions the effects of navigation and hazard prevention lighting on dark night skies’</p>	<p>The range and frequency of visibility of the Windfarm Site from the coast is illustrated in <b>Plate 19.2</b> and considered throughout the assessments in <b>Section 19.7</b> onwards.</p> <p>Night-time effects of lighting are considered in <b>Section 19.8</b>.</p> <p>The individual characteristics and special qualities of the coast in relation to designated</p>



Summary	How and where this is considered in the ES
<p>individual landscape and visual characteristics of the coast and the special qualities of designated landscapes, which limits the coasts capacity to absorb a development’ and how people perceive and interact with the coast and seascape.” - <b>EN-3 Draft Paragraph 2.35.5</b></p>	<p>landscapes is assessed in <b>Section 19.12</b> and <b>19.13</b>.</p> <p>How people perceive and interact with the coast and seascape is considered in <b>Section 19.7.1</b>.</p>
<p>“Neither the design nor scale of individual wind turbines can be changed without significantly affecting the electricity generating output of the wind turbines. Therefore, the Secretary of State should expect it to be unlikely that mitigation in the form of reduction in scale will be feasible. However, the layout of the turbines should be designed appropriately to minimise harm, taking into account other constraints such as ecological effects, safety reasons or engineering and design parameters.” - <b>EN-3 Draft Paragraph 2.35.9</b></p>	<p>The specific layout of the WTGs has not been defined at this stage.</p> <p>However, <b>Section 19.3.4</b> sets out the mitigation that has been included in order to reduce the potential for seascape, landscape, and visual effects, which has included a reduction in the height of the WTGs proposed, from that at Scoping.</p> <p>The reductions made throughout the pre-application process, which have resulted in a material reduction in the maximum possible height of the proposed WTGs, has been introduced specifically to minimise harm.</p>
<p><b>NPS EN-5 Electricity Networks Infrastructure</b></p>	
<p>“New substations, sealing end compounds and other above ground installations that form connection, switching and voltage transformation points on the electricity networks can also give rise to landscape and visual impacts. Cumulative landscape and visual impacts can arise where new overhead lines are required along with other related developments such as substations, wind farms and/or other new sources of power generation.” - <b>EN-5 Paragraph 2.8.2</b></p>	<p>The proposed inter array cables and offshore export cables will be sub-sea and will not result in significant seascape and / or visual effects.</p> <p>The SLVIA has assessed the effects of the OSP in <b>Sections 19.5</b> and <b>19.7</b>.</p>
<p><b>NPS EN-5 Electricity Networks Infrastructure (Draft)</b></p>	
<p>“Cumulative adverse landscape and visual impacts may arise where new overhead lines are required along with other related developments such as substations, wind farms, and/or other new sources of generation.” - <b>EN-5 Draft Paragraph 2.11.4</b></p>	<p>Potential cumulative impacts are considered in <b>Section 19.14</b></p>

Summary	How and where this is considered in the ES
<p>"Though mitigation of the landscape and visual impacts arising from overhead lines and their associated infrastructure is usually possible, it may not always be so, and the impossibility of full mitigation in these cases does not countermand the need for the infrastructure." - <b>EN-5 Draft Paragraph 2.11.6</b></p>	<p><b>Section 19.3.4</b> of this Chapter sets out the embedded mitigation introduced to address effects on sensitive receptors.</p>

### 19.2.3 National Planning Policy Framework

9. The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, updated July 2021) is the primary source of national planning guidance in England. Sections relevant to this aspect of the ES are summarised below in **Table 19.3**.
10. The Marine Policy Statement (MPS) (Department for Environment, Food & Rural Affairs, September 2011) is the framework for preparing Marine Plans and taking decisions affecting the marine environment. Sections relevant to the SLVIA are also summarised below in **Table 19.3**.

*Table 19.3 Summary of NPPF and MPS Policy relevant to SLVIA*

Summary	How and where this is considered in the ES
<p><b>National Planning Policy Framework (2021)</b></p>	
<p><b>NPPF Policy 15: Conserving and enhancing the natural environment, paragraph 174:</b></p> <p><i>"Planning policies and decisions should contribute to and enhance the natural and local environment by (inter alia):</i></p> <p><i>a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);</i></p> <p><i>b) recognising the intrinsic character and beauty of the countryside, and the wider</i></p> <p><i>benefits from natural capital and ecosystem services - including the economic</i></p> <p><i>and other benefits of the best and most versatile agricultural land, and of trees and woodland;</i></p>	<p>The potential impacts on the landscape character, including valued landscape designations, is assessed in <b>Sections 19.11, 19.12, and 19.13</b>.</p>

Summary	How and where this is considered in the ES
<p><i>c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate...</i></p>	
<p><b>NPPF Policy 15: Conserving and enhancing the natural environment, paragraphs 176 and 177:</b></p> <p><i>“Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks. Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality...The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas...”</i></p>	<p>The individual characteristics and special qualities of the coast in relation to designated landscapes is assessed in <b>Sections 19.12, and 19.13.</b></p>
<p><b>NPPF Policy 15: Conserving and enhancing the natural environment, paragraph 178:</b></p> <p><i>“Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 176), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate unless it is compatible with its special character.”</i></p>	<p>The potential impacts on areas defined as Heritage Coast are considered in the assessment of landscape character, and landscape designations, in <b>Sections 19.11, 19.12, and 19.13.</b></p>
<p><b>UK Marine Policy Statement (MPS) (2011)</b></p>	
<p><b>In relation to seascape, paragraph 2.6.5.3 advises that:</b></p> <p><i>“In considering the impact of an activity or development on seascape, the marine plan authority should take into account existing character and quality, how highly it is valued and its capacity to accommodate change specific to any development. Landscape Character assessment methodology may be an aid to this process.”</i></p>	<p>The effects on seascape components and landscape character are assessed in <b>Section 19.9</b> onwards.</p>
<p><b>Paragraph 2.6.5.4 states that:</b></p> <p><i>“For any development proposed within or relatively close to nationally designated areas the marine plan authority should have regards to the specific statutory purposes of the</i></p>	<p>The individual characteristics and special qualities of the coast in relation to designated landscapes is assessed in</p>

Summary	How and where this is considered in the ES
<i>designated areas. The design of a development should be taken into account as an aid to mitigation.”</i>	<b>Sections 19.12, and 19.13.</b>

### 19.2.4 Lighting Requirements

11. Lighting required as an aid to marine navigation is fitted to low points on the structures and is assumed, for the purpose of this assessment, as being visible within a nominal range of 3-5NM (5.6-9.3km). It would therefore not be visible from the closest section of the coast at Lundy at a minimum distance of 43.7km from the Windfarm Site.
12. Lower-level marine navigation lighting may be temporarily required on structures that are not to be lit during the operational and maintenance phase. There is also likely to be work lights within the array area during construction and decommissioning. However, where this is the case, the lit structures would be potentially less widespread across the array area than would be the case during operation and maintenance of the Windfarm.
13. Lighting required as an aid to navigation is assessed as not significant during construction and decommissioning, and operation and maintenance. Navigational lighting is therefore not considered further within this assessment.
14. During construction and decommissioning the requirement for visible aviation lighting on structures and tall cranes within the array area will vary over the duration of those phases as OSP and the floating WTG structures become present above sea surface and where they reach defined height levels in relation to aviation lighting requirements.
15. The Civil Aviation Authority (CAA) directs in 2016 No. 765 Civil Aviation, The Air Navigation Order 2016, paragraph 223, that "*Subject to paragraph (10), this article applies to any wind turbine generator— (a) the height of which is 60 metres or more above the level of the sea at the highest astronomical tide; and (b) which is situated in waters within or adjacent to the United Kingdom up to the seaward limits of the territorial sea. (2) Subject to paragraph (3) the person in charge of a wind turbine generator must ensure that it is fitted with at least one medium intensity steady red light positioned as close as reasonably practicable to the top of the fixed structure.*"
16. The maximum height of the OSP, including the lightning protection and ancillary structures is 115 m during operation. It is assumed therefore that the OSP would not

be required to have medium intensity (2000 candela) lights fitted during its construction and decommissioning, operation and maintenance although they may be required to have 200 candela lights fitted to avoid aviation hazard.

17. The vessel mounted cranes are unlikely to be used in the hours of darkness or poor visibility and are assumed to be stowed at lower elevations during periods when they are not operating.
18. The mitigation included for the operational lighting, which reduces the intensity of the aviation lights to 200 candela in certain meteorological conditions, is activated by sensors. However, these sensors will not be in place until the Windfarm Site is commissioned for operation.
19. Medium intensity steady red lights may be temporarily required on structures that are not to be lit during the operation and maintenance phase, however where this is the case these structures would be at a similar or greater distance from SLVIA receptors and potentially less widespread across the array area than would be the case during operation and maintenance of the Windfarm. The lighting of the WTGs will transition to the operational aviation lighting at the end of the construction period.
20. The medium intensity lights will be restricted to the WTGs as they are erected and decommissioned. The floating WTGs are to be constructed elsewhere and then towed, on their floating substructures, to the Windfarm Site and then commissioned, which is programmed to take a maximum of eight months. This may result in medium intensity lights being visible at hub height (132m above MHWS), which is considered to be the WCS for night-time effects.
21. The lighting requirements and WCS operational assumptions for SLVIA are set out in **Table 19.6** and their assumed positions are shown on **Figure 19.3**. Other lighting required on the offshore elements of the Windfarm is either of such a low intensity that it would not be visible from the coast or only on periodically for a short duration such as when a helicopter is approaching to land on an OSP. This other lighting is not considered in the SLVIA.
22. Article 223 of the Air Navigation Order (CAA, 2016) requires that WTGs over 60m tall in United Kingdom Waters must be *“fitted with at least one medium intensity steady red light positioned as close as reasonably practicable to the top of the fixed structure.”*
23. The potential effect of the WTGs at night would result primarily from visible, medium intensity, flashing (maximum 2,000 candela) red coloured aviation light fittings located on the hubs of all peripheral WTGs.

## 19.2.5 Lighting - Regulations and Guidance

### 19.2.5.1 International Civil Aviation Organization

24. In the UK, the International Civil Aviation Organization (ICAO) requirements for lighting WTGs are implemented through CAA publication CAP 764: Policy and Guidelines on Wind Turbines (CAA, 2016), and CAP 393: Air Navigation Order 2016 (CAA, 2016).
25. The proposed WTGs, at a maximum of 284 m to blade tip, would require lighting under Article 222 of the Air Navigation Order (ANO, 2016). This requires medium intensity 'steady' red aviation lights (emitting 2,000 candela) to be fitted at nacelle (hub) level. In addition, the CAA requires low intensity lights to be fitted at the intermediate level on the WTG tower (CAA, 2017).
26. For 2,000 candela medium intensity steady or fixed red lights, ICAO indicates a requirement for no lighting to be switched on until 'Night' has been reached, as measured at 50 cd/m<sup>2</sup> or darker. CAA have confirmed that UK policy broadly aligns with the International standards, including insofar as the point at which lights must be switched on at 'Night' rather than 'Twilight'.
27. ICAO, 2016 (Table 6.3, page 6-5) also identifies minimum requirements that WTGs have 2,000cd minimum average intensity at -1° to +2° from horizontal. This focusses the 2,000cd lighting in the horizontal plane between -1° to +2° around the horizontal and allows for a reduced intensity of the light from above +2° and below -1°.
28. CAP 393 (CAA, 2016) also allows for 2,000 cd aviation lights to be dimmed to 10% of their intensity (200 cd) where visibility conditions permit, when visibility from every WTG within the Windfarm Site is >5km.

### 19.2.5.2 Guidelines for Landscape and Visual Impact Assessment - Third Edition (GLVIA3)

29. GLVIA3 (page 103) provides the following guidance on the assessment of lighting effects: *"For some types of development the visual effects of lighting may be an issue. In these cases it may be important to carry out night-time 'darkness' surveys of the existing conditions in order to assess the potential effects of lighting and these effects need to be taken into account in generating the 3D model of the scheme. Quantitative assessment of illumination levels, and incorporation into models relevant to visual effects assessment, will require input from lighting engineers, but the visual effects assessment will also need to include qualitative assessments of the effects of the predicted light levels on night-time visibility."*



30. GLVIA3 (page 60) also provides the following guidance with regards to mitigation of obtrusive light: *“lighting for safety or security purposes may be unavoidable and may give rise to significant adverse effects; in such cases, consideration should be given to different ways of minimising light pollution and reference should be made to appropriate guidance, such as that provided by the Institution of Lighting Professionals (ILP, 2011).”*

#### 19.2.5.3 Institute of Lighting Professionals Guidance

31. Guidance produced by the Institute of Lighting Professionals (ILP, 2011) is useful in setting out some key terminology that is used in this visual assessment of WTG lighting:
- *“Obtrusive Light - whether it keeps you awake through a bedroom window or impedes your view of the night sky, is a form of pollution, which may also be a nuisance in law and which can be substantially reduced without detriment to the lighting task.*
  - *Skyglow - the brightening of the night sky;*
  - *Glare - the uncomfortable brightness of a light source when viewed against a darker background; and*
  - *Light Intrusion - the spilling of light beyond the boundary of the property or area being lit, are all forms of obtrusive light which may cause nuisance to others.”*
32. Types of obtrusive light are identified in Figure 1 of the ILP (2011).
33. Campaign for the Protection for Rural England (CPRE) also identifies these same broad terms as the three types of light pollution:
- *“Skyglow - the pink or orange glow we see for miles around towns and cities, spreading deep into the countryside, caused by a scattering of artificial light by airborne dust and water droplets.*
  - *Glare - the uncomfortable brightness of a light source.*
  - *Light intrusion - light spilling beyond the boundary of the property on which a light is located, sometimes shining through windows and curtains.”*
34. The following guidance is noted:
- *“The most sensitive/critical zones for minimising sky glow are those between 90° and 100° (note that this equates to 0-10° above the horizontal).*
  - *Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70°.*

- *In rural areas the use of full horizontal cut off luminaires installed at 0° uplift will, in addition to reducing sky glow, also help to minimise visual intrusion within the open landscape.*
- *Upward Light Ratio (ULR) of the Installation is the maximum permitted percentage of luminaire flux that goes directly into the sky. A ULR of 0 (zero) Candela (cd) is suggested for Dark Sky Parks.”*

#### 19.2.5.4 NatureScot Guidance

35. Although NatureScot guidance is a material consideration only to development projects in Scotland, it does represent current and developing thinking and is specifically relevant to the assessment of windfarms, therefore it has been included and referred to within this section.
36. NatureScot Guidance on WTG lighting is contained in para 174-177 in Visual Representation of Windfarms (NatureScot, 2017) as follows: *“Where an illustration of lighting is required, a basic visualisation showing the existing view alongside an approximation of how the wind farm might look at night with aviation lighting may be useful. This is only likely to be required in particular situations where the wind farm is likely to be regularly viewed at night (e.g. from a settlement, transport route) or where there is a particular sensitivity to lighting (e.g. in or near a Dark Sky Park or Wild Land Area). Not all viewpoints will need to be illustrated in this way. The visualisation should use photographs taken in low light conditions, preferably when other artificial lighting (such as street lights and lights on buildings) are on, to show how the wind farm lighting will look compared to the existing baseline at night. It is only necessary to illustrate visible lighting, not infrared or other alternative lighting requirements.”*
37. A NatureScot workshop held on 6 November 2019 indicated that a proportionate and pragmatic approach is required, both in terms of the need to assess likely significant effects under the EIA regulations, complying with current civil aviation standards and providing mitigation on a project and site-specific basis.
38. Mitigation options to eliminate or reduce the need for, and effects of, visible lighting are evolving quickly, and developers are exploring these with consultees and the CAA in relation to specific sites.
39. Ministers and planning authorities are using planning conditions/ requirements to manage effects. It is recognised that developers need flexibility to utilise the most appropriate mitigation once they are ready to start discharging conditions. Conditions provide certainty that effects will be managed along with some flexibility for



developers to identify the most appropriate mitigation option(s) post consent and prior to construction, and to agree these with the relevant decision maker.

40. In terms of visual effects, NatureScot's view (as expressed at a seminar in November 2019) is that lengthy debate about the exact brightness of lights (including in visualisations) is potentially not helpful and that it is better to focus on where they will be visible, how many lights will be visible and the level of change from the baseline situation.
41. Notably the magnitude (level) of change could be lessened through mitigation, which may include reducing the brightness of the lights, as is the case for the Windfarm. This in turn reduces the area over which the Windfarm aviation lights would be visible.
42. NatureScot has also taken a pragmatic view with night-time visualisations, requesting that decision makers, consultees and communities require visualisations from a small number of relevant viewpoints to understand these effects. NatureScot also recognises the challenges of capturing night-time photography and accept that some post photographic manipulation of images to provide a good representation is acceptable.

### 19.2.6 Lighting - Planning Policy

43. Relevant planning policy with regards to night-time visual effects on the PCNP is contained in the PCNPA LDP (2020), Policy 9 Light Pollution:

*"Proposals that are likely to result in a significant level of external artificial lighting being emitted shall include a full lighting scheme and will be permitted:*

*a) where the lighting proposed relates to its purpose; and,*

*b) where there is no unacceptable adverse effect on the character of the area, local residents, vehicle users, pedestrians, biodiversity and the visibility of the night sky.*

*Wherever possible opportunities to mitigate potential cumulative impacts on the night sky should be explored."*

44. The policy is intended to conserve the 'relatively minimal impact' of lighting on the night sky of the PCNP. Policy 9 applies across the PCNP, where it covers the coastline within the SLVIA Study area with the exception of inner Milford Haven. The lighting on the Windfarm Site is not located within the PCNP, being a minimum distance of 54.7km outside the mainland coast of the PCNP. Although the visible lighting of the Windfarm is outside the PCNP, Policy 9 aims to conserve and enhance all areas of intrinsic dark sky within the PCNP. The visual impact of the lighting on the Offshore

Project is therefore assessed, since the aviation lighting may be visible in the seascape outside the PCNP (from locations within the PCNP), in order that the proposals take due consideration of the overall visual impact that the lighting will have on the landscape, in line with policy requirements.

45. The Background Paper: Special Qualities of PCNP report (PCNPA, 2018) describes the night skies as part of the special quality of 'remoteness, tranquillity, and wildness' in the PCNP. Part of the 'special appreciation' of the PCNP includes the *“big skies of the evening and the radiance of the stars on a clear night”* and *“the lack of light pollution of the night sky.”*
46. The PCNP also promotes eight 'dark sky discovery sites', as locations to find the PCNP's darkest skies, which offer specific points to view the night sky. The closest of which is at Broadhaven South (Car Park), approximately 56.9km from the Windfarm Site.
47. Planning policy relevant to the NDCAONB in respect of artificial lighting is contained in the North Devon and Torridge (2018) Local Plan 2011-2031, Policy ST14: Enhancing Environmental Assets. It states:

*“The quality of northern Devon's natural environment will be protected and enhanced by ensuring that development contributes to: ... (f) ensuring development conserves and enhances northern Devon's local distinctiveness including its tranquillity, and the setting and special qualities of Exmoor National Park including its dark night skies;”*

48. The policy continues:

*“Away from the main towns, large parts of northern Devon remain tranquil. The relatively large scale of the remaining tranquil areas (Figure 6.1 'Devon's Tranquil Areas') is important to the character of Devon, which scores the highest tranquillity level in the South West. Northern Devon's relative tranquillity is an important part of its landscape character and environment and includes dark night skies without light pollution through sky glow. Development within northern Devon will safeguard these dark night skies and opportunities will be taken to enhance this tranquillity and reduce light pollution.”*

49. The NDCAONB (2019) Management Plan illustrates that dark night skies are a feature of the designated landscape, particularly within the Hartland Peninsula. To that end, Policy A2 of the Management Plan seeks to *“Preserve the dark skies, peace, and tranquillity of the AONB.”*
50. The lighting within the Windfarm Site is not located within the NDCAONB, being a minimum distance of 52.7km outside the mainland coast. Although the visible lighting

of the Windfarm Site is outside the NDCAONB, Policies ST14 and A2 aim to conserve and enhance areas of intrinsic dark sky in or within the setting of the AONB.

51. The CAONB Management Plan background paper Planning & Development in Protected Landscapes (2022), Policy PD-P11 contains the following wording in respect of lighting:

*“Any development in, or within the setting of, the AONB must be sustainable development that: ...respects and does not diminish dark skies, designated or otherwise, and maintains tranquillity. Any development that leads to increased light spill will not be supported”*

52. The adopted Cornwall Local Plan 2010-2030, Policy 23: Natural Environment, states:

*“Development must take into account ... the wish to maintain dark skies and tranquillity in areas that are relatively undisturbed, using guidance from the Cornwall Landscape Character”*

53. In respect of the Special Qualities of the CAONB, the Hartland (Marsland to Menapoint Church) description of 'Landscape Condition' identifies that *'The Council for the Protection of Rural England's tranquillity, intrusion and night blight mapping shows Hartland to be the most 'undisturbed' section of the Cornwall AONB.'* Policy H-P2, which is applicable to this Local Section (01), has the aim:

*“Seek to maintain current low levels of light pollution in order to maintain dark night skies.”*

54. The lighting within the Windfarm Site is not located within the CAONB, being a minimum distance of 52.3km outside the mainland coast. Although the visible lighting is outside the CAONB, Policies PD1-P11 and Local Section policy H-P2 aim to conserve and enhance areas of intrinsic dark sky in and within the setting of the AONB.
55. The visual effect of the Windfarm on visual receptors, views from dark sky discovery sites (Lundy Island and PCNP) and appreciation of the night skies of the PCNP, NDCAONB, and CAONB, are considered further in the **Section 19.8**.

## 19.3 Assessment Methodology

### 19.3.1 Study area

56. Details of the location of the Offshore Project and the offshore infrastructure are set out within **Chapter 5: Project Description**.
57. The Offshore Export Cables will be constructed along the sea-bed and would therefore not be visible during operation and maintenance. During the construction

and decommissioning of the Offshore Export Cables the only effect on the seascape, landscape and visual amenity would be the visibility of a small number of vessels out at sea, which are a common occurrence as part of the baseline character and views. As set out in the Scoping Report, it is considered that, even taking into account the designated status of the landscapes along the coastline closest to the Offshore Export Cable Corridor and at the landfall (**Figure 2.13.2**), such temporary, short duration effects are not likely to give rise to a significant effect. Therefore, hereafter, the SLVIA assesses the effects of the construction and decommissioning, operation and maintenance, of only the Windfarm aspect of the Offshore Project, as set out in **Section 19.3.7**, and **Table 19.10**.

58. The study area is defined by the distance over which impacts on identified receptors from all the visible offshore infrastructure (i.e., within the Windfarm Site) may occur and by the location of any receptors that may be effected by those potential impacts.
59. A 50km radius SLVIA study area was proposed in the Scoping Report for a number of reasons. Although WTGs of the height proposed could theoretically be theoretically visible at distances beyond 50km, as discussed further in **Section 19.2.4**, the EIA regulations require assessment of the 'likely significant effects'. Therefore, the SLVIA Study area should extend far enough to include all areas within which likely significant effects may to occur. It need not cover all areas where there may be effects. Precedents for a 50km study area extent were presented at Expert Topic Group (ETG) meetings (11<sup>th</sup> October 2022), including the findings of the White Consultants (2020) Offshore Energy Strategic Environmental Assessment: Review and Update of Seascape and Visual Buffer Study for Offshore Wind Farms, a review of SLVIA findings for offshore wind farm proposals in proximity to high sensitivity coastlines that have either been consented or are at application stage, and further aspects such as weather and visual acuity (see **Section 19.4.5**) which would influence a perception of the WTGs at distances over 50km. In addition to responses received through consultation (**Section 19.3.8**), Stakeholder feedback at ETG suggested that the seascape off north Devon and Cornwall generally had less activity and features (notably shipping) than in other parts of the UK coast, and that these coastlines generally had an elevated cliff topography, which would potentially allow for greater visibility of the proposed WTGs.
60. The spatial scope of the SVLIA is therefore defined as 60km from the Offshore Project (for the purposes of the assessment, this comprises the maximum extent of the Windfarm Site), which has formed the basis of the study area described in this section and illustrated on **Figure 19.1**. This has been agreed with consultees as set out in **Table 19.12**. Potential impacts on seascape, landscape, and visual amenity from the

Windfarm Site outside of the 60km study area are scoped out of this assessment as they are considered unlikely to result in significant effects.

61. The Windfarm Site is located offshore in the Celtic Sea, approximately 52km from the closest section of the North Cornwall and Devon coastline, and approximately 43.7km from the closest land at Lundy Island. The Pembrokeshire coastline lies approximately 54.7km to the north-east of the Windfarm Site at its closest point.
62. The SLVIA study area is defined as the outer limit of the area where significant effects could occur. This has been established using professional judgement and supported by guidance, consultations with relevant stakeholders, the Zone of Theoretical Visibility (ZTV) (**Figure 19.4**, **Figure 19.5**, and **Figure 19.6**) and identification of potential impact pathways.
63. The SLVIA study area includes the seascapes of the Celtic Sea, an area of the Atlantic Ocean; to the north are the coastal waters off South Pembrokeshire; to the east is the Bristol Channel; to the south-east are the coastal waters off north Devon and Bideford Bay; and, to the south area the coastal waters off North Cornwall, from Hartland Point to Trevoise Head.

### 19.3.2 Approach to Assessment

64. The assessment methodology for SLVIA differs from that presented in in **Chapter 6: EIA Methodology**.

#### 19.3.2.1 Impact assessment criteria

65. The methodology for the assessment of impacts on seascape, landscape and visual amenity from the Offshore Project is set out in full in **Appendix 19.A: SLVIA Methodology**. An overview is provided in the following sections.

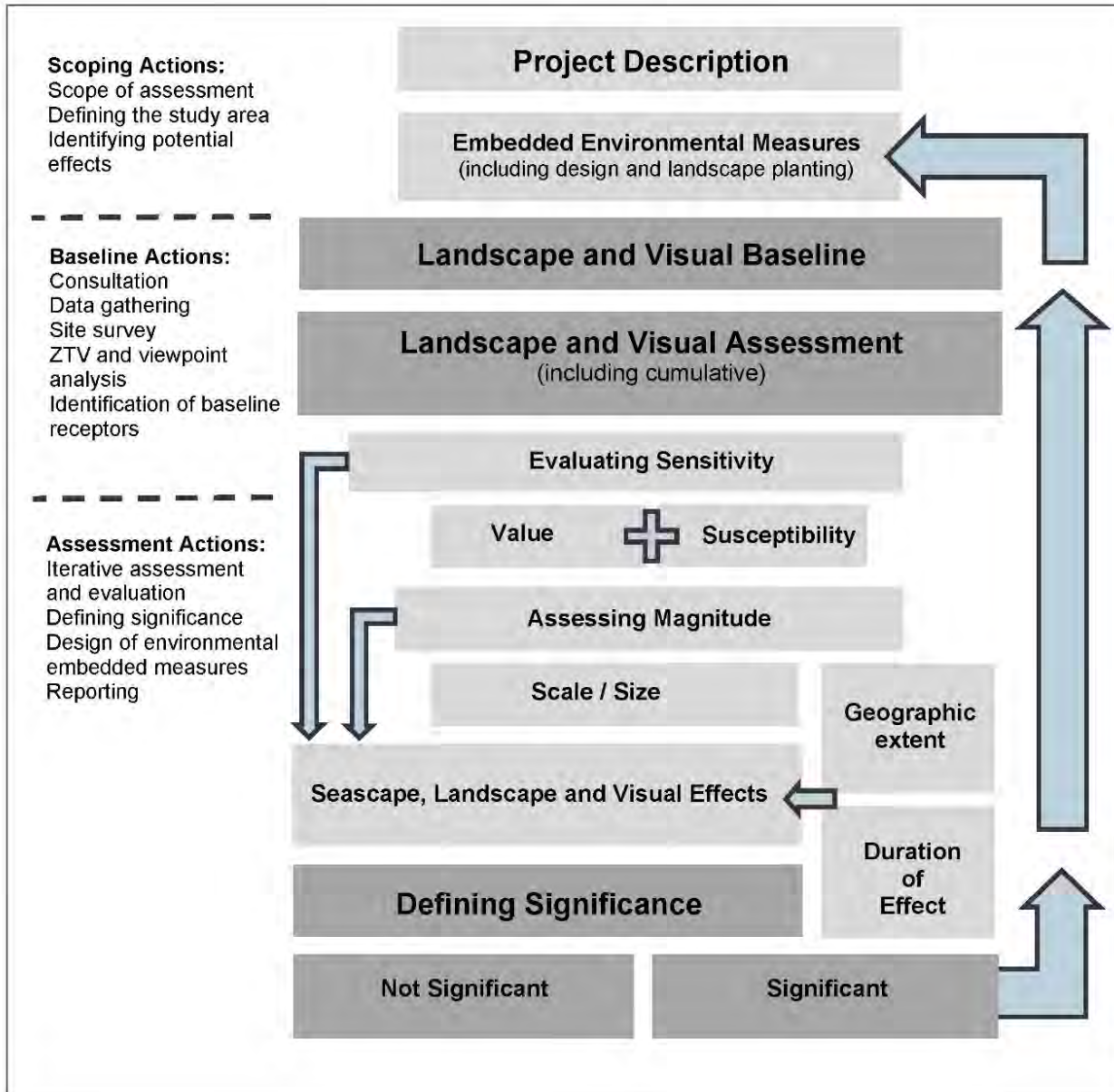
##### 19.3.2.1.1 Overview

66. The assessment has been undertaken in accordance with the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3<sup>rd</sup> edition (GLVIA3), and other best practice guidance. An overview of the SLVIA methodology is provided here and illustrated, diagrammatically, in **Plate 19.1**.
67. The SLVIA assesses the likely effects from the construction, operation and maintenance, and decommissioning phases of the Offshore Project on the seascape, landscape, and visual amenity, encompassing effects on seascape / landscape character, landscapes and coastal areas designated or protected for their special qualities and value, visual effects, and cumulative effects.

68. The SLVIA is based on the Project Design Envelope, or 'Rochdale Envelope', described in **Chapter 5: Project Description** and the realistic worst-case scenario identified as appropriate for the SLVIA as described in **Section 19.3.3**. In compliance with the Environmental Impact Assessment (EIA) Regulations (2017), the likely significant effects of a realistic 'worst case' scenario are assessed and illustrated in the SLVIA.
69. Essentially, the effects on seascape, landscape, and visual amenity (and whether they are significant) is determined by an assessment of the 'sensitivity' of each receptor, or group of receptors, and the 'magnitude of impact' that would result from the Offshore Project.
70. The evaluation of sensitivity takes account of the value and susceptibility of the receptor to the visible Offshore Project infrastructure. This is combined with an assessment of the magnitude of impact, which takes account of the size, scale, duration, geographic extent, reversibility (i.e., temporary, or permanent) of the proposed change, and whether this change is direct or indirect. By combining assessments of sensitivity and magnitude of impact, a level of effect upon the seascape, landscape or visual amenity can be evaluated and determined. The resulting 'level of effect' is described in terms of whether it is 'significant' or 'not significant.'



*Plate 19.1 Overview of approach to SLVIA*



71. The assessment has also considered the cumulative effects likely to result from the Offshore Project and other similar proposed developments.
72. An appropriate and proportionate level of assessment has been undertaken and agreed through consultation and at the Scoping stage and during further consultation. The level of assessment may be 'simple' (requiring desktop data analysis) or 'detailed' (requiring site surveys and investigations in addition to desktop analysis).



73. The SLVIA unavoidably involves a combination of quantitative and qualitative assessment. Wherever possible, a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach.

#### 19.3.2.1.2 Sensitivity

74. The sensitivity of seascape, landscape and visual receptors is an expression of the combination of the judgements made about the value of that receptor and its susceptibility to the specific type of change or the development proposed. Landscape value is the 'inherent' component, which is independent of the development proposal, while the other component, susceptibility, is development specific.

75. The value of a seascape, landscape or view receptor reflects the value that society attaches to that seascape, landscape, or view. There are a range of factors that are used to establish value but the presence of designations at national or local levels often reflects the level of value or importance they signify to society. The range of factors that can be considered when identifying landscape value include natural heritage, cultural heritage, landscape condition, associations, distinctiveness, recreational, perceptual (scenic), perceptual (wildness and tranquillity) and functional factors (Landscape Institute, 2021).

76. In Wales LANDMAP visual and sensory evaluation data also provides a basis for attributing value to the landscape, however, in this instance the heightened value of the land within the Welsh part of the study area is recognised by its designation as part of the PCNP.

77. The susceptibility of a seascape or landscape to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the Offshore Project, based on its characteristics, robustness, scale, topography, openness/enclosure, perceptual qualities and the associations between the landscape/seascape receptor and the Offshore Project. The susceptibility of visual receptors (people) relates mainly to the activity of the viewer (residents, motorists, walkers etc) and the experience of the viewer - the extent to which attention or interest may be focused on the view and visual amenity, which combine to influence how susceptible viewers are to the potential effects of the Offshore Project.

78. An overall assessment of the sensitivity of each seascape, landscape and visual receptor has been made by combining the assessment of the value of the receptor and its susceptibility to change. In SLVIA, sensitivity is specific to the Offshore Project and to the location in question. An overall level of sensitivity has been applied for each visual receptor or view – high, medium-high, medium, medium-low, or low.

These levels are not defined as such, however the basis for sensitivity assessments has been made clear using evidence and professional judgement in the evaluation of each receptor, with reference to criteria that tend towards higher or lower sensitivity levels as set out in **Appendix 19.A: SLVIA Methodology**.

#### 19.3.2.1.3 Magnitude

31. An overall assessment of the sensitivity of each seascape, landscape and visual receptor has been made by combining the assessment of the value of the receptor and its susceptibility to change. In SLVIA, sensitivity is specific to the Offshore Project and to the location in question. An overall level of sensitivity has been applied for each visual receptor or view - high, medium-high, medium, medium-low, or low. These levels are not defined as such, however the basis for sensitivity assessments has been made clear using evidence and professional judgement in the evaluation of each receptor, with reference to criteria that tend towards higher or lower sensitivity levels as set out in **Appendix 19.A: SLVIA Methodology**.

#### 19.3.2.1.4 Significance of effect

79. The significance of the effect upon offshore seascape, landscape, and visual amenity is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in **Table 19.4**.
80. The significance of the effect on each seascape / landscape character and visual receptor is dependent on all of the factors considered in the sensitivity of the receptor and the magnitude of change resulting from the Offshore Project. Factors which influence levels of sensitivity and magnitude of change assessed in the SLVIA are set out in full in **Appendix 19.A: SLVIA Methodology**. Judgements on sensitivity and magnitude of change are combined to arrive at an overall assessment as to whether the Offshore Project will have an effect that is significant or not significant on each seascape / landscape or visual receptor.
81. The matrix in **Table 19.4** is used as a guide to help inform the threshold of significance when combining sensitivity and magnitude to assess significance. On this basis potential effects are assessed as negligible, minor, moderate, and major. In those instances where there would be no effect, the magnitude has been recorded as 'zero' and the level of effect as 'none.'

*Table 19.4 Significance of an effect - resulting from each combination of receptor sensitivity and the magnitude of the impact upon it*

		Negative Magnitude					
		High	Medium-high	Medium	Medium-low	Low	Negligible
Sensitivity	High	Major	Major	Major / moderate	Moderate	Moderate / minor	Minor
	Medium-high	Major	Major/ moderate	Moderate	Moderate	Moderate / minor	Minor
	Medium	Major / moderate	Moderate	Moderate	Moderate / minor	Minor	Minor / negligible
	Medium-low	Moderate	Moderate	Moderate/ minor	Minor	Minor	Negligible
	Low	Moderate	Moderate / minor	Minor	Minor	Minor	Negligible
		Beneficial Magnitude					
		Negligible	Low	Medium-low	Medium	Medium-high	High
Sensitivity	High	Minor	Moderate / minor	Moderate	Major / moderate	Major	Major
	Medium-high	Minor	Moderate / minor	Moderate	Moderate	Major/ moderate	Major
	Medium	Minor / negligible	Minor	Moderate / minor	Moderate	Moderate	Major / moderate
	Medium-low	Negligible	Minor	Minor	Moderate/ minor	Moderate	Moderate
	Low	Negligible	Minor	Minor	Minor	Moderate / minor	Moderate

82. For the purposes of this assessment, any effects with a significance level of major and major / moderate have been deemed significant in EIA terms (colour shaded boxes in **Table 19.4**). 'Moderate' levels of effect have the potential, subject to the assessor's professional judgement, to be considered as either significant or not significant, depending on the sensitivity and magnitude of change factors evaluated. These assessments are explained as part of the assessment, where they occur. Significance can therefore occur at a range of levels depending on the magnitude and sensitivity; however, in most cases, a significant effect is considered more likely to occur where a combination of the variable results in the Offshore Project having a defining effect on the landscape / seascape character or view. Definitions are not provided for the individual categories or significance shown in the matrix and the reader should refer to the detailed definitions provided for the factors that combine to inform sensitivity and magnitude.
83. Effects assessed as being either moderate / minor, minor, minor / negligible, or negligible levels are assessed as not significant (white shaded boxes).
84. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessments made for each landscape and visual receptor.

#### 19.3.2.1.5 Geographical extent

85. The geographic extent over which the seascape / landscape and visual effects will be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that will experience a particular magnitude of change and therefore the geographic extents of the significant and non-significant effects. The geographic extent of the effects varies depending on the specific nature of the Offshore Project and is principally assessed through analysis of the perceived changes through visibility of the Offshore Project using ZTVs and through field survey verification.

#### 19.3.2.1.6 Duration and reversibility

86. The duration and reversibility of seascape, landscape, and visual effects is based on the period over which the Offshore Project is likely to exist, the extent to which it can be removed / decommissioned, and its effects reversed at the end of that period. The methodology does not include duration and reversibility as part of magnitude of change, as there is potential that the reversibility aspect could alter or reduce potentially significant effects even though they are long-term. The duration and

reversibility of the effects is instead determined separately in relation to the assessed effects.

87. Long-term, medium-term, and short-term seascape / landscape effects are defined as follows:

- Long-term: more than 10 years
- Medium-term: 6 to 10 years
- Short-term: 1 to 5 years.

88. Duration and reversibility are not incorporated into the assessment of magnitude of change but are stated separately in relation to the assessed effects (i.e., as short / medium / long-term, and either temporary or permanent) and are considered as part of drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

#### 19.3.2.2 Approach to visual representations

89. The methodology for the production of visual representations (photomontages and ZTVs) is set out in full in **Appendix 19.A**.

90. The visual representations presented in **Figure 19.24** to **Figure 19.33** have been produced in accordance with NatureScot (2017) Visual Representation of Wind Farms and the Landscape Institute (2019) Visual Representation of Development Proposals (TGN 06/19).

91. The Zone of Theoretical Visibility (ZTV) analysis shown in the accompanying figures to this chapter have also been produced in line with guidance in NatureScot (2017) Visual Representation of Wind Farms. The ZTVs have been generated using Geographical Information Systems software (ESRI ArcGIS Version 10.8.2) to model the theoretical visibility of the offshore WTGs.

#### 19.3.2.3 Cumulative Effects Assessment Methodology

92. The cumulative effect assessment (CEA) considers other plans, projects and activities that may impact cumulatively with the Offshore Project. As part of this process, the assessment considers which of the residual effects assessed for the Offshore Project on their own have the potential to contribute to a cumulative effect, the data and information available to inform the cumulative assessment and the resulting confidence in any assessment that is undertaken. **Chapter 6: EIA Methodology** provides further details of the general framework and approach to the CEA.

93. For SLVIA the potential cumulative effects include additional changes to the seascape, landscape and visual amenity caused by the Offshore Project in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future. These include cumulative seascape/landscape effects that can impact on either the physical fabric or character of the seascape/landscape, or any special values attached to it; and cumulative visual effects caused by combined visibility, which occur where the observer is able to see two or more developments from one viewpoint and / or sequential effects which occur when the observer has to move to another viewpoint to see different developments.
94. The contribution of the Offshore Project to the cumulative effect upon the baseline character/view is assessed and information provided on *“how the effects of the applicant’s proposal would combine and interact with the effects of other development”* (PINS, 2019).
95. In undertaking this CEA for the Offshore Project, it is important to bear in mind that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative effect alongside the Offshore Project. Therefore, a tiered approach has been adopted. This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CEA to ultimately be realised, based upon the project/plan’s current stage of maturity and certainty in the projects’ parameters. The tiered approach which will be utilised within the CEA of the Offshore Project employs the following tiers as set out in **Table 19.5**.

*Table 19.5 Tiered Approach to CEA*

Tier	Description
<b>Tier 1</b>	<ul style="list-style-type: none"> <li>Permitted (consented) application(s), whether under the PA2008 or other regimes, but not yet implemented</li> <li>Submitted application(s) whether under the PA2008 or other regimes but not yet determined.</li> </ul>
<b>Tier 2</b>	<ul style="list-style-type: none"> <li>Projects on the Planning Inspectorate’s Programme of Projects where a scoping report has been submitted.</li> </ul>
<b>Tier 3</b>	<ul style="list-style-type: none"> <li>Projects on the Planning Inspectorate’s Programme of Projects where a scoping report has not been submitted.</li> <li>Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals.</li> </ul>

Tier	Description
	<ul style="list-style-type: none"> <li>Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.</li> </ul>

#### 19.3.2.4 Standard Mitigation

96. A range of standard mitigation measures has already been applied to the Offshore Project as part of the over-arching site selection and iterative design process (see below and **Chapter 4: Site Selection and Assessment of Alternatives**). These have been introduced in order to minimise potential impacts of the Windfarm Site on any effected receptors.
97. Standard mitigation measures which the Applicant has already implemented for the Offshore Project, or is committed to in the future, in order to minimise potential impacts on seascape, landscape and visual receptors are listed below.
- Maximum blade tip height is 284 m from Mean Sea Level (MSL) and maximum rotor diameter of 262 m
  - The colour of the WTG tower and blades will be agreed with relevant stakeholders and will likely be RAL 7035 (light grey) from 15 m above water line which provides standard mitigation as a recessive colour in the seascape/sky backdrop. The Structure (Floater and Tower) will likely be painted RAL 1023 (traffic yellow) from the Floater Water Line to approximately +15 m above Floater Water Line
  - The Offshore Project will comply with legal requirements with regards to shipping, navigation and aviation marking and lighting
  - The Applicant will agree a lighting scheme for the aviation lighting of structures (turbines and offshore support platforms) with the relevant authorities.

#### 19.3.2.5 Further Embedded Mitigation Included in the Offshore Project

98. The maximum WTG height has been reduced from the ~354 m above MSL included at the scoping stage to 262 m above MSL.
99. Aviation warning lights will enable a reduction in lighting intensity from 2000 candela to 200 candela when sensors mounted on WTGs detect the visibility in all directions is more than 5km.

#### 19.3.2.6 Assessment for Residual Effect Significance

100. The impact assessments and conclusions on significance of effect presented in **Section 19.7** assume that these standard and embedded further mitigation



measures listed above have been successfully implemented. The SLVIA does not consider further mitigation measures as part of the assessment.

### 19.3.3 Worst-Case Scenario

101. In accordance with the assessment approach to the Project Design Envelope, or ‘Rochdale Envelope’, set out in **Chapter 6: EIA Methodology**, the impact assessment for offshore seascape, landscape, and visual amenity has been undertaken based on a realistic worst-case scenario of predicted impacts. The Project Design Envelope for the Offshore Project is detailed in **Chapter 5: Project Description** and was agreed with consultees through the pre-application ETG process.
102. **Table 19.6** presents the realistic worst-case scenario elements considered for the assessment of offshore seascape, landscape, and visual amenity.

*Table 19.6 Definition of realistic worst-case scenario details relevant to the assessment of impacts in relation to offshore seascape, landscape, and visual amenity*

Impact	Realistic worst-case scenario	Rationale
<b>Construction and Decommissioning Phases</b>		
<b>Offshore Cable Corridor</b>	Length of two offshore cable corridor, link to shore: 187.2km Number of main laying vessels, burial, and support vessels: 10 Number of return trips of main laying vessels, burial, and support vessels: 15	The parameters represent the maximum influence of vessels in the offshore cable corridor that would potentially impact seascape, landscape, and visual receptors during the offshore cable corridor construction phase.
<b>Inter-array cable</b>	Total array cable length: 29.76km Number of main laying, burial, and support vessels: 4 Number of return trips of main laying, burial, and support vessels: 20	The parameters represent the maximum influence of vessels that would potentially impact seascape, landscape, and visual receptors during the inter-array cable corridor construction phase.
<b>WTGs</b>	Maximum height WTGs scenario Number of WTGs: 6 Blade tip height above MSL: 284m Rotor diameter: 262m In row minimum spacing: 1310m Inter row minimum spacing: 2,620m Assumed locations as per <b>Figure 19.2</b> . Floating substructure envelope: Overall length of each face 125m WTG installation:	The parameters represent the maximum influence of construction of the floating WTGs in the Windfarm Site that would potentially impact seascape, landscape and visual receptors during the construction and decommissioning phase. The WTGs have been positioned in the Windfarm Site to be closest to the coastlines within the study area as shown on <b>Figure 19.2</b> .

Impact	Realistic worst-case scenario	Rationale
	Number of installation vessels: 12 Number of installation vessels round trips: 37	
<b>Offshore substation platform (OSP)</b>	Maximum number of OSPs: 1 Topside structure length and width: 50m x 40m Topside height: 80m above MSL Height of lightning protection & ancillary structures above MSL: 115 m. Assumed locations as per <b>Figure 19.2.</b>	The parameters represent the maximum influence of construction of the OSP in the Windfarm Site that would potentially impact seascape, landscape, and visual receptors during the construction phase.
<b>Operation and Maintenance Phase</b>		
<b>WTGs</b>	Maximum height WTGs scenario Maximum number of WTGs: 6 Blade tip height above MSL: 284m Rotor diameter: 262m In row minimum spacing: 1310m Inter row minimum spacing: 2,620m Assumed locations as per <b>Figure 19.2.</b> Floating substructure envelope: Overall length of each face 125m WTG installation: Number of vessels: 12 Number of vessels round trips: 56	The parameters represent the maximum influence of operation of the WTGs in the Windfarm Site that would potentially impact seascape, landscape, and visual receptors during the construction phase. The use of a height above MHWS for SLVIA reflects the fact that the WTGs are floating, and this represents a realistic worst case scenario.
<b>WTG lighting</b>	Maximum number of WTGs scenario 8 visible aviation lights mounted at hub height (height of aviation light) (m) above HAT: 132m, on each WTG. Red, medium intensity aviation warning lights (2000 candela (cd)) located on either side of WTG nacelle (hub) of all peripheral WTGs of layout shown in <b>Figure 19.3.</b> When sensors mounted on WTGs detect the visibility in all directions from every wind turbine is more than 5km aviation warning lights will enable a reduction in lighting intensity from 2000 candela to 200 candela.	The parameters represent the maximum WTG lighting that may potentially impact seascape, landscape, and visual receptors at night. The WTGs and offshore substations will be lit in accordance with the International Association of Lighthouse Authorities (IALA) standards and Civil Aviation Authority (CAA) requirements, based on the following further assumptions: Aviation warning lights will flash simultaneously with a Morse W flash pattern and be able to be switched on and off by means of twilight switches. Aviation warning lights will have reduced intensity at and below the horizontal and allow a further

Impact	Realistic worst-case scenario	Rationale
		<p>reduction in lighting intensity when the visibility in all directions from every WTG is more than 5km.</p> <p>Search and rescue (SAR) lighting of each of the non-periphery WTGs will be combi infra-red (IR)/200cd steady red aviation hazard lights are not assessed, as they will not be switched during normal operations and only infrequently during SAR operations.</p> <p>All WTGs will be fitted with a low intensity light for the purpose of helicopter winching (green hoist lamp) and will also be fitted with suitable illumination (minimum one 5cd light) for ID signs; and Marine aid to navigation lights will be synchronized to display simultaneously an IALA 'special mark' characteristic, flashing yellow, with a range of not less than five (5) nautical miles.</p>
<b>Offshore substation platform (OSP)</b>	<p>Maximum number of OSPs: 1            Topside structure length and width: 50m x 40m            Topside height: 80 m above MSL            Height of lightning protection &amp; ancillary structures above MSL: 115m            Assumed locations as per <b>Figure 19.2</b></p>	<p>The parameters represent the maximum influence of construction of the OSP in the Windfarm Site that would potentially impact seascape, landscape, and visual receptors during the construction phase.</p> <p>The exact location, design and visual appearance will be subject to a structural study and electrical design, which is expected to be completed post consent. The offshore substation will be installed on jacket or monopile foundations.</p>

### 19.3.4 Summary of Mitigation

## Embedded Mitigation

103. This section outlines the embedded mitigation relevant to the SLVIA, which has been incorporated into the design of the Offshore Project (**Table 19.7**). No other mitigation measures are proposed for SLVIA.
104. The mitigation includes embedded measures such as design changes and applied mitigation which is subject to further study or approval of details; these include avoidance measures that will be informed by pre-construction surveys, and necessary additional consents where relevant. The composite of embedded and applied mitigation measures apply to all parts of the Offshore Project development works, including pre-construction, construction, operation and maintenance, and decommissioning. The subsequent assessment stage of the EIA is based on the ‘mitigated’ design, for the ‘worst-case scenario’.

*Table 19.7 Embedded mitigation measures relevant to the SLVIA*

Component/Activity	Mitigation embedded into the design of the Offshore Project
<b>WTGs</b>	<p>The maximum blade tip height has been reduced to 284 m above MSL, from ~345 m above MSL proposed at the Scoping stage. The maximum rotor diameter will be 262 m. This commitment defines the maximum height of WTGs that could be installed.</p> <p>The colour of the WTG tower and blades will be agreed with relevant stakeholders and will likely be RAL 7035 (light grey) from 15 m above water line which provides standard mitigation as a recessive colour in the seascape/sky backdrop. The structure (Floater and Tower) will likely be painted RAL 1023 (traffic yellow) from the Floater Water Line to approximately +15 m above Floater Water Line.</p>
<b>Lighting</b>	<p>A lighting scheme will be agreed for the aviation lighting of structures (WTGs and OSP) with relevant authorities. Given the sensitivity of the night skies within the Study area to lighting the Applicant has committed to introduce mitigation for the aviation lighting effects. It is proposed that a detection system will be mounted on the offshore WTGs, and these will detect when visibility is greater than 5km. When this is the case the aviation lights will be dimmed to 10% of the 2000 candela maximum so that the intensity of the light emitted would be 200 candela. This accords with CAA guidance.</p> <p>The reduced intensity above and below the horizontal, as set out in ICAO, (2018) and described in <b>Section 19.2.1</b> would also be applicable when the 200 candela lights are operational.</p> <p>Whilst it is not included in the assessment there is also potential for further mitigation to reduce the number of WTGs fitted with aviation lights as Article 223 of the Air Navigation Order 2016 allows the following:</p>

Component/Activity	Mitigation embedded into the design of the Offshore Project
	<p><i>“(3) If four or more wind turbine generators are located together in the same group, with the permission of the CAA only those on the periphery of the group need be fitted with a light in accordance with paragraph (2).”</i></p> <p>This commitment provides for minimising lighting impacts as far practicable, whilst ensuring compliance with legal requirements for lighting and marking the WTGs and OSP.</p> <p>When sensors mounted on WTGs detect the visibility in all directions from every wind turbine is more than 5km aviation warning lights will enable a reduction in lighting intensity from 2000 candela to 200 candela.</p>

### 19.3.5 Baseline Data Sources

#### 19.3.5.1 Desktop Study

105. A desktop study was undertaken to obtain information on offshore seascape, landscape, and visual amenity. Data was acquired within the study area through a detailed desktop review of existing studies and datasets. Agreement was reached with all consultees that the data collected, and the sources used to define the baseline characterisation for offshore seascape, landscape, and visual amenity are fit for the purpose of the EIA (see **Section 19.3.8**).

106. The sources of data presented in **Table 19.8** were consulted to inform the SLVIA.

*Table 19.8 Data sources used to inform the SLVIA*

Source	Summary
<b>Campaign to Protect Rural England</b>	Interactive maps of the UK’s light pollution and dark skies as part of a national mapping project (LUC/CPRE, 2016). Open Source data used to understand and illustrate baseline lighting levels. ( <a href="https://www.nightblight.cpre.org.uk/">https://www.nightblight.cpre.org.uk/</a> )
<b>Cornwall Council</b>	The Cornwall Local Plan adopted November 2016, which provides the planning policy framework for Cornwall up to 2030. ( <a href="https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/#localPlan">https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/#localPlan</a> )
<b>Cornwall Council</b>	Cornwall landscape character best practice guide. Adopted by Cornwall Council June 2011.
<b>Devon County Council</b>	Devon Landscape Character Areas ( <a href="https://www.devon.gov.uk/planning/planning-policies/landscape/devons-landscape-character-assessment/">https://www.devon.gov.uk/planning/planning-policies/landscape/devons-landscape-character-assessment/</a> )
<b>English Heritage</b>	Any specific visitor attractions / tourist destinations. ( <a href="https://www.english-heritage.org.uk/visit/places/#?page=1&amp;place=&amp;mp=false&amp;fe=false">https://www.english-heritage.org.uk/visit/places/#?page=1&amp;place=&amp;mp=false&amp;fe=false</a> )

Source	Summary
<b>Google Earth Pro</b>	Aerial photography.
<b>CADW</b>	Registered Historic Parks and Gardens in Wales. ( <a href="https://rcahmw.gov.uk/the-register-of-historic-parks-and-gardens-in-wales/">https://rcahmw.gov.uk/the-register-of-historic-parks-and-gardens-in-wales/</a> )
<b>Long Distance Walkers Association</b>	Overview map for Long Distance Paths and Walks. <a href="https://www.ldwa.org.uk/ldp/public/ldp_overview_map.php">https://www.ldwa.org.uk/ldp/public/ldp_overview_map.php</a> )
<b>Met Office</b>	Visibility data. Visibility bands every 1km up to 30km, then every 5km up to 50km, then every 10km up to 70km, and >70km. Chivenor synoptic weather station, Devon.
<b>MMO</b>	Marine Character Areas. Marine Management Organisation (MMO), June 2014 Seascape assessment for the South Marine Plan Areas: Technical Report (MMO 1037). ( <a href="https://www.gov.uk/government/publications/the-south-marine-plans-documents">https://www.gov.uk/government/publications/the-south-marine-plans-documents</a> )
<b>National Trust</b>	Any specific visitor attractions / tourist destinations. ( <a href="https://www.nationaltrust.org.uk/days-out">https://www.nationaltrust.org.uk/days-out</a> )
<b>Natural England</b>	National Character Areas (NCAs). ( <a href="http://www.gov.uk">National Character Area profiles - GOV.UK (www.gov.uk)</a> )
<b>Natural England</b>	Geographical Information System (GIS) datasets for: National Parks ( <a href="https://data.gov.uk/dataset/334e1b27-e193-4ef5-b14e-696b58bb7e95/national-parks-england">https://data.gov.uk/dataset/334e1b27-e193-4ef5-b14e-696b58bb7e95/national-parks-england</a> ). Areas of Outstanding Natural Beauty (AONB) ( <a href="https://data.gov.uk/dataset/8e3ae3b9-a827-47f1-b025-f08527a4e84e/areas-of-outstanding-natural-beauty-england">https://data.gov.uk/dataset/8e3ae3b9-a827-47f1-b025-f08527a4e84e/areas-of-outstanding-natural-beauty-england</a> ) County Parks ( <a href="https://data.gov.uk/dataset/e729abb9-aa6c-42c5-baec-b6673e2b3a62/country-parks-england">https://data.gov.uk/dataset/e729abb9-aa6c-42c5-baec-b6673e2b3a62/country-parks-england</a> ). Open Access Land ( <a href="https://data.gov.uk/dataset/05fa192a-06ba-4b2b-b98c-5b6bec5ff638/crow-act-2000-access-layer">https://data.gov.uk/dataset/05fa192a-06ba-4b2b-b98c-5b6bec5ff638/crow-act-2000-access-layer</a> ). Heritage Coasts ( <a href="https://data.gov.uk/dataset/79b3515f-b00e-419a-9c7e-1d3163555886/heritage-coasts">https://data.gov.uk/dataset/79b3515f-b00e-419a-9c7e-1d3163555886/heritage-coasts</a> )
<b>North Devon and Torridge Local Councils</b>	North Devon and Torridge Local Plan 2011-2031. ( <a href="https://consult.torridge.gov.uk/portal/planning/localplan/adoption/">https://consult.torridge.gov.uk/portal/planning/localplan/adoption/</a> )
<b>North Devon and Torridge Local Councils</b>	A Joint Landscape Character Assessment (LCA) adopted by Torridge Local Council and North Devon Council. ( <a href="https://www.torridge.gov.uk/article/11273/Joint-Landscape-Character-Assessment-for-North-Devon-and-Torridge-Locals">https://www.torridge.gov.uk/article/11273/Joint-Landscape-Character-Assessment-for-North-Devon-and-Torridge-Locals</a> )
<b>North Devon and Torridge Local Council</b>	North Devon and Exmoor Seascape Character Assessment adopted by Torridge Local Council. ( <a href="https://www.torridge.gov.uk/article/16137/North-Devon-and-Exmoor-Seascape-Character-Assessment">https://www.torridge.gov.uk/article/16137/North-Devon-and-Exmoor-Seascape-Character-Assessment</a> )
<b>Natural Resources Wales (NRW)</b>	National Seascape Assessment for Wales (NRW Evidence Report No. 80). ( <a href="https://naturalresources.wales/media/682028/mca-00-technical-report-summary-method-appendix.pdf">https://naturalresources.wales/media/682028/mca-00-technical-report-summary-method-appendix.pdf</a> )



Source	Summary
<b>NRW</b>	Wales National Landscape Character Areas. ( <a href="https://naturalresources.wales/evidence-and-data/maps/nlca/?lang=en">https://naturalresources.wales/evidence-and-data/maps/nlca/?lang=en</a> )
<b>NRW</b>	LANDMAP. ( <a href="https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en">https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en</a> )
<b>NRW</b>	Dark Skies and Light Pollution Map Wales. ( <a href="https://luc.maps.arcgis.com/apps/opdashboard/index.html#/1cd6ba8a1d7d4a62aff635cfcbaf4aec">https://luc.maps.arcgis.com/apps/opdashboard/index.html#/1cd6ba8a1d7d4a62aff635cfcbaf4aec</a> )
<b>NRW</b>	Seascape and visual sensitivity to offshore windfarms in Wales: Strategic assessment and guidance. Stage 3- Seascape and visual sensitivity assessment for offshore wind farms (White, S. Michaels, S. King, H, 2019). ( <a href="https://cdn.naturalresources.wales/media/689508/eng-evidence-report-331-seascape-and-visual-sensitivity-to-offshore-wind-farms-in-wales.pdf">https://cdn.naturalresources.wales/media/689508/eng-evidence-report-331-seascape-and-visual-sensitivity-to-offshore-wind-farms-in-wales.pdf</a> )
<b>Optimised Environments Ltd internal dataset</b>	Public Rights of Way
<b>Ordnance Survey (OS)</b>	1:50,000 scale mapping
<b>Ordnance Survey</b>	1:25,000 scale mapping
<b>Ordnance Survey Open Data</b>	OS County Region, Local Unitary Authority, Railways, Road, and Settlements
<b>Ordnance Survey</b>	OS Terrain 50 Digital Terrain Model (DTM)
<b>Ordnance Survey</b>	OS Terrain 5 Digital Terrain Model (DTM)
<b>Pembrokeshire Coast National Park Authority (PCNPA)</b>	Pembrokeshire Coast National Park Local Development Plan 2 (end date 2031). ( <a href="https://www.pembrokeshirecoast.wales/planning/planning-policy/local-development-plan-2/">https://www.pembrokeshirecoast.wales/planning/planning-policy/local-development-plan-2/</a> )
<b>PCNPA</b>	Pembrokeshire Coast National Park Management Plan 2020-2024. ( <a href="https://www.pembrokeshirecoast.wales/about-the-national-park-authority/national-park-management-plan/">https://www.pembrokeshirecoast.wales/about-the-national-park-authority/national-park-management-plan/</a> )
<b>PCNPA</b>	Pembrokeshire Coast National Park Authority, Seascape Character Assessment, Interim Supplementary Planning Guidance Local Development Plan 2 NPA (September 2020). ( <a href="https://www.pembrokeshirecoast.wales/planning/planning-policy/local-development-plan-2/supplementary-planning-guidance-ldp2/seascape-character-supplementary-planning-guidance-interim/">https://www.pembrokeshirecoast.wales/planning/planning-policy/local-development-plan-2/supplementary-planning-guidance-ldp2/seascape-character-supplementary-planning-guidance-interim/</a> )
<b>PCNPA</b>	Pembrokeshire Coast National Park, Landscape Character, Supplementary Planning Guidance.



Source	Summary
	( <a href="https://www.pembrokeshirecoast.wales/planning/planning-policy/local-development-plan-2/supplementary-planning-guidance-ldp2/landscape-supplementary-planning-guidance-interim/">https://www.pembrokeshirecoast.wales/planning/planning-policy/local-development-plan-2/supplementary-planning-guidance-ldp2/landscape-supplementary-planning-guidance-interim/</a> )
<b>Sustrans</b>	National Cycle Network (GIS dataset) (available online: <a href="https://www.sustrans.org.uk/">https://www.sustrans.org.uk/</a> )

### 19.3.5.2 Site Specific Survey

107. To inform the EIA, site-specific surveys were undertaken, as agreed with the statutory consultees. A summary of surveys is outlined in **Table 19.9**.

*Table 19.9 Summary of site-specific survey data*

Survey name and year	Summary
<b>September 2022</b>	SLVIA surveys primarily within the Pembrokeshire, Devon, and Cornwall coasts, and Lundy Island, to undertake viewpoint photography and collect baseline data on seascape character, landscape character and visual amenity associated with views of the Proposed Development and in accordance with methodology such as in GLVIA3 (Landscape Institute, 2013) and TGN 06/19 (Landscape Institute, 2019).
<b>November 2022</b>	Viewpoint photography for Embury Beacon viewpoint, requested by North Devon AONB. Conducted in accordance with methodology such as in GLVIA3 (Landscape Institute, 2013) and TGN 06/19 (Landscape Institute, 2019).

### 19.3.6 Data Limitations

108. There are some data limitations relating to SLVIA however these do not affect the robustness of this assessment as the gaps are limited and do not affect the assessments of likely significance assessed for relevant receptors.

109. There are limitations in the production of photomontage and wireline visualisations and ZTVs as assessment tools, and limitations in the accuracy of digital terrain model (DTM) data, which are described in **Appendix 19.A: SLVIA Methodology**. The use of detailed terrain models (OS Terrain 5), production of visualisations to recognised standard and field survey assessment of impacts minimises these limitations.

110. As agreed with Stakeholders at ETG, photomontage visualisations have only been prepared from Viewpoint 2: Hartland Point, Viewpoint 6: Lundy Island, Old Light, Viewpoint 8: Tintagel, and Viewpoint 10: Embury Beacon. The SLVIA provides wireline visualisations for these, and each of the remaining representative viewpoints. Wirelines provide a simple graphic representation of the WTGs and landform, without photographic context. The wireline views therefore over represents their actual

visibility. This is as a result of their low degree of contrast with the sea backdrop and the scale of the components along with visual acuity.

111. Met Office visibility data has limitations in its application to judgements about wind farm visibility. The visibility data provides some understanding and evidence basis for evaluating the visibility of the WTGs against their background. Effects have not been downgraded either in magnitude or significance due to variations as a result of weather/visibility and how frequently/infrequently the effects will be experienced. Effects are based on the worst-case with clear visibility and need to be considered in context of the limited time effects will actually occur.
112. Some data limitations are a consequence of the timing of site photography and weather conditions. As evidenced by the Met Office visibility data (**Section 19.4.5**), conditions of 'Very Good' and 'Excellent' visibility are infrequent across most months of the year. However, limitations have been minimised through the timing of surveys when visibility is sufficient to identify the horizon and therefore accurately represent the Windfarm Site in visualisations.
113. As described in full in **Section 19.14**, there are limitations with regards projects included in the cumulative effects assessment, particularly those at Scoping stage, in terms of the degree to which they are well-defined or of sufficient detail to the point that they can be assessed, and how likely the projects are to be taken forward as currently defined.

### 19.3.7 Scope

114. Upon consideration of the baseline environment, the project description outlined in **Chapter 5: Project Description**, and Scoping Opinion (Case reference: EIA/2022/00002), potential impacts upon offshore seascape, landscape, and visual amenity have been scoped in or out. These impacts are outlined, together with a justification for why they are or are not considered further, in **Table 19.10** and **Table 19.11** respectively.
115. The general principle is that receptors that could experience significant effects will be identified based on their sensitivity/importance/value and the spatial and temporal scope of the assessment. Consultation has also informed the selection of potential receptors that could experience significant effects from the Offshore Project.
116. The assessment of whether an effect has the potential to be of likely significance has been based upon review of existing evidence base, consideration of commitments made (embedded mitigation measures), professional judgement and where relevant, recommended aspect specific methodologies and established practice. In applying

this judgement, use has been made of a simple test that to be significant an effect must be of sufficient importance that it should be taken into consideration when making a development consent decision.

117. To ensure the provision of a proportionate EIA and an ES that is focused on likely significant effects, the assessment takes into account the considerable levels of existing environmental information available, extensive local geographical knowledge and understanding of the site and surroundings gained from ongoing site selection analysis and environmental surveys.

*Table 19.10 Summary of impacts scoped in relating to offshore seascape, landscape, and visual amenity*

Potential Impact	Justification
<b>Construction and decommissioning</b>	
<b>Impact of daytime visibility of the construction and decommissioning of the WTGs and OSP within the Windfarm Site on seascape character.</b>	Potential for short-term, temporary impacts on perceived seascape character, arising as a result of the construction and decommissioning activities and structures located within the Windfarm Site, which may alter the seascape character directly, and the perceived character of the wider seascape indirectly i.e., through visibility of these changes.
<b>Impact of daytime visibility of the construction and decommissioning of the WTGs and OSP within the Windfarm Site on landscape character of Lundy Island and Lundy Heritage Coast.</b>	Potential for short-term, temporary impacts on perceived landscape character, arising as a result of the construction and decommissioning activities and structures located within the Windfarm Site, which may be visible from Lundy Island (during good to excellent visibility conditions) and may therefore impact the perceived character of the landscape.
<b>Impact of daytime visibility of the construction and decommissioning of the WTGs and OSP within the Windfarm Site on people visiting Lundy Island.</b>	Potential for short-term, temporary impacts on views and visual amenity experienced by people from principal visual receptors and representative viewpoints, arising as a result of the construction and decommissioning activities and structures, which may be visible from the Lundy Island (during good to excellent visibility conditions) and may therefore impact views and visual amenity.
<b>Impact of night-time visibility of the lighting within the Windfarm Site during construction and decommissioning on people visiting Lundy Island.</b>	Potential for short-term, temporary impacts on views and visual amenity experienced by people from Lundy Island, arising as a result of the lighting of structures during construction and decommissioning within the Windfarm Site, which may include CAA and marine navigation lighting, which may impact night-time views.
<b>Impact of daytime visibility of the construction and decommissioning</b>	As agreed with Stakeholders, the scope of the assessment includes the potential impact of daytime

<b>Potential Impact</b>	<b>Justification</b>
<b>of the WTGs and OSP on representative viewpoint locations</b>	<p>visibility on representative viewpoint locations agreed during Scoping and consultation within the 60km study area.</p> <p>Potential for short-term, temporary impacts on views and visual amenity experienced by people from principal visual receptors and representative viewpoints, arising as a result of the construction and decommissioning activities and structures, which may be visible from the coast (during good to excellent visibility conditions) and may therefore impact views and visual amenity.</p>
<b>Impact of daytime visibility of the construction and decommissioning of the WTGs and OSP within the Windfarm Site on the Pembrokeshire Coast National Park, North Devon Coast Area of Outstanding Natural Beauty, and Cornwall Area of Outstanding Natural Beauty landscape designations and associative defined areas of Heritage Coast.</b>	<p>As agreed with Stakeholders, the scope of the assessment includes the impact of daytime visibility on the designated coastal landscapes within the 60km study area.</p> <p>Potential for short-term, temporary impacts on perceived landscape character and special qualities of designated landscapes, arising as a result of the construction and decommissioning activities and structures within the Windfarm Site, which may be visible (during good to excellent visibility conditions) and may therefore impact the perceived character and qualities of the landscape.</p>
<b>Impact of daytime visibility of the construction and decommissioning of the WTGs and OSP within the Windfarm Site on users of the South West Coast Path and Pembrokeshire Coast Path.</b>	<p>As agreed with Stakeholders, the scope of the assessment includes the impact of daytime visibility on users of the SWCP and PCP.</p> <p>Potential for short-term, temporary impacts on views and visual amenity experienced by people from principal visual receptors including users of the SWCP and PCP, arising as a result of the construction and decommissioning activities and structures, which may be visible from the coast (during good to excellent visibility conditions) and may therefore impact views and visual amenity from these long distance recreational routes.</p>
<b>Cumulative effects.</b>	<p>The activities and structures during construction and decommissioning located within the Windfarm Site will alter the seascape character of the Windfarm Site itself through alterations to it. This may result in cumulative effects on seascape character through the addition of the Offshore Project to a seascape effected by other cumulative offshore developments.</p>
<b>Operation and maintenance</b>	

<b>Potential Impact</b>	<b>Justification</b>
<b>Impact of daytime visibility the WTGs and OSP within the Windfarm Site on seascape character during operation and maintenance.</b>	Potential for long-term, reversible impacts on seascape character through the operation and maintenance of the WTGs and OSP within the Windfarm Site as well as views of this from the surrounding seascape.
<b>Impact of daytime visibility of the WTGs and OSP within the Windfarm Site during operation and maintenance on landscape character of Lundy Island and Lundy Heritage Coast.</b>	Potential for long-term, reversible impacts as a result of views of the operation and maintenance of the WTGs and OSP from the landscape, planning designations and visual amenity within the Study area.
<b>Impact of night-time visibility of the WTGs and OSP within the Windfarm Site during operation and maintenance on people visiting Lundy Island.</b>	Potential for long-term, reversible impacts on visual receptors at Lundy Island may arise night due to lighting of the offshore WTGs during operation and maintenance, which may include CAA and marine navigation lighting, which may impact night-time views.
<b>Impact of daytime visibility during operation and maintenance on representative viewpoint locations</b>	As agreed with Stakeholders, the scope of the assessment includes the potential for long-term, reversible impacts of daytime visibility of the operation and maintenance of the WTGs and OSP on representative viewpoint locations agreed during Scoping and consultation within the 60km study area.
<b>Impact of daytime visibility of the WTGs and OSP within the Windfarm Site during operation and maintenance on the Pembrokeshire Coast National Park, North Devon Coast Area of Outstanding Natural Beauty, and Cornwall Area of Outstanding Natural Beauty landscape designations and associative defined areas of Heritage Coast.</b>	As agreed with Stakeholders, the scope of the assessment includes the potential for long-term, reversible impacts of daytime visibility of the operation and maintenance of the WTGs and OSP on the designated coastal landscapes within the 60km study area.
<b>Impact of daytime visibility of the WTGs and OSP within the Windfarm Site during operation and maintenance on users of the South West Coast Path and Pembrokeshire Coast Path.</b>	As agreed with Stakeholders, the scope of the assessment includes the potential for long-term, reversible impacts of daytime visibility of the operation and maintenance of the WTGs and OSP on users of the South West Coast Path and Pembrokeshire Coast Path.
<b>Cumulative effects during operation and maintenance.</b>	The activities and structures located within the Windfarm Site during operation and maintenance will alter the seascape character of the Windfarm Site itself through alterations to it. This may result in cumulative effects on seascape character through the addition of the Offshore Project to a seascape

Potential Impact	Justification
	effected by other cumulative offshore developments.

*Table 19.11 Summary of impacts scoped out relating to offshore seascape, landscape, and visual amenity*

Potential Impact	Justification
<b>Construction and decommissioning</b>	
<b>Construction and decommissioning of the Offshore Export Cable Corridor.</b>	It is proposed to scope out the construction and decommissioning of the offshore cable route as this is unlikely to result in significant effects. The only evidence of this activity above the sea surface will be a small number of vessels within the seascape, which is not an uncommon feature of existing views.
<b>Operation and maintenance</b>	
<b>Operation and maintenance of the Offshore Export Cable Corridor.</b>	It is proposed to scope out the potential impacts of the offshore cable route during operation and maintenance as this is unlikely to result in significant effects. The only evidence of this activity above the sea surface will be a small number of vessels within the seascape, which is not an uncommon feature of existing views.

### 19.3.8 Consultation

118. Consultation has been a key part of the development of the Offshore Project. Consultation regarding SLVIA has been conducted throughout the EIA. An overview of the project consultation process is presented within **Chapter 7: Consultation**.
119. A summary of the key issues raised during consultation specific to SLVIA is outlined below in **Table 19.12**, together with how these issues have been considered in the production of this ES.

*Table 19.12 Consultation responses*

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
<b>Marine Management Organisation</b>	30 May 2022, Scoping Opinion (MMO Reference: EIA/2022/0002,	<i>6.12.1: Impacts during night time would be caused by the lighting of offshore infrastructure, wind turbines, vessels markers. Therefore the MMO does not agree that this can be scoped out of the assessment during the</i>	Night-time visual impacts from visible aviation lighting are considered in <b>Section 19.8</b>



Consultee	Date, Document, Forum	Comment	Where addressed in the ES
	Scoping Opinion	<p><i>construction and decommissioning periods.</i></p> <p><i>6.12.2: The MMO considers that due to the potential maximum height of the WTGs, their proximity to designated seascapes and landscapes there is potential for the offshore components of the Proposed Development to give rise to likely significant effects, including cumulative effects, to landscape and visual receptors beyond the proposed study area of 50km radius around the Windfarm Sites. On that basis, the MMO considers that the study area for impacts from the Windfarm Sites should be determined relevant to the extent of the impacts and the potential for significant effects. This may result in a study area beyond the 50km specified and the Applicant should make effort to agree this with relevant consultation bodies.</i></p> <p><i>The selection of the study area should be informed by the Zone of Theoretical Visibility (ZTV). The MMO consider that the elevated sensitivity of the views from the designated landscape may not be appropriately reflected in this approach. The MMO advise that the effects on the designated landscapes are assessed on the basis of their sensitivity and the magnitude of the change to them irrespective of the range at which these are experienced.</i></p>	<p>Following ETG consultation on 11/10/22 The SLVIA study area radius has been revised to 60km, as set out in <b>Section 19.3.1</b>.</p>



Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>6.12.4: The two northern sections of the CAONB designated landscape, Hartland (Section 1) and Pentire Point to Widemouth (Section 2) are located just outside the 50km study area for the SLVIA. The MMO recognise that Viewpoint 3 - Vicarage Cliff and Viewpoint 5 Penhalt Cliff within the two sections of the AONB have been included, the MMO require the Applicant to engage with Cornwall AONB to ensure that these provide the most appropriate representative viewpoints for the consideration of the potential effects on designated landscape.</i></p>	<p>Three additional viewpoints have been requested; two by the National Trust, at Tintagel and Pentire Head; and at Embury Beacon requested by North Devon AONB. These viewpoints have been included in the assessment in <b>Section 19.7.1</b>. Following ETG consultation on 11/10/22 The SLVIA study area has been revised to 60km, as set out in <b>Section 19.3.1</b>.</p>
		<p><i>6.12.5: It is recognises [sic] that when the viewpoint analysis is undertaken this is provided in accordance with best practice as set out by the Landscape Institute and SNH for the visual representation of windfarms and includes baseline photography, wires and photomontages. Whilst recognise the potentially very limited cumulative effects from the other offshore windfarms is recognised in this part of the Celtic Sea, these should be included on a separate set of wirelesss [sic] images for each viewpoint within the designated landscape where earth curvature would not preclude visibility to them.</i></p>	<p>Visualisations have been prepared in accordance with good practice guidance set out in <b>Appendix 19.A</b>.</p>
		<p><i>6.12.6: Viewpoints for the SLVIA should be also be agreed with both North Devon</i></p>	<p>Viewpoints have been agreed with Stakeholders in ETG consultation on 11/10/22. The</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>and Torridge Local Planning Authoritys [sic].</i></p> <p><i>6.12.8: The ES should refer to the relevant National Character Areas. Character area profiles set out descriptions of each landscape area and statements of environmental opportunity. The ES should also include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character.</i></p> <p><i>A landscape and visual impact assessment should also be carried out for the proposed development and surrounding area. Natural England recommends use of the methodology set out in Guidelines for Landscape and Visual Impact Assessment 2013 ((3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and Management.</i></p>	<p>assessment of agreed viewpoints is set out in <b>Section 19.7.1.</b></p> <p>National Character Area profiles, and local landscape character assessment, are considered in the baseline, set out in <b>Section 19.4</b>, and where relevant assessed in <b>Sections 19.11, 19.12, and 19.13.</b></p> <p>The potential for the Offshore Project to impact the special qualities of the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), Cornwall Area of Outstanding Natural Beauty (CAONB), and Heritage Coasts, has been considered in <b>Section 19.12</b> and <b>19.13</b> of the SLVIA.</p> <p>Potential cumulative effects are considered in <b>Section 19.14.</b></p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>For National Parks and AONBs, we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status.</i></p> <p><i>The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.</i></p>	
		<p><i>6.12.9: The MMO recommends early engagement is sought with the North Devon AONB regarding viewpoints and visual representations. Further justification should be provided for the 50km zone of theoretical visibility and concluding that beyond 50km landscape and visual impacts are unlikely to be significant. The ZTV indicates the potential for the wind farm to be seen from large parts of North Devon and Cornwall.</i></p>	<p>Viewpoints have been agreed with Stakeholders, including North Devon AONB, in stakeholder consultation on 11/10/22. The assessment of agreed viewpoints set out in <b>Section 19.7.1</b>.</p>

		<p><i>6.12.10: The development site is within or may impact on the North Devon Area of Outstanding Natural Beauty. The NPPF (paragraph 176) provides the highest level of planning protection for these nationally designated landscapes. Consideration should be given to the direct and indirect effects on this designated landscape and in particular the effect upon its purpose for designation. The management plan for the designated landscape may also have relevant information that should be considered in the EIA</i></p>	<p>The offshore elements of the Proposed Development considered within this SLVIA are not located within the North Devon Coast Area of Outstanding Natural Beauty.</p> <p>The potential for Offshore Project to impact the special qualities of the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), Cornwall Area of Outstanding Natural Beauty (CAONB), and Heritage Coasts, has been considered in <b>Section 19.12</b> and <b>19.13</b> of the SLVIA.</p>
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Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>6.12.11: The Proposed Development site is within the North Devon Heritage Coast. Heritage Coasts are protected under paragraph 178 of the NPPF. The ES should set out the impacts on the Heritage Coast and opportunities for enhancement.</i></p>	<p>The offshore elements of the Proposed Development considered within this SLVIA are not located within any area defined as Heritage Coast.</p> <p>The potential for the Offshore Project to impact the special qualities of the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), Cornwall Area of Outstanding Natural Beauty (CAONB), and Heritage Coasts, has been considered in <b>Section 19.12</b> and <b>19.13</b> of the SLVIA.</p>
<p><b>Cornwall AONB</b></p>	<p>15<sup>th</sup> March 2022, Consultation request on Scoping Report of White Cross Floating Offshore Windfarm EIA/2022/0002, Scoping Opinion</p>	<p><i>The two northern sections of the CAONB designated landscape, Hartland (Section 1) and Pentire Point to Widemouth (Section 2) are located just outside the 50km study area for the SLVIA. The MMO recognise that Viewpoint 3 - Vicarage Cliff and Viewpoint 5 Penhalt Cliff within the two sections of the AONB have been included, the MMO require the Applicant to engage with Cornwall AONB to ensure that these provide the most appropriate representative viewpoints for the consideration of the potential effects on designated landscape.</i></p>	<p>Three additional viewpoints have been requested; two by the National Trust, at Tintagel and Pentire Head; and at Embury Beacon requested by North Devon AONB. These viewpoints have been included in the assessment in <b>Section 19.7.1</b>.</p> <p>Following ETG consultation on 11/10/22 The SLVIA study area has been revised to 60km, as set out in <b>Section 19.3.1</b>.</p>
		<p><i>We would request that when the viewpoint analysis is undertaken this is provided in accordance with best practice as set out by the Landscape Institute and SNH for the</i></p>	<p>Visualisations have been prepared in accordance with good practice guidance set out in <b>Appendix 19.A</b>.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>visual representation of windfarms and includes baseline photography, wirelines, and photomontages. Whilst we recognise the potentially very limited cumulative effects from the other offshore windfarms envisaged in this part of the Celtic Sea these should be included on a separate set of wireline images for each viewpoint within the designated landscape where earth curvature would not preclude visibility to them.</i></p>	
		<p><i>We recognise the considerable distance between the AONB and the windfarm, but consider that, at up to 345m to blade tip, it is very likely that the turbines will be evident in some views from the designated landscape, albeit only in conditions of suitable visibility. The lighting associated with the turbines may also be visible.</i></p>	<p>The maximum height of the offshore WTGs has been reduced to 284 m to blade tip above MSL, as discussed in <b>Section 19.3.2</b> and <b>19.3.4</b>.</p> <p>Night-time visual impacts from visible aviation lighting are considered in <b>Section 19.8</b>.</p>
		<p><i>The Scoping Report suggests that 'Taking the above factors into account it is considered that the Project is unlikely to result in significant effects at distances over 50kmm particularly away from the immediate coast. Seascape, landscape and visual effects as a result of the Project are proposed to be scoped out beyond 50km. This premise will be substantiated in the PEIR though the inclusion of visualisations from a small number of viewpoints located at the closest / key locations</i></p>	<p>Following ETG consultation on 11/10/22 The SLVIA study area has been revised to 60km, as set out in <b>Section 19.3.1</b>.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>along the coast as shown on Figure 2.13.3.'. We have some concerns about this approach and consider that the elevated sensitivity of the views from the designated landscape may not be appropriately reflected in this approach. We would prefer that the effects on the designated landscapes are assessed on the basis of their sensitivity and magnitude of impact to them irrespective of the range at which these are experienced rather than on a premise that 'the Project is unlikely to result in significant effects at distances over 50km'.</i></p>	
<b>Historic England</b>	18 <sup>th</sup> March 2022, Document ref: PA01170209, Scoping Opinion	<p><i>Section 2.13 (Offshore Seascape, Landscape and Visual Amenity) – we are aware that this section identifies the seascape, landscape and visual receptors of relevance to the Offshore Development Area for the Project. In consideration of the 50km radius selected for the SLVIA Study area, we note in paragraph 725 that, theoretically, the proposed WTGs, of the height proposed, could be visible at distances up to and beyond 50km. We note from Figure 2.13.1, that Lundy Island is located between 40 and 50km from the proposed WTG array. Therefore, in consideration of EIA regulations and the assessment of the 'likely significant effects' of the proposed project, we recommend that the setting of</i></p>	Impacts on Heritage Assets are considered in <b>Chapter 16: Marine Archaeology and Cultural Heritage.</b>



Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>heritage assets located on Lundy are considered within the assessment to produce an ES. We therefore appreciate the inclusion of our published guidance on the Setting of Heritage Assets, as referenced in Appendix A (3.1.3 Guidance). However, we also recommend inclusion of Commercial Renewable Energy Development and the Historic Environment, Historic England Advice Note 15, published 2021.</i></p>	
<b>Torridge Local Council</b>	18 <sup>th</sup> March 2022, Document Ref: GE/0229/2022	<p><i>It is of the understanding that no direct operational development will occur within Torridge Local nonetheless, the proposed development will result in harm to the landscape and seascape along the North Devon and Coast AONB. It is noted that the Scoping Report identifies the landscape and visual receptors of relevance for both onshore and offshore and has acknowledged the onshore landscape designations and listed the Landscape and Seascape Character assessment materials. It is recommended to engage and seeks consultation with the North Devon and Coast AONB.</i></p> <p><i>The key policies considerations within the North Devon and Torridge Local Plans are reference within Table 4.3 of the Scoping Report however, there is an absence of the following relevant landscape Policy DM08A</i></p>	<p>The potential for the Offshore Project to impact the special qualities of the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), Cornwall Area of Outstanding Natural Beauty (CAONB), and Heritage Coasts, has been considered in <b>Section 19.12</b> and <b>19.13</b> of the SLVIA.</p> <p>Relevant planning policy is considered in the accompanying Planning Statement to this ES.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
<b>North Devon Council</b>	5 <sup>th</sup> April 2022, Document ref: ENQ/0150/2022, Scoping Opinion	<i>Broadly agree with the proposed scope for the Seascape, Landscape and Visual Impact Assessment (SLVIA) as defined by the Zone of Theoretical Visibility (ZTV). Viewpoints for the SLVIA should be agreed with both North Devon and Torridge LPAs in due course.</i>	Viewpoints have been agreed in ETG consultation on 11/10/22. Viewpoints included in the assessment are contained in <b>Section 19.7.1</b> .
<b>Natural England</b>	17 <sup>th</sup> March 2022, Document ref: 384007	<i><u>Landscape and visual impacts</u> The environmental assessment should refer to the relevant National Character Areas. Character area profiles set out descriptions of each landscape area and statements of environmental opportunity. The ES should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character. A landscape and visual impact assessment should also be carried out for the proposed development and surrounding area. Natural England recommends use of the</i>	<p>National Character Area profiles, and local landscape character assessment, are considered in the baseline, set out in <b>Section 19.4</b>, and where relevant assessed in <b>Sections 19.11, 19.12, and 19.13</b>.</p> <p>The potential for the Offshore Project to impact the special qualities of the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), Cornwall Area of Outstanding Natural Beauty (CAONB), and Heritage Coasts, has been considered in <b>Section 19.12 and 19.13</b> of the SLVIA.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>methodology set out in Guidelines for Landscape and Visual Impact Assessment 2013 ((3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and Management. For National Parks and AONBs, we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status. The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.</i></p> <p><i>To ensure high quality development that responds to and enhances local landscape character and distinctiveness, the siting and design of the proposed development should reflect local characteristics and, wherever possible, use local materials. Account should be taken of local design policies, design codes and guides as well as guidance in the National Design Guide and National Model Design Code. The ES should set out the measures to be taken to ensure the development will</i></p>	

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>deliver high standards of design and green infrastructure. It should also set out detail of layout alternatives, where appropriate, with a justification of the selected option in terms of landscape impact and benefit. Natural England's advice is that early engagement is sought with the North Devon AONB regarding viewpoints and visual representations. We also recommend further justification is provided for the 50km zone of theoretical visibility and concluding that beyond 50km landscape and visual impacts are unlikely to be significant. The ZTV indicates the potential for the wind farm to be seen from large parts of North Devon and Cornwall.</i></p>	
		<p><u><i>Nationally Designated Landscapes</i></u>  <i>The development site is within or may impact on the North Devon Area of Outstanding Natural Beauty. The NPPF (paragraph 176) provides the highest level of planning protection for these nationally designated landscapes. Public bodies have a duty to have regard to the statutory purposes of designation in carrying out their functions (under (section 11 A (2) of the National Parks and Access to the Countryside Act 1949 for National Parks and S85 of the Countryside and Rights of Way Act, 2000 for AONBs).</i></p>	<p>The potential for the Offshore Project to impact the special qualities of the Pembrokeshire Coast National Park (PCNP), North Devon Coast Area of Outstanding Natural Beauty (NDAONB), Cornwall Area of Outstanding Natural Beauty (CAONB), and Heritage Coasts, has been considered in <b>Section 19.12</b> and <b>19.13</b> of the SLVIA.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>Planning Practice Guidance confirms that this duty also applies to proposals outside the designated area but impacting on its natural beauty.</i></p> <p><i>Consideration should be given to the direct and indirect effects on this designated landscape and in particular the effect upon its purpose for designation. The management plan for the designated landscape may also have relevant information that should be considered in the EIA. The development site is within the North Devon Heritage Coast. Heritage Coasts are protected under paragraph 178 of the NPPF. The ES should set out the impacts on the Heritage Coast and opportunities for enhancement.</i></p>	
		<p><u><i>Connecting People with nature</i></u></p> <p><i>The ES should consider the potential impacts on the South West Coast Path National Trail and the Tarka Trail. They should also be considered as visual receptors in the LVIA. The National Trails website <a href="http://www.nationaltrail.co.uk">www.nationaltrail.co.uk</a> provides further information. The ES should consider potential impacts on access land, common land, public rights of way and, where appropriate, the England Coast Path and coastal access routes and coastal margin in the vicinity of the development, in line with NPPF paragraph 100. It should assess the scope to</i></p>	<p>The approach to the assessment of the South West Coast Path has been agreed in ETG consultation on 11/10/22. Impacts on this, and other long-distance recreational trails are included in the assessment are contained in <b>Section 19.7.1</b>.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>mitigate for any adverse impacts. Rights of Way Improvement Plans (ROWIP) can be used to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.</i></p> <p><i>Measures to help people to better access the countryside for quiet enjoyment and opportunities to connect with nature should be considered. Such measures could include reinstating existing footpaths or the creation of new footpaths, cycleways, and bridleways. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Access to nature within the development site should also be considered, including the role that natural links have in connecting habitats and providing potential pathways for movements of species.</i></p>	
<b>National Trust</b>	5 <sup>th</sup> May 2022, Re: White Cross Floating Offshore Wind Farm, Scoping Opinion	<p><i>There is a proposed study area of 50km from the proposed site of the windfarm, for the purpose of the seascape, landscape, and visual impact assessment (SLVIA), with viewpoints over 50km scoped out. This brings Lundy into the study area, with all parts of the mainland coast scoped out. Fig 2.13.3 shows large parts of the North Cornwall coast and</i></p>	<p>Following ETG consultation on 11/10/22 The SLVIA study area has been revised to 60km, as set out in <b>Section 19.3.1</b>.</p> <p>Viewpoints have been agreed in ETG consultation on 11/10/22. Viewpoints from Tintagel and Pentire Head has been included in the assessment in <b>Section 19.7.1</b>.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>some areas of the North Devon coast, including National Trust Land with AONB and Heritage Coast designations, within the Zone of Theoretical Visibility as 'higher visibility'.</i></p> <p><i>It is noted that the premise of a 50km study area will be substantiated through the inclusion of visualisations from a small number of viewpoints located at the closest/ key locations along the coast. In addition to those set out at Fig 2.13.3. The National Trust would request additional viewpoints at Tintagel and Pentire Head (east side of the Camel Estuary) to support this exercise and would request further consultation when the visualisations have been carried out. It is noted that the exact size and capacity of the wind turbines will be decided at a later stage of the project, however parameters set out in the Scoping Report states that the range will be 12-24 MW, with a height of approx. 345m (above mean sea level). Therefore, we look forward to the provision of further project specific information in relation to Landscape and Seascape, with clarification of location, number of turbines, turbine heights etc, accompanied by necessary viewshed analysis, including consideration of night-time lighting in visualisations.</i></p>	<p>Blade Tip, Hub Height, and Horizontal Angle ZTVs have been included in the accompanying figures to the SLVIA and are referenced throughout.</p> <p>Night-time visual impacts from visible aviation lighting are considered in <b>Section 19.8</b></p>



Consultee	Date, Document, Forum	Comment	Where addressed in the ES
<b>North Devon AONB</b>	24 <sup>th</sup> October 2022, RE: White Cross OWF - SLVIA meeting minutes	<p><i>The AONB Partnership therefore recommends, that additional viewpoints on the North Devon Coast should now be considered, especially if the area of search is increased to 60km. When the Atlantic Array was considered a number of key viewpoints were selected on the Hartland coast and whilst the White Cross windfarm proposal lies to the west of Lundy and not to the east, there are some useful viewpoints that could be considered. Our selections from that list would be Embury Beacon and Bursdon Moor.</i></p> <p><i>Embury Beacon</i></p> <p><i>This is a promontory Iron Age Hillfort (Scheduled Monument) in National Trust ownership. At 157 metres above sea level and it represents a fine viewpoint and one that illustrates a remote section of South West Coast Path. Inlands views have been affected by onshore wind developments, as well as views to the satellite station at GCHQ at Morwenstow,. However, the seaward views and views towards Lundy have yet to be affected by wind turbine deployment</i></p> <p><i>Hartland Quay</i></p> <p><i>We previously talked about Hartland Quay (not included as an Atlantic Array Viewpoint)</i></p>	<p>Viewpoints have been agreed in ETG consultation on 11/10/22. A viewpoint from Embury Beacon has been included in the assessment in <b>Section 19.7.1</b>.</p> <p>Illustrative wirelines from Baggy Point and Bursdon Moor are contained in <b>Appendix 19.B</b> and <b>Appendix 19.C</b> respectively but are not assessed in the SLVIA.</p> <p>Visualisations have been prepared in accordance with good practice guidance set out in <b>Section 19.2.4</b>.</p>

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>but in our opinion as a viewpoint it could be selected with a viewpoint either from the upper car park, or from the South West Coast Path (The Lookout on the Warren) which is 85 metres above sea level. This is a popular destination for visitors, more so than Hartland Point, and people come to the coast to experience its dramatic seascape which is one of the main reasons why the AONB was designated in 1960.</i></p> <p><i>Bursdon Moor</i></p> <p><i>Finally, if the decision is taken to extend the area of search to 60km, we would recommend the SSSI/SAC at Bursdon Moor. This is an inland location and 228 metres above sea level. It represents a wild remote, landscape which has numerous Scheduled Monuments (mainly Bronze Age burial mounds) as well a tradition culm grass moorland, which forms an important part of the Tintagel to Bideford Bay Coast SAC. Views from the moor have been affected by landward wind generation, but to date the views out to sea have not been compromised. The ZTVI re-produced in the presentation given last week, certainly illustrated that the windfarm could be visible from this viewpoint.</i></p> <p><i>Baggy Point</i></p>	

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>Whilst we accept that the northern part of the North Devon AONB is probably much too far away, well beyond even a 60km area of search, it is nonetheless a valid exercise to prove that you will not see the windfarm from this coast. We would agree with Officers from North Devon Council that the cliffs at Baggly Point would be a suitable location. Unlike the Hartland Coast, views towards the windfarm, would include Hartland Point and Lundy Island, with the development sitting in between. Whilst we appreciate the distances are great, what the Atlantic Array proved, was that when a windfarm is viewed between two land masses, you get a better sense of scale, viewing windfarm heights between two headlands. This in our opinion gives a greater perspective than an isolated windfarm set in a vast open expanse of ocean. The point made about allaying public fears regarding whether the windfarm will be visible is a valid point and it needs to be scoped out by proving categorically that the windfarm would not be visible.</i></p> <p><i>Such is the high visitor use of Baggly Point, we therefore would recommend a viewpoint from near the Old Coastguard Post on the headland of Baggly Point (approximately 80m</i></p>	

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
		<p><i>above sea level) this site is also owned by National Trust.</i></p> <p><i>With regard to production of evidence from each viewpoint, we would agree with others that the presentation of wireframes only, is unacceptable and we would recommend that a photomontage is produced, at the very least for Hartland Point.</i></p> <p><i>At the meeting, the point was raised that the developers of the Atlantic Array, also produced single frame images from some of the viewpoints. Given the distances involved this might be more appropriate way of producing evidence from the additional viewpoints. Our recommendation is that single frame photomontages could be produced for all the viewpoints we have suggested, unless this is too difficult to achieve. This could be the same format that was adopted by the Atlantic Array developers for Westward Ho! which was using a 50mm lens with a 39.6 horizontal field of view. This was presented on a A3 page, with a viewing distance of 500mm</i></p> <p><i>Our preference would be 85mm single frame images that could be illustrated on an A3 paper (landscape), but we would accept use of a 50mm lens.</i></p>	

Consultee	Date, Document, Forum	Comment	Where addressed in the ES
	17 <sup>th</sup> November 2022, RE: White Cross OWF - SLVIA meeting minutes	<p><i>With regard to photomontages, Embury Beacon is much higher than either Vicarage Cliff or Hartland Quay (157m above sea level as opposed to around 80m for the other two) and therefore the windfarm is likely to be more visible from Embury.</i></p> <p><i>As we are looking for the worst case scenario, I would therefore recommend that if we are limited to a single photomontage location in North Devon AONB besides Hartland Point, then our recommendation would be for Embury Beacon and not Hartland Quay.</i></p>	

## 19.4 Existing Environment

120. This section describes the existing environment in relation to offshore seascape, landscape, and visual amenity associated with the SLVIA study area. It has been informed by a review of the sources listed in **Table 19.8**.
121. In line with GLVIA3 (Landscape Institute, 2013), the baseline 'establishes the area in which the development may be visible' in order to define the relevant aspects of the current seascape, landscape, and visual environment of the SLVIA study area.
122. The Marine Policy Statement (MPS) (UK Government, 2011) states the European Landscape Convention definition of landscape (which includes marine areas) as *“an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”*. It adds that in the context of the UK Marine Policy Statement, *“references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.”*
123. Although seascape character therefore *“principally applies to coastal and marine areas seaward of the low-water mark”* and landscape character *“principally applies to terrestrial areas lying to the landward side of the high-water mark”* (Natural

England, 2012, p7, Box 1), there is in fact a subtler transition between seascape and landscape and the importance of the interaction of sea, coastline and land as perceived by people is highlighted in definitions of seascape in the Natural England guidance (Natural England, 2012) and Marine Policy Statement (UK Government, 2011).

124. The seascape impact assessment in this SLVIA therefore focuses particularly on areas of onshore landscape with views of the coast or seas and marine environment, as perceived by people, on the premise that the most important effect of offshore windfarms is on the perception of seascape character from the coast.

#### 19.4.1 Current baseline – Seascape Character

125. In England, seascape character principally applies to coastal and marine areas seaward of the low water mark. Seascape, like landscape is about the relationship between people and place and the part it plays in forming the setting to our everyday lives. Seascape results from the way that the different components of the environment – both natural and cultural - interact and are understood and experienced by people. Seascape is defined by Natural England in its position statement on All Landscapes Matter (2010) as: *"An area of sea, coastline and land, as perceived by people, whose character results from the actions and interactions of land with sea, by natural and/or human factors"*. A summary of what constitutes seascape is presented in 'An Approach to Seascape Character Assessment' (Natural England, 2012).

126. A definition of seascape is also set out in NPS EN3 (2.6.203): *"Where necessary, assessment of the seascape should include an assessment of three principal considerations on the likely effect of offshore wind farms on the coast:*

- *Limit of visual perception from the coast;*
- *Individual characteristics of the coast which affect its capacity to absorb a development; and*
- *How people perceive and interact with the seascape"*.

127. The first strategic-scale seascape assessment commissioned by the MMO was undertaken for the south inshore and offshore marine plan areas in 2014. This followed the seascape character assessment for the east inshore and offshore marine plan areas commissioned by Natural England in 2011, further updated by the MMO in 2012 following a consultation exercise. This project developed MMO's desk-based seascape assessments for the south east, north east, north west and south west marine plan areas formulated in 2015/16 to undertake stakeholder verification

through a series of workshops were held in 2018 to provide the opportunity for key stakeholders to input into the process. Following consultation, this study has produced a combined national seascape character map for all England's inshore and offshore areas, comprising a spatial framework of individual MCAs which 'flow across' marine plan area and administrative boundaries. The MCAs represent strategic patterns and variations in character across the national marine area.

128. The MMO Seascape Assessment characterises the Inshore and Offshore areas of the SLVIA study area and identifies Marine Character Areas (MCAs) which provide the baseline seascape characterisation and mapping for the SLVIA. These MCAs are shown in **Figure 19.8**.
129. The boundaries drawn for the MCAs represent broad transitions (rather than immediate or abrupt changes) in character from MCA to MCA, tending to reflect natural breaks or the clustering of characteristics and/or features. In total, 17 MCAs have been classified for the south west.
130. The baseline description of the seascape of the study area is informed by the MMO (2018) 1134: Seascape Character Assessment for the South West Inshore and Offshore marine plan areas, which covers the majority of the southern half of the SLVIA study area, within UK Waters.

#### 19.4.1.1 National Seascape Character – England

131. The Windfarm Site is located within MCA 51: Bristol Channel Approaches. This MCA covers the western approaches to the Bristol Channel and the north-eastern extent of the Celtic Sea. The MCA's western boundary extends offshore to the edge of the Marine Plan Area, picking up the territorial waters boundary between Ireland and England. It is noted that although MCA 51 does not include an adjacent coastline, it may be possible to gain views across neighbouring MCAs, to/from the North Devon AONB and to/from parts of Cornwall AONB.
132. The easternmost portion of the SLVIA study area includes part of MCA 43: Lundy and Outer Bristol Channel. The Lundy and Outer Bristol Channel MCA comprises the rocky island of Lundy – the largest island in the Bristol Channel – and its surrounding waters. The MCA includes the waters and offshore rocks/bars and overfalls associated with Lundy, including The White Horses, Stanley Bank and North West Bank. The inner (eastern) boundary marks the transition to the calmer, sheltered waters of Bideford Bay and is consistent with the local Inner Bideford Bay Seascape Character Area (SCA) boundary defined by the Seascape Character Assessment for North Devon and Exmoor (2015) shown on **Figure 19.9**.



133. To the south of the study area, MCA 45: Port Gaverne Bay, MCA 44: Hartland Point to Port Isaac Bay, and MCA 42: Bideford Bay and Taw-Torridge Estuary, which broadly cover the open coastal waters off the North Cornwall and north Devon coasts.
134. The assessment of effects on English seascape character within the study area will be undertaken based on the National Scale MCAs, with further relevant information also being drawn from the Regional and Local SCAs, described subsequently.

#### 19.4.1.2 Local Seascape Character – England

135. In English waters, the seascape has been characterised at the local level by the National Trust, North Devon Coast AONB, Exmoor, Exmoor National Park Authority, North Devon Council, Torridge Local Council and Natural England (2015) North Devon and Exmoor Seascape Character Assessment (NDESCA). The area for this study covers some 145km (90 miles) of coast between Marsland Mouth on the Cornwall border to the boundary of Exmoor National Park near Minehead, including the Taw/Torridge Estuary and its fringes. It extends offshore to the 12 nautical mile territorial limit, including Lundy and its surrounding waters at the edge of the Atlantic Ocean. The study area includes all of the coastal sections of the North Devon Area of Outstanding Natural Beauty (AONB) and Exmoor National Park.
136. The NDESCA defines broad Seascape character areas (SCAs), which are defined as *"single unique areas of character, each with its own unique character and identity."* Each SCA is made up of more detailed Seascape Character Types (SCTs) which illustrate the types of seascape that combine to shape the unique character of SCAs. In total the NDESCA classifies 27 SCAs and 27 SCAs.
137. The Windfarm Site is located approximately 21.2km beyond the nearest SCA 27: Lundy South.
138. Visibility of the WTGs and OSP within the Windfarm Site would theoretically be possible from a number of SCAs, where land-sea interactions are focussed and where the effects of the Windfarm, as perceived by people, are most likely to occur. Where relevant, they have been reviewed as part of the detailed landscape baseline of the MCAs assessed in **Section 19.9**.
139. There is no equivalent assessment of a Local-level seascape character assessment for the Cornwall coast and its wider seascape.

*Table 19.13 Baseline Seascape Receptors: England*

Type	Receptors within 60km Study area
National Seascape	

Type	Receptors within 60km Study area	
<b>Marine Character Areas - England (MCAs)</b>	MCA 42 - Bideford Bay and Taw-Torridge Estuary MCA 43 - Lundy and Outer Bristol Channel MCA 44 - Hartland Point to Port Isaac Bay MCA 45 - Port Gaverne Bay to St Ives Bay MCA 51 – Bristol Channel Approaches	
<b>Local Seascape Character</b>		
<b>NDESCA – Seascape Character Areas (SCAs) and Seascape Character Types (SCTs)</b>	SCA 15 – Lundy	SCT 6 – Offshore Islands SCT 8A – Rocky Open Waters with Reefs
	SCA 22 – Clovelly Coast	SCT 4H – Cliffs SCT 4I – Rocky Foreshore SCT 4Q – Sheltered Coastal Waters
	SCA 24 – Hartland North Coast	SCT 4H – Cliffs SCT 4I – Rocky Foreshore SCT 4P – Moderate Energy Coastal Waters
	SCA 25 – Hartland Atlantic Coast	SCT 4H – Cliffs SCT 4I – Rocky Foreshore SCT 4N – Exposed Coastal Waters

### 19.4.1.3 National Seascape Character – Wales

140. The Welsh part of the SLVIA Study area is covered by the National Seascape Assessment for Wales, NRW Evidence Report No: 80, 2015.
141. The NRW National Seascape Assessment for Wales provides the strategic evidence base for seascapes. It classifies 29 National Marine Character Areas (MCAs) which provide a national spatial context for considering seascapes in strategic plan and policy making situations, as well as providing context for nesting local-scale assessments.
142. The Windfarm Site is situated beyond 12 nautical miles and is therefore beyond the seaward limits of the NRW Marine Character Areas identified in the National Seascape Assessment for Wales (NRW, 2015). The location of MCAs within Welsh waters is shown on **Figure 19.8**. The nearest MCA is the Southern Pembrokeshire Open Waters MCA 23. This MCA encompasses the waters surrounding the southern coast of the Pembrokeshire peninsula, forming part of the busy sea route of the Bristol Channel linking south Wales with the English south-west coast. It is an open seascape within a simple, consistent, unified marine character, and vast scale and sense of openness and exposure, with its qualities are determined almost entirely by the natural forces of water, through swell, waves, and wind. It forms the open seascape setting to the wide views from the headlands and cliff tops of the Pembrokeshire coast along the edge of MCA 22 South Pembroke Coastal and Inshore Waters. These coastal and inshore waters of MCA22 include rock reef, shoals, and

sand banks, with a diverse rugged coast with rocky sections, steep cliffs, arches, and stacks, interspersed with small coves, bays and sandy beaches.

143. At the national level, the northern part of the Study area consists of West Pembrokeshire Coastal Waters and Islands (MCA 18) and the West Pembrokeshire Islands, Bars, and Inshore Waters (MCA 19). MCA 18 covers the most western part of Wales, stretching from Strumble Head to St Ann's Head in the south, including the island of Ramsey, Skomer and Skokholm, which frame St Bride's Bay. It has a diverse coastline with rugged steep cliffs, punctuated by sandy foreshores, steep narrow valleys, harbours, and isolated bays. St Bride's is a broad sweeping bay with a westerly aspect, gently falling away from the beaches at Newgale Sands and Broad Haven. St David's peninsula is backed by the highly prominent landform of Carn Llidi, an abrupt volcanic outcrop. There are hazardous seas around the islands in Ramsey Sound and Jack Sound, biodiverse waters, and coastlines, with Marine Nature Reserve and National Nature Reserve designations, and there is a strong sense of time depth. The seas attract much fishing activity and are used by commercial ships anchoring while waiting to access Milford Haven.
144. To the north of the SLVIA Study area is the drowned river estuary of Milford Haven (MCA 21). It includes the tidal reaches of the Cleddau, Cresswell, Carew, and Pembroke rivers, with sheltered bays and shallow creeks, surrounded by rolling and occasionally steep sided hills with distinctive woodland down to the water's edge. Milford Haven is a major deep sea port, with Pembroke Dock and Milford Docks, and extensive industrial facilities, power stations, oil refineries, the largest oil/gas/petrochemical storage facilities in the UK, and larger urban areas and dispersed settlement. Views are therefore varied, within the estuary often being contained and channelled, opening up towards the wide estuary mouth, with oil refineries and infrastructure dominating views into the MCA from surrounding areas.
145. The assessment of effects on Welsh seascape character within the study area will be undertaken based on the National Scale MCAs, with further relevant information also being drawn from the Local SCAs, described subsequently.

#### 19.4.1.4 Local Seascape Character – Wales

146. The Pembrokeshire Seascape Character Assessment (PCNP, 2013) defines SCAs at a Local level and is set within the framework of the regional Welsh Seascapes study completed by Countryside Council for Wales in 2009 and the National Seascape Assessment for Wales (NRW, 2015). The location of SCAs within the study area is shown on **Figure 19.9**.

147. In Wales, this definition of seascape is reflected by the seascape baseline provided by the Pembrokeshire Seascape Character Assessment (PCNP, 2013), which defines inland boundaries of SCAs that include land which has a strong visual relationship with the sea/tidal waters and coastal landscape character types such as dunes or cliffs.
148. The Windfarm Site is located approximately 31.7km beyond the nearest SCA, SCA 30: Southern offshore waters
149. There is also visibility of the WTGs and OSP within the Windfarm Site from SCAs covering the inshore waters off Pembrokeshire, and their coastlines (**Figure 19.9**), where land-sea interactions are focussed and where the effects of the Windfarm Site, as perceived by people, are most likely to occur. Where relevant, baseline descriptions of these SCAs are considered in **Section 19.10**.

*Table 19.14 Baseline Seascape Receptors: Wales*

Type	Receptors
<b>National Seascape Character</b>	
<b>Wales Marine Character Areas - Wales (MCAs)</b>	MCA 18: West Pembrokeshire Coastal Waters and Islands MCA 19: West Pembrokeshire Islands, Bars, and Inshore Waters MCA 20: Irish Sea Open Waters MCA 21: Milford Haven MCA 22: South Pembrokeshire Coastal and Inshore Waters MCA 23: South Pembrokeshire Open Waters MCA 28: Bristol Channel (Wales)
<b>Local Seascape Character</b>	
<b>PCNP Seascape Character Areas (SCAs)</b>	SCA 26: Skokholm and Gateholm coastal waters SCA 28: West open sea SCA 29: Southern inshore waters SCA 30: Southern offshore waters SCA 31: Outer Milford Haven SCA 32: Inner Milford Haven SCA 34: Freshwater West SCA 35: Castlemartin coastal waters SCA 36: Stackpole coastal waters SCA 44: Western offshore very deep water

### 19.4.2 Current baseline – Landscape Character

150. Landscape character principally applies to terrestrial areas lying to the landward side of the high-water mark. There is a hierarchy of published Landscape Character Assessments that describe the baseline landscape character of the landscape in the SLVIA study area, at the National, County and Local level.

151. The County and Local level assessments provide a consistent landscape character framework within the study area, at a finer-grain detail than the national-level assessments. The descriptions of landscape character defined in these studies are considered to be of an appropriate scale to allow assessment of the effects of the Windfarm over the relatively wide SLVIA study area, on Lundy Island and upon the PCNP, NDCAONB, and CAONB, at a sufficient level of detail.

#### 19.4.2.1 National Landscape Character – England

152. The 159 NCAs, which cover the country, were originally identified by the Countryside Agency. This mapping and the associated descriptions have been revised and developed by Natural England into NCA profiles, which provide a recognised, national, spatial framework.

153. In the English onshore section of the study area, at the national level the landscape is classified by Natural England in National Character Areas (NCAs), NCA 149 – The Culm, NCA 152 – Cornish Kilas, and NCA 159 – Lundy. These NCAs define the main coastal associated landscapes within the SLVIA study area and are shown on

154. .
155. The NCA profile for 149 - Culm describes an extensive area of rolling ridges and open plateaux that extend across parts of north-west Devon and north-east Cornwall. It includes spectacular Atlantic coast of open, wind-swept cliffs and sandy beaches along the Devon and Cornwall coasts, where the Culm meets the open sea. The open, rolling plateaux are divided by an intricate pattern of valleys, forming the catchments of the Rivers Taw, Torridge, and Tamar, and along the cliffs at the coast by the intimate, often wooded, combes. Settlements are rare along this coastline.
156. NCA 152 – Cornish Killas covers the main body of the Cornish landmass, including both its northern and southern coastlines. The NCA profile describes the north coast as having short, deeply etched valleys cut through to the sea, and the land ends abruptly in sheer high cliffs. The profile notes that the north Killas coast provides continuous visual and physical links along the Cornish peninsula. The development of Cornwall as a mass holiday destination began from the late 19th century. It has seen a significant increase in caravan parks and features a dispersed pattern of modern buildings that can be highly visible in parts of the open landscape. Many of the potential activities that draw people to the area are inextricably linked to its environment and remote character. Popular recreation assets include a large section of the South West Coast Path National Trail.
157. Lundy Island is covered by a single NCA profile, 159 – Lundy. The NCA profile describes Lundy as a flat-topped granite island surrounded by steep cliffs, up to 100 m high, plunging into the Bristol Channel. The rugged western coast has caves, stacks, and huge granitic blocks along its coastline; the east coast is more sheltered. The cliffs are topped by open, windswept heathland plateau. Panoramic views over open sea give a strong sense of remoteness. The description notes tremendous sea views from Lundy, with inspiring seascapes. On a clear day, Exmoor, and the Culm – and even the Gower Area of Outstanding Natural Beauty in Wales, some 55km away, and Cornwall as far as Newquay – can also be seen. The NCA profile notes that wind turbines in north Devon and North Cornwall are visible from Lundy.
158. Although helpful, because the NCAs are a national-level of characterisation, they are not sufficient in detail to determine the potential effects of any individual proposed development within the landscape and, therefore, are not assessed further. However, further, more detailed, landscape character assessments have been carried out at the Local level, described below

#### 19.4.2.2 Regional and Local Landscape Character - England

159. The landscape of the onshore parts of the study area is described in relation to the published County and Local landscape character assessments, shown on **Figure 19.10** as follows:

- Devon County Council (online). Devon Landscape Character Areas
- North Devon & Torridge Local Councils, Devon County Council and Natural England (2010) Joint Landscape Character Assessment for North Devon & Torridge. Prepared by Land Use Consultants
- Cornwall County Council, Landscape Character Assessment (2007), Landscape Character Areas.

160. The county and local-level assessments of landscape character are considered the most detailed sources of information and are therefore appropriate to inform an assessment of the potential effects on landscape character arising from the Windfarm Site.

161. Subdivision of the landscape into Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) accords with these baseline documents and is shown on **Figure 19.10**.

162. Lundy Island is the closest landmass to the Windfarm Site, at approximately 43.7km. Parts of mainland England and Wales lie in excess of 52.3km and 54.7km, respectively, from the Windfarm Site. Therefore, the key issue, in landscape character terms is the effect on Lundy Island, owing to its proximity and maritime setting in the middle of the Bristol Channel.

163. Therefore, the local-level landscape character is considered in **Section 19.12** insofar as it contributes to the inherent 'Special Qualities' of the nationally-important and sensitive designated coastal landscapes of the NDCAONB and the CAONB.

#### 19.4.2.3 National Landscape Character - Wales

164. In Wales, the national landscape is classified by NRW into 48 National Landscape Character Areas (NLCAs). Within the 60km study area the South Pembrokeshire Coast NCLA 47 forms the coastal parts of the SLVIA Study area, with a very small part of the West and North Pembrokeshire Coast NLCA 43 at St. Ann's Head just within the study area, backed by Milford Haven NLCA 48, shown on



165. .
166. The South Pembrokeshire Coast NLCA 47 is summarised by NRW (2016) as spanning from Pendine in the east to the limestone cliffs and bays of the Angle Peninsula in the west. It incorporates numerous popular beaches, villages, and the notable historic seaside town of Tenby. Mostly within PCNP, the area also contains the Manorbier and Stackpole Warren Landscapes of Special Historic Interest and military firing ranges at Castlemartin, Manorbier, Penally and Pendine. There are also sections of Heritage Coast. Inland, a limestone plateau with gentle rolling scarp and vale landform is covered by mixed agricultural fields and hedgerows. In the east there are numerous small, enclosed, wooded, incised valleys. Generally, the inland landscape terminates abruptly in spectacular cliffs with headlands and with sandy bays sometimes backed with dunes. Strong, Medieval influences are apparent with prominent open field systems around Manorbier. Mining and quarrying remains (for limestone, iron, coal) are seen in the eastern part, coinciding with the edge of the South Wales Coalfield. Today, the coast forms a focus for tourism and recreation activities and the attractive seaside towns of Tenby and Saundersfoot are very popular. In contrast a large area of coast is used by the military as artillery ranges and retains a sense of remoteness.
167. The Milford Haven NLCA 48 is summarised by NRW (2014) as a drowned river valley or ria, providing an expanse of deep-water anchorage for today's oil-carrying super tankers. It is a naturally strategic place, with outer headlands and cliffs ideal for defensive installations. Today it conveys the sense of being both industrially of supra-importance, and of a maritime playground for sailors and yachtsmen. Its role as an important military bastion did not cease until after the Second World War. The area is served by the towns of Haverfordwest, Milford Haven and Pembroke, whose existence and character relate closely to the ria. Elsewhere, villages and hamlets are dispersed along roads, their intersections or at former landing places for cross-Haven ferries. The prominent industry at Pembroke Dock and Milford Haven, with oil refineries and their jetties dominating the coastal landscape at the mouth of the Haven, contrasts remarkably with the intimate and rural landscapes of the inland ria or Daugellau, and its surrounding woodland slopes and farmland. The modern industrial leviathans also co-exist with areas that are of international and national nature conservation interests. The Daugleddau estuaries and the Cleddau river basins form part of the Pembrokeshire Coast National Park.
168. A very small part of the southern tip of the St. Ann's headland, within the West & North Pembrokeshire Coast NLCA 43, falls within the study area. NRW (2014) summarises the NLCA as gently undulating, productive, agricultural landscape is

edged by some of the most spectacular and rugged coastline in southern Britain. The landscape dramatically terminates with steep cliffs, and includes a number of remote islands, being remnants of peninsulas. The coastal areas also include a number of distinctively shaped rocky hills, that together with coastal slopes, include areas of heather and heath, stone walls or hedgebanks, and a far more remote feeling than many of the nearby inland landscapes. The area is of international importance for its coastal landscape and wildlife, and there are many popular tourist destination 'honeypots' with walking, beach, and various coastal recreational pursuits, including boat trips to some of the islands to observe wildlife. Much of this area represents the western and northern extents of the PCNP.

169. Although helpful, because the Welsh NCAs are a national-level of characterisation, they are not sufficient in detail to determine the potential effects of any individual proposed development within the landscape and, therefore, are not assessed further. However, further, more detailed, landscape character assessments have been carried out at the County and Local level, described below.

#### 19.4.2.4 Regional and Local Landscape Character - Wales

170. The landscape of the onshore parts of the study area is described and in relation to the published landscape character assessments within the Welsh portion of the SLVIA study area, shown on **Figure 19.10** as follows:

- Pembrokeshire Coast National Park (2020), Landscape Character Supplementary Planning Guidance
- Pembrokeshire County Council, Landscape Character Assessment (Consultation Draft, 2019), Landscape Character Areas.

171. The landscape character of the PCNP is described in relation to SCAs, in **Section 19.10**. This is because, at the Local level, the description of SCAs covers the seascape, and also defines the characteristics of land which has a strong visual relationship with the sea/tidal waters and coastal landscapes such as dunes or cliffs. Landscape character outside (inland) of the SCAs is considered unlikely to experience significant effects as a result of the Windfarm since these are parts of the landscape that do not have a strong visual relationship with the sea, and where their character is fundamentally defined by other characteristics.

172. For completeness, LCAs within the remaining parts of Pembrokeshire, within the study area, are also shown on **Figure 19.10**.

### 19.4.3 Current baseline – Landscape Planning Designations and Defined Areas

173. The Windfarm Site is not located within the boundary of any area subject to international, national, or regional landscape designation intended to protect landscape quality.

174. Certain landscapes found within the study area have been designated or defined due to their scenic qualities or historic landscape qualities, as shown in **Figure 19.11**. The landscape designations scoped into the SLVIA, following consultation, are identified in **Table 19.15** are those that have an associated seascape setting that may have potential to be significantly effected by the offshore elements of the Windfarm.

*Table 19.15 Landscape Designations / Defined Areas within ZTV*

Type	Receptors
<b>National Park</b>	Pembrokeshire Coast National Park (PCNP)
<b>Area of Outstanding Natural Beauty</b>	North Devon Coast AONB (NDCAONB)
	Cornwall AONB (CAONB): Section 01: Hartland Marsland to Menapoint Church Section 02: Pentire Point to Widemouth Section 04: Carnewas to Stepper Point
<b>Heritage Coasts</b>	Lundy
	North Devon
	Hartland (Devon and Cornwall)
	Pentire Point - Widemouth
	Trevoise Head
	Marloes and Dale (Wales)
<b>Historic Parks and Gardens in Wales</b>	Stackpole Court

#### 19.4.3.1 North Devon Coast Area of Outstanding Natural Beauty (NDCAONB)

175. The NDCAONB covers over 171km<sup>2</sup> in total, with approximately 63.5km<sup>2</sup> of the AONB being located within the SLVIA Study area (**Figure 19.11**). It covers the coastal landscape of north Devon, including the Hartland Peninsula, which is within the SLVIA study area.

176. The North Devon Coast AONB Management Plan 2019-2024 Statement of Significance summarises the NDCAONB in the following terms:

*“The North Devon coast has a wide diversity of scenery including some of the of the finest cliff scenery in the country, the primary reason for its designation. Tall rugged cliffs and wave-cut platforms contrast with wide, sandy bays and sand dunes. In the north, steeply dipping rocks form hogsback cliffs at varied heights in a natural continuation of Exmoor’s coastline. To the south, facing the full force of the Atlantic, sheer crags and razor-like reefs present the coast at its most rugged and beautiful. The AONB reaches inland to the Hartland plateau, scored by deep valleys, which reach the coast as steep hanging gaps in the cliffs, often with spectacular waterfalls.*

*In contrast, the broad sweep of Bideford and Barnstaple Bay is a mixture of low cliffs, long sandy beaches and the dunes at Braunton Burrows. Inland a pastoral landscape of hedged fields complements the steep-sided wooded combes and valleys where villages shelter from the Atlantic winds. Whilst skirting larger settlements such as Ilfracombe and Westward Ho!, the AONB boundary takes in bustling seaside resorts such as Woolacombe and Croyde and picturesque fishing villages such as Clovelly and Bucks Mills along this spectacular coast.”*

177. The Special Qualities of the NDCAONB have been defined in the North Devon Coast AONB Management Plan 2019-2024 area as follows (numbers provided for reference in this SLVIA).

1. Distinctive Coastal Scenery
2. A Landscape and Seascape of High Visual Quality
3. A Significant Wildlife Resource
4. A Varied Geology
5. A Remarkable Heritage.

178. Special qualities that are relevant to seascape/landscape character and visual amenity that are scoped in to this SLVIA as having potential to be significantly effected by the Windfarm Site are described as follows in **Table 19.16**.

179. Special qualities that are scoped out of the SLVIA as they are not seascape, landscape and visual matters are: 3. A Significant Wildlife Resource; 4. A Varied Geology; 5. A Remarkable Heritage. The effect of the Offshore Project on wildlife resource is considered in **Chapter 10: Benthic and Intertidal Ecology, Chapter: 11 Fish and Shellfish Ecology, Chapter 12: Marine Mammals and Marine Turtle Ecology** and **Chapter 13: Offshore Ornithology**. Effects on heritage are contained in **Chapter 16: Marine Archaeology and Cultural Heritage**.

*Table 19.16 NDCAONB Special Qualities Relevant to Seascape / Landscape Character and Visual Amenity*

<b>Special Quality</b>	<b>Description (North Devon Coast AONB Management Plan 2019-2024)</b>
<b>Special Quality 1: Distinctive Coastal Scenery</b>	<p><i>Walking along the South West Coast Path across the open, windswept clifftops, and gazing westward across the seemingly infinite expanse of ocean, there is a sense of timelessness and of raw nature devoid of human influence. The feeling is sharpened when Atlantic storm waves crash against the twisted strata of exposed rocky cliffs, sending thunderous sprays of surf into the air. Dropping down into a coastal combe from the cliffs or farmland, a strong sense of refuge and shelter prevails, made more striking by the presence of enclosing woodland in the combes.</i></p> <p><i>Where stretches of coastline are distant from the coast road, a sense of tranquillity and remoteness is strong. In Braunton Burrows, the vast sand-dune system, infinite sky and an expansive sandy beach are bordered by tranquil grazing marshes. Likewise, the Hartland Coast possesses a sense of wilderness, but this is a fragile quality, which can dissolve with the sight of a wind turbine or mast on a skyline, or a car parked in an open combe. Coastal landforms provide classic examples of erosion and deposition, as well as rare and characteristic landscape features.</i></p>
<b>Special Quality 2: A Landscape and Seascape of High Visual Quality</b>	<p><i>Panoramic views from elevated areas across rolling countryside are an important feature of the AONB. Within the combes, framed sea views are characteristic, and coastal vistas across to Lundy are wide and empty. Further north the view is framed by intimate distant views of the Welsh coast. Inland, the countryside, much of it undesignated, forms an important backdrop to the coast and is a defining element to the visual quality of the AONB providing a variety of open views. The coast path provides long views along the coast across the estuary and inland to the undeveloped skyline and downland.</i></p>

180. The Special Qualities are supported by 16 photographs which illustrate the landscape features of the designated area with descriptive text, for completeness these are included below:

1. *“Diversity of scenery contained within a small area, including some of the finest cliff scenery in the country (as mentioned at designation);*
2. *Panoramic seascape, with seaward views to Lundy within the Atlantic Ocean, across the Bristol Channel to Wales and along the coastline. Views are of a landscape and seascape devoid of human influence;*
3. *Narrow framed views of the sea from coastal mouths of steep-sided combes;*

4. *Panoramic views across a rolling landscape of pastoral farmland, wooded combes and valleys from elevated inland areas;*
5. *Wild coastal scenery. In the north, hogsback cliffs of varying heights; in the south high, rugged cliffs, dramatic rock formations, exposed headlands, wavecut platforms and rocky coves;*
6. *A vast sand dune system at Braunton Burrows of exposed wild character, with high nature-conservation interest of international importance, and the pebble ridge at Westward Ho!;*
7. *Long, broad sandy beaches backed by extensive dune systems;*
8. *A strong sense of tranquillity and remoteness where the coast road is located away from the coastline;*
9. *Rare and fragile quality of wilderness in Braunton Burrows and on the Hartland coast;*
10. *Historic landscape pattern of hedge-banks, farmsteads, hamlets, villages and lanes;*
11. *Historic coastal quays and fishing villages, coastal promontory sites for strategic defences and lighthouses;*
12. *Deep combes and cliffs cloaked in ancient woodland along the Bideford Bay coast;*
13. *Small pockets of remnant lowland coastal heathlands around Morte Point and Hartland Quay;*
14. *Tourist-orientated settlements in sheltered seaside locations;*
15. *Secluded, secretive and tranquil steep sided valleys that dissect the high downland and coastal plateau; and*
16. *Dark night skies, particularly in the Hartland Peninsula.”*

#### 19.4.3.1.2 Cornwall Area of Outstanding Natural Beauty (CAONB)

181. The CAONB covers over 958km<sup>2</sup> in total, with approximately 116.5km<sup>2</sup> of the CAONB being located within the SLVIA Study area (**Figure 19.11**). The CAONB is unique because it is the only AONB made up of 12 separate geographical sections within the same designation.



182. Three local sections of the CAONB fall within the 60km study area: Section 01 – Hartland, Section 02 – Pentire Point to Widemouth, and Section 04 – Carnewas to Stepper Point.
183. The Cornwall AONB Management Plan 2022-2027 provides a Statement of Significance and description of Special Qualities for each section of the CAONB rather than a list of numerous special qualities. Special qualities that are relevant to seascape/landscape character and visual amenity that are scoped into this SLVIA as having potential to be significantly effected by the Windfarm have been identified and highlighted in the extracts contained in **Table 19.17**. Relevant parts of these descriptions to the SLVIA are highlighted in bold, below.

*Table 19.17 CAONB Special Qualities Relevant to Seascape / Landscape Character and Visual Amenity*

CAONB Section	Special Quality relevant to SLVIA
<b>01: Hartland (Marsland to Menapoint Church)</b>	<p><i>“The Key Landscape Characteristic of this section of the AONB is a high coastal plateau of carboniferous sandstones and slates known as the Culm Measures.</i></p> <p><i>The cliffs are sheer; reaching 140m in some places and are intensely folded and faulted. The sea has sculpted a striking wave-cut platform, which at low tide reveals a rock stratum of folded and faulted ridges. These shores are punctuated occasionally by sandy coves and beaches at the mouths of stream valleys, notably at the aptly named Sandymouth. The land rises gently to a ridge of 200m and is dissected by numerous streams which form deeply incised valleys containing streams that cascade as small waterfalls onto the rocky, narrow, boulder strewn shoreline below.</i></p> <p><i>Coastal heathland and grassland mosaics fringe the cliff tops, particularly in the north, whilst the steep valley sides are colonised with broadleaved woodland, some ancient, as found in the Coombe and Marsland Valleys.</i></p> <p><b><i>Views along the coastline are breathtaking and extensive.</i></b></p> <p><i>The dramatic coastal cliffs and unusual rock formations, together with its ancient history, provides an interesting and unique landscape. Small hamlets and isolated farm holdings make up this sparsely populated section of the Cornwall AONB and <b>the lack of populace further emphasises its remoteness.</b></i></p> <p><i>Local slate and sandstone, together with cob and thatch, are characteristic of the homes in this area. Originally these were lime washed or slate-hung but are now more commonly rendered.</i></p> <p><b><i>On a clear day Lundy Island can be seen out to the northwest.</i></b> <i>Further south, the coastal plateau decreases to a much lower cliff line with views southward towards Bude and the visually intrusive GCHQ at Morwenstow.”</i></p>



CAONB Section	Special Quality relevant to SLVIA
<b>02: Pentire Point to Widemouth</b>	<p><i>“The Key Landscape Characteristic of this section of the AONB is the coastline, which throughout this section is craggy with dramatic contorted cliffs and folded slates, shales and volcanic rocks with some sandstone to the north. There are also some interesting coastal features such as rocky stacks, arches, headlands, caves and blowholes interspersed with rocky coves and a few sandy beaches, such as at Trebarwith Strand and Crackington Haven. ‘High Cliff’ near Tresparrett, at 223m, is the highest sheer drop cliff in Cornwall and is formed from carboniferous sandstones and shales; the cliff line then gradually reduces in height to approximately 70-80m at Pentire Point.</i></p> <p><i>Behind the coastline, the undulating coastal plateau is incised with steep sided secluded valleys and streams that flow down to sea level such as at Boscastle, Crackington Haven and Millook. The valleys extend well inland, creating a secluded landscape with small farming hamlets. The microclimate of the sheltered valleys is in sharp contrast to the open farmland exposed to the strong sea winds on the coastal plateau where there is limited tree growth. There has been considerable development over the years on the more elevated land higher up the valley, in spite of the Boscastle flood in 2004 when an estimated two million tonnes of floodwater flowed down the River Valency. The storm also affected Rocky Valley and Crackington Haven.</i></p> <p><i>Slate is the characteristic local building and hedging material, varying from the mid hues of Delabole slate to the darker shades sourced at Trebarwith. The local slate industry led to the expansion of some villages such as Treknow and Trewarmett and the numerous small-scale disused historic slate quarries are now a feature of the coastal landscape, although slate quarrying operations continue within and close to the AONB at a small number of sites.”</i></p>
<b>04: Carnewas to Stepper Point</b>	<p><i>“The Key Landscape Characteristics of this section of the AONB are the variety of coastal scenery due to the diverse geology including hard greenstones, which form the elevated headlands as seen at Trevoze Head and Stepper Point. The more easily eroded slates and shales back the bays and coves between the headlands as can be seen at Harlyn Bay, Trevone, Treyarnon and Mother Ivey’s Bay. There are extensive coastal sand dunes at Constantine Bay.</i></p> <p><i>At Stepper Point, the coast curves inland towards Padstow, past the secluded Hawker’s Cove and further sand dunes at Tregirls Beach, forming the western side of the expansive mouth of the Camel Estuary. The landscape here is softer, in sharp contrast to the imposing and iconic cliffs at Bedruthan Steps with its craggy rock stacks.</i></p> <p><i>The peaceful and wild nature found in this section of the AONB, reflected in the modest character of Porthcothan and Harlyn, is</i></p>

CAONB Section	Special Quality relevant to SLVIA
	<p><i>interrupted sharply in places by recreational activity. The busy beaches of Harlyn, Treyarnon and Constantine Bay are very popular for surfing and other waterbased activities, whilst the sand dunes at Constantine Bay are managed for golf. Prideaux Place with its grand Elizabethan Manor House and grounds on the very edge of this section of the AONB is registered as historic parkland and provides tranquillity in contrast to the flurry of outdoor activity towards the coast.</i></p> <p><i>The slate geology of the area is reflected in the character of the housing. Many of the buildings from cottages to Victorian villas are built of slate and many of the surrounding stonewalls are predominantly slate built in the herringbone pattern of alternating diagonal courses so typical of the area. The walls that edge the lanes cut through solid bedrock, exposing the silvery slate have become colonised by ferns, wildflowers, grasses and brambles."</i></p>

#### 19.4.3.1.3 Pembrokeshire Coast National Park (PCNP)

184. The PCNP covers over 615km<sup>2</sup> in total, with approximately 51.9km<sup>2</sup> of the PCNP being located within the SLVIA Study area (**Figure 19.11**). It is one of the smallest UK National Parks but is unusual in that it is designated primarily for its coastal landscape - nowhere in the PCNP is more than 16km from the sea.

185. The PCNP Management Plan (2020-2024) Background Paper: The State of the Park identifies a number of distinct landscape characteristics and sensitivities of the PCNP, as follows:

- *"The intricate, complex, rugged, indented natural coasts with dramatic headlands and islands e.g., St Davids Head, Skomer, Ramsey Island, Strumble Head, Stackpole Head.*
- *Important focal points along the coast and out to sea including islands, islets, headlands and distinctive sweeping beaches such as Whitesands Bay, Freshwater West and Newport Bay.*
- *Unspoilt hills and backdrops which contribute to seascape character e.g. Carn Llidi, Mynydd Carningli and the Preselis.*
- *Views from key places such as headlands, coastal hills and the Coast Path.*
- *Tranquil seascapes where there is little disturbance and signs of development; dark skies.*
- *Remote undeveloped seascapes with wild, highly natural, elemental character such as the islands, north coast south west of Strumble Head and Castlemartin peninsula.*
- *Secluded and tranquil, well-treed character of the Daugleddau estuary.*

- *Small scale, traditional historic coastal settlements such as Solva, Abercastle, Porthgain and Newport, and harbours such as Porthclais and Stackpole Quay.*
- *Other coastal conservation areas with dramatic settlement features, such as the skyline and harbour of Georgian Tenby.*
- *Presence of coastal and island historic features such as peninsula forts, castles, chapels, other buildings and structures and other heritage features which have a strong relationship with the coast and sea visually, physically and culturally.*
- *Presence of coastal edge and island habitats with high biodiversity e.g. Skomer Marine Conservation Zone, National Nature Reserves including Ramsey Island, Special Areas of Conservation covering the majority of the coast and inshore waters, Sites of Special Scientific Interest."*

186. The statutory purposes of National Parks as set out in the National Parks and Access to the Countryside Act 1949 are:

*"To conserve and enhance the natural beauty, wildlife and cultural heritage of the National Parks.*

*To promote opportunities for the public understanding and enjoyment of the special qualities of the Parks."*

187. The special qualities of the PCNP have been defined in the PCNP Management Plan (2015-2019) Background Paper: Special Qualities of PCNP (PCNPA, 2018), as indicators of what comprises its natural beauty. They have been defined as a result of public consultation, stakeholder engagement and technical evidence prepared by the PCNP since its designation, including LANDMAP, the PCNP landscape character assessment (PCNPA 2011/2020) and seascape character assessment (PCNPA, 2013).

188. The special qualities of the PCNP are defined in the Background Paper: Special Qualities of PCNP report (PCNPA, 2018) are as follows (numbers provided for reference in this SLVIA):

1. Coastal Splendour
2. Diverse Geology
3. Diversity of Landscape
4. Distinctive Settlement Character
5. Rich Archaeology
6. Cultural Heritage
7. Richness of Habitats and Biodiversity
8. Islands
9. Accessing the Park
10. Space to Breathe

- 11. Remoteness, Tranquillity & Wildness
- 12. Diversity and Combination of Special Qualities.

189. Special qualities that are relevant to seascape/landscape character and visual amenity that are scoped in to this SLVIA as having potential to be significantly effected by the Windfarm are described as follows in **Table 19.18**.
190. Special qualities that are scoped out of the SLVIA as they are not seascape, landscape and visual matters are: '2. Diverse Geology'; 4. Distinctive Settlement Character; 5. Rich Archaeology; 6. Cultural Heritage; 7. Richness of Habitats and Biodiversity; and 9. Accessing the Park. Readers should refer to **Chapter 10: Benthic and Intertidal Ecology, Chapter: 11 Fish and Shellfish Ecology, Chapter 12: Marine Mammals and Marine Turtle Ecology and Chapter 13: Offshore Ornithology** for further information relating to habitats and biodiversity. **Chapter 16: Marine Archaeology and Cultural Heritage** should be referred to in relation to archaeology and cultural heritage qualities.

*Table 19.18 PCNP Special Qualities Relevant to Seascape / Landscape Character and Visual Amenity*

Special Quality	Description (Background Paper: Special Qualities of PCNP report (PCNPA, 2018))
<b>1. Coastal splendour</b>	<p><i>“The Pembrokeshire Coast National Park is widely recognised as Britain’s only predominantly coastal National Park. The splendour of its coastline, its spectacular scenery, and rugged, unspoilt beauty, provide a scenic quality which was recognised in its designation as a National Park.</i></p> <p><i>To the north of the National Park, the pattern of tall cliff faces, headlands, and small sandy / shingle beaches, caves and stacks, provide strong sense of place and an outstanding rugged coast. Dinas Head, with cliffs at 140 metres, provides spectacular, panoramic views across Fishguard Bay to the south and Newport Bay to the North. Here, sea birds, choughs, peregrine falcons and ravens find nest sites at platforms and crevices of the cliff face.</i></p> <p><i>The western stretches of the National Park are permeated by the constant presence of the sea, in sight and sound. There is a constant awareness of the wind and sea, sharpened by the sound of crashing waves along the beaches of St Brides Bay, when the prevailing south westerlies reach sufficient strength.</i></p> <p><i>The southern coast continues with the Angle peninsula, and further along to the sandy beach and dunes of Freshwater West. From this point, the sheer cliffs are punctuated by sheltered coves, stacks, arches, swallow holes and blow holes, etched out of the cliff face. The Green Bridge of Wales, near Castlemartin, is a spectacular natural limestone arch, carved by the actions of the</i></p>

Special Quality	Description (Background Paper: Special Qualities of PCNP report (PCNPA, 2018))
	<i>sea, and provides just one example of the breathtaking landscape along this coast."</i>
<b>3. Diversity of Landscape</b>	<i>'Despite the density of population, and the coastal nature of much of the National Park, it still manages to intrigue and interest with its diversity. The varied landforms of the National Park are overlaid by millennia of activity by man, in many places the traditional hedgebanks provide a tangible link to the past, as well as defining the field pattern in ways which impart a rich texture to the open landscape where small areas of woodland and scrub serve as punctuation points. Much of the rural National Park is dominated by a farmland landscape and traditional built forms predominant in the villages and agricultural buildings, contributing strongly to the sense of place, and in the north of the National Park, contrasting strongly with the open moorland of the Preseli Hills'.</i>
<b>8. Islands</b>	<p><i>"The spectacle of the islands off the Pembrokeshire Coast contributes greatly to the sense of place, and feeling of remoteness, with their outstanding visual and landscape scenery. They are highly attractive coastal wilderness areas, virtually undisturbed and rich in wildlife.</i></p> <p><i>The islands are variously home to chough, peregrine and sea birds including Manx shearwaters, guillemots, storm petrels, razorbills and gannets as well as supporting in most cases, breeding colonies of grey seals, with pups being born each year amongst the caves and small beaches. The success of the island breeding colonies is celebrated. and recognised in their international designations. Skomer is also home to the unique Skomer vole.</i></p> <p><i>It is not only the wonder of the wildlife which makes these islands special, their historical and archaeological significance can be dated back to some 5,000 years. Bronze Age cairns and Iron Age field systems make Ramsey and Skomer exceptional places. Caldey - the most cultivated of the islands - is home to a Cistercian abbey and local population. The Christian presence continues a tradition of over 1,000 years. A sense of quiet and tranquillity pervades the island, despite the large number of day visitors through the season."</i></p>
<b>10. Space to breathe</b>	<i>"The sometimes blistering westerly winds, which bring clean and fresh air, the clean coastal water, and the clean environment are highly valued by residents and visitors alike and are a special quality of the National Park. The relatively undeveloped areas of the Park, and the opportunity to access many areas provides a sense of exhilaration and liberty, or moments for quiet reflection or enjoyment of the stunning views. All this is possible, even though the nearest settlement is never far away."</i>

Special Quality	Description (Background Paper: Special Qualities of PCNP report (PCNPA, 2018))
<b>11. Remoteness, tranquillity, and wildness</b>	<p><i>“The relatively open character of the Preseli Hills, and the lack of cover and shelter provides a strong sense of exposure among the summits and upper slopes of these hills. They provide a sense of space and isolation, providing for moments of reflection and calm away from the bustle of everyday life. Whilst the feeling of upland exposure of the Preseli Hills is not much replicated elsewhere within the National Park, it can be found at Strumble Head and Cemaes Head. There are also however, areas within the National Park where the sense of tranquillity and peace are engendered from the intimacy and closeness of the landscape. Cwm Gwaun valley, with its pervading sense of shelter, provided by the enclosed landform, woodland and dense hedgerow network, provide a sense of tranquillity and solitude in a relatively small area, as does the Solva valley. And yet still a sense of remoteness and tranquillity can be found at the exposed and relatively isolated stretches of Freshwater West, evoked by the wind swept undulating sand dunes. And finally the upper stretches of the Daugleddau, provide a great sense of tranquillity, a sense of quiet backwater, magnified by the surrounding landform, dense woodland and strands of trees.”</i></p>
<b>12. Diversity and Combination of Special Qualities</b>	<p><i>“It is not only the individual special qualities which make the National Park special, it is the combination of special qualities, with the variety and distribution within a relatively small area which helps to create its uniqueness. The sound and sights of the sea, nestled alongside the rolling landscapes, wooded valleys and upland plateaus of the National Park create a distinctive combination of colour, contrast and change within just a few miles, and provides a range of landscapes and intangible experiences, which is rarely found. It is not only the existence of these qualities, but the perception of their permanence, of the protection that a National Park affords which in itself provides reassurance.”</i></p>

#### 19.4.3.1.4 Heritage Coasts

191. Heritage Coasts are defined along almost the entirety of the nearshore waters and coastline of the English and south Pembrokeshire Welsh, coasts within the SLVIA study area, as shown on **Figure 19.11**.
192. Heritage Coasts were established to protect and conserve the best stretches of undeveloped coast; however, there are no statutory requirements or powers associated with the Heritage Coast definition. However, their geographic boundaries generally coincide with designated areas, including the PCNP, NDCAONB, and CAONB. The exception to this is Lundy Island, which sits as an isolated area of Heritage Coast which covers the island and its surrounding waters.



193. The purpose of Heritage Coasts generally aligns with the statutory purposes of these National Park and AONB designated landscapes “*to conserve and enhance the natural beauty, wildlife, and cultural heritage*”; the effects of the Windfarm on Heritage Coasts are considered as integral to the assessment of the designated landscapes set out in this SLVIA (**Table 19.15**), with the exception of Lundy Heritage Coast which is considered in the assessment of landscape character in **Section 19.11**. Cultural heritage matters are also addressed in **Chapter 16: Marine Archaeology and Cultural Heritage** of this ES.

#### 19.4.3.1.5 Historic Parks and Gardens in Wales

194. There is one Registered Historic Park and Garden within the study area, Stackpole Court, in Wales. Its location is shown on **Figure 19.11**.

195. Stackpole Court was a fortified medieval house, now demolished, with outbuildings now used by the National Trust for offices and is part of the National Trust's Stackpole Estate. The Historic Park and Garden is located at very long distance from the Windfarm Site (**Figure 19.11**) and is contained by a wooded, branched, low river valley, within which there is almost entirely no theoretical visibility of the WTGs (**Figure 19.18**) due to the contained landform, other than a small area of theoretical visibility near Stackpole and across parts of the elevated sea cliffs to the east.

196. There is no potential for the perceived landscape characteristics of this Historic Park and Garden (including its naturalistic wooded valleys, range of habitats, historical / archaeological assets) to be significantly effected by the Offshore Project and therefore it is not assessed further.

### 19.4.4 Current baseline – Views and Visual Amenity

197. The visual receptors in the study area are found along the closest sections of the Devon, Cornwall, and Pembrokeshire coastlines. These include people within settlements, driving on roads, visitors to tourist facilities or historic places of interest, and people engaged in recreational activity such as those using walking and cycling routes.

198. Broadly, the principal visual receptors within the study area are identified as follows, and shown on



200. Figure 19.12, **Figure 19.16**, and **Figure 19.17**:
201. **Coastal settlements.** The larger settlements within the extent of ZTV are generally coincident with the coastline, where the main focus of views is typically 'land to sea'. The principal coastal settlements with capacity for views of the WTGs within the Windfarm Site are within the English part of the study area (with approximate distance to the Windfarm Site):
- Bude (57.4km)
  - Widemouth Bay (59.0km)
  - Boscastle (57.9km)
  - Tintagel (56.7km)
  - Port Gaverne (60.0km)
  - Polzeath (58.5km)
  - Trevone (60.0km).
202. There are no equivalent large coastal settlements within the Welsh part of the study which would also have capacity for sea views and visibility of the WTGs within the Windfarm Site.
203. **Long distance recreational routes.** The principal long-distance recreational routes with potential for views of the WTGs are: The South West Coast Path (also England Coast Path); and a section of the Pembrokeshire Coast Path (also Wales Coast Path).
204. **Long distance cycle routes.** Sustrans National Cycle Route (NCR) 3, a 328-mile route which connects Land's End to Bristol, via parts of Cornwall, Devon, and Somerset. No equivalent routes pass through the Welsh part of the study area.
205. **Public Rights of Way.** A more general concentration of Public Rights of Way is also notable within the extents of the NDCAONB and COANB and the coast, associated with its open landscape and focus as a centre for outdoor recreation. There are few Public Rights of Way within the Welsh part of the study area, those present tend to connect small settlements and hamlets, or offer access around the coastal hinterland at Bosherton and Freshwater West.
206. **Main road routes.** The principal highway route with capacity for sea views is the A39, which enters the study area to the west of Higher Clovelly, passing along the eastern boundary of the NDCAONB and CAONB, to Bude. The route then exits the study area to the south of Bude. There are no equivalent 'A' roads within the Welsh part of the study area. The principal routes with capacity for sea views are the B4139 and B4320 which pass close to the coast, to the west of Freshwater West.

207. **Tourist and visitor locations.** Concentrations of recreational and visitor locations associated with the main coastal resort towns, with their sea fronts and beaches, or places of interest for visitors, including Bude, Widemouth Bay, Tintagel, Port Gaverne, Polzeath, and Trevone. Within the Welsh part of the study area these locations are found at Bosherton and Freshwater West, and at Stack Rocks (infrequently open, as a result of the MOD firing ranges).
208. **Other notable beach locations** (within general accessibility along the majority of the coastline) offering beach and inshore sea based recreational opportunities within the English part of the study area include Hartland Quay, Sandymouth Beach, Crooklets Beach, Trebarwith Strand Beach, Duckpool Beach, Northcott Mouth Beach, Polzeath Beach, Port Gaverne Beach, Crackington Haven Beach, Bossiney Cove Beach, Summerleaze Beach, and Widemouth Bay Beach. Within the Welsh part of the study, there are popular beach and inshore sea based recreational opportunities at Broad Haven and Freshwater West.
209. **Principal Boat Routes.** The main shipping routes pass to the north and south of the Windfarm Site, notably the routes follow the Bristol Channel to inland ports at Swansea, Port Talbot, Barry, Cardiff, and Avonmouth at Bristol. Other routes through the study area include those to Milford Haven, and between Ilfracombe and Bideford to Lundy Island, and sea traffic to the west of the study area from the Irish Sea to Celtic Sea. The nature of such views from passenger vessels on these routes are either sea to land or sea to sea.
210. **Other Sea Based Users.** Other sea based users are considered in more detail in **Chapter 14: Commercial Fisheries, Chapter 15: Shipping and navigation and Chapter 18: Infrastructure and Other Users.** Notable areas for recreational boat routes are found close to larger settlements with harbour facilities, including Bude, Port Isaac and Padstow. All such users experience varying aspects of sea to land or sea to sea views.
211. Many such receptor groups are represented by the viewpoints included in the detailed assessment. In addition, specific assessment of the effects on views from the South West Coast Path (which also forms part of the England Coast Path) and the Pembrokeshire Coast Path (which also forms part of the Wales Coast Path) are included.
212. **Table 19.19** sets out the viewpoints included in this SLVIA. Representative viewpoints are assessed in full in the SLVIA and included in **Section 19.7.1**. Illustrative viewpoints are included in **Appendix 19.B** and **Appendix 19.C**, are not assessed in full in the SLVIA but are used to inform assessments such as those from

other nearby locations (where there is already a representative viewpoint), to provide information about views from routes for sequential assessment or wider effects on a designation / visual receptor to scope out effects.

#### 19.4.4.1 Viewpoints

213. The term 'viewpoint' is used to define a place from where a view is gained, and that represents specific conditions or viewers (visual receptors).

214. Representative viewpoints within the SLVIA Study area are set out in **Table 19.19** and shown in **Figure 19.24** to **Figure 19.33**. The viewpoints consider a range of factors, including:

- a range of viewpoints from where there is the potential for significant effects
- those representative of views within the Study area, from specific viewpoints and illustrative of certain effects
- the accessibility to the public, and potential number and sensitivity of viewers who may be impacted
- the viewing direction, distance, and elevation, including a range of distances between 44.6km to 59.1km, to test the threshold of significance;
- the nature of the viewing experience and activities (e.g., static views, views from settlements, tourist destinations, and views from sequential points along roads and recreational routes, such as the South West Coast Path)
- the view type (for example panoramic, vista and glimpse)
- areas of high landscape, scenic or recreational value, including PCNP, NDCAONB and CAONB
- various seascape character areas and local authority administrative areas
- potential for integrated approach - viewpoints representing several aspects from the same location, or views representing onshore cultural heritage assets
- viewpoints that have been specifically requested by Stakeholders, either through consultation or at ETG meetings.

*Table 19.19 Representative viewpoints included in the SLVIA*

No	Location	Designation	Easting	Northing	Distance to closest WTG within the Windfarm Site (km)
1	Stack Rocks, Pembrokeshire	Pembrokeshire Coast National Park / South	192318	194462	55.8

No	Location	Designation	Easting	Northing	Distance to closest WTG within the Windfarm Site (km)
		Pembrokeshire Heritage Coast			
2	Hartland Point, on South West Coast Path (SWCP)	North Devon Coast AONB / Hartland Heritage Coast	223124	127578	53.9
3	Vicarage Cliff, west of Morwenstow (on SWCP)	Cornwall AONB / Hartland Heritage Coast	219948	115192	53.5
4	Compass Point, Storm Tower, south of Bude (on SWCP)	n/a	220041	106341	57.1
5	Penhalt Cliff Ordnance Survey Viewpoint	Cornwall AONB / Pentire Point - Widemouth Heritage Coast	218869	100494	59.1
6	Lundy Island, Old Light	Lundy Heritage Coast	213178	144276	44.6
7	Rosslare to Cherbourg Ferry	n/a	116826	139316	48.8
8	Tintagel	Cornwall AONB / Pentire Point - Widemouth Heritage Coast	204779	89113	56.2
9	Pentire Head (on SWCP)	Cornwall AONB / Pentire Point - Widemouth Heritage Coast	192388	80471	57.2
10	Embury Beacon	North Devon Coast AONB / Hartland Heritage Coast	221639	119416	53.9

215. The existing baseline view and sensitivity to change for each of the above viewpoints is described in **Section 19.7.1**. Baseline photographic panoramas showing the existing view from each viewpoint are shown in **Figure 19.24** to **Figure 19.33**.

#### 19.4.4.2 Visual Receptors - South West Coast Path (England Coast Path)

216. The South West Coast Path is a continuous waymarked path from Minehead in Somerset, around the North Devon coast, and the entire coastline of Cornwall, to Poole Harbour on the south coast of Dorset. It was designated a National Trail in 1973. In total, the route covers approximately 1013km. The total length of the SWCP through the SLVIA Study area is approximately 114.1km. The SWCP Association estimate that, on average, most walkers would take 7 to 8 weeks to complete the entire route and note that although there is no set way to complete the SWCP, most people walk anti-clockwise, beginning in Minehead and finishing in Poole. Since the SWCP provides a route around the coastline in the south-west of England, it will form part of the England Coast Path<sup>1</sup>, although over time there will be new sections with extended rights of way that will be opened for members of the public.
217. The SWCP enters the northern part of the SLVIA study area at Windbury Point, on the north Devon coast. The route passes west to Hartland Point, before taking a broadly north-south orientation along the Hartland Peninsula to Bude, crossing between north Devon and Cornwall. The SWCP follows the coastline as it arcs westwards, to the south of Widemouth Bay, along North Cornwall. The SWCP exits the southern part of the study area at Constantine Bay, south of Trevoze Head. The closest part of the South West Coast Path is located approximately 52.6km from the Windfarm Site.
218. Within the study area, the SWCP passes through parts of the NDCAONB, along the Hartland Peninsula, and the CAONB Section 01: Hartland Marsland to Menapoint Church, Section 02: Pentire Point to Widemouth, and Section 04: Carnewas to Stepper Point. Two areas of defined Heritage Coast broadly coincide with the AONB boundaries, including Hartland (Devon and Cornwall) Heritage Coast, and Pentire Point to Widemouth Heritage Coast.
219. The SWCP provides opportunities to access tracts of coast where in many places, no other means of public access exists. It also offers a linear experience where users of the path along the coastline are afforded views of the sea in an almost continuous manner, to a greater or lesser degree, with enclosed bays, landforms and coast vegetation providing some stretches where views of the sea disappear, but these are relatively scarce, and the sea is almost continually visible. The South West Coast Path

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<sup>1</sup> [https://www.nationaltrail.co.uk/en\\_GB/trails/england-coast-path-south-west/route-description/](https://www.nationaltrail.co.uk/en_GB/trails/england-coast-path-south-west/route-description/) (accessed November 2022)

association also notes that the SWCP provides half day routes, short walks, plus easy access walks.

220. The SWCP Association divides the SWCP by geographic areas, into a 52 day itinerary, some of which fall within the SLVIA study area as listed in **Table 19.20**. These sections are used as the basis for the further description and assessments of the visual effects of the Windfarm in **Section 19.7.1**. Section numbers have been added by OPEN, for ease of reference to

222. Figure 19.12.

*Table 19.20 SWCP Sections within the study area*

No.	Geographic Area	From	To	Total Section Length (km)
1	North Devon	Clovelly	Hartland Quay	16.6 (partially within study area)
2	North Devon / Cornwall	Hartland Quay	Bude	24.5
3	North Cornwall	Bude	Crackington Haven	15.8
4	North Cornwall	Crackington Haven	Tintagel	17.9
5	North Cornwall	Tintagel	Port Isaac	14.6
6	North Cornwall	Port Isaac	Padstow	18.8 (partially within study area)
7	North Cornwall	Padstow	Porthcothan	21.3 (partially within study area)

#### 19.4.4.3 Visual Receptors - Pembrokeshire Coast Path (Wales Coast Path)

223. The Wales Coast Path is a continuous waymarked path around its entire coast. Through Pembrokeshire the path is referred to as the Pembrokeshire Coast Path (PCP) and has National Trail status.

224. The PCP enters the northern part of the SLVIA Study area at the St Ann's Head, before taking an inland route outside of the study area that largely follows the coastline around Milford Haven and Pembroke. The PCP re-enters the study area to the south of Angle Bay, passing along the coastal edge towards Castlemartin and the MOD firing range, to St. Govan's Head. The route then heads northwards towards Stackpole before exiting the study area once more.

225. The section of the PCP within the study area also lies within the designated landscape of the PCNP. The closest part of the PCP is located 55.3km from the Windfarm Site. The total length of the PCP through the SLVIA Study area is approximately 40.1km. PCNPA/Visit Pembrokeshire estimate that 10 to 15 days are required to complete the full walk of 299km between St. Dogmaels in the north to Amroth in the south.

226. The PCP provides opportunities to access tracts of coast where in many places, no other means of public access exists. It also offers a linear experience where users of the path along the coastline are afforded views of the sea in an almost continuous manner, to a greater or lesser degree, with enclosed bays, landforms and coast



vegetation providing some stretches where views of the sea disappear, but these are relatively scarce, and the sea is almost continually visible. There are also over 200 circular walks which link to the PCP and provide half day routes, short walks, plus easy access walks.

227. The PCNPA defines an itinerary for 15 sections of the Pembrokeshire Coast Path National Trail, some of which fall within the SLVIA Study area as listed in **Table 19.21**. These sections are used as the basis for the further description and assessments of the visual effects of the Windfarm Site on views from the Pembrokeshire Coast Path in **Section 19.7.1**.

*Table 19.21 PCP Sections within the study area*

Section	From	To	Total Section Length (km)
12	Angle	Freshwater West	16.1 (partially within study area)
13	Freshwater West	Broad Haven South	16.1
14	Broad Haven South	Skrinkle Haven	17.7m (partially within study area)

228. A very short section of 9: Martin's Haven to Dale lies on the fringes of the study area. Effects would be similar to those experienced in Section 12, which is described in detail in **Section 19.7.1**.

#### 19.4.5 Visibility and the Influence of Weather

229. Whilst ZTV mapping can model the theoretical visibility of the WTGs, it is important to note that other factors, including atmospheric conditions will impact visibility. The Met Office defines visibility as *"the greatest distance at which an object can be seen and recognised in daylight, or at night could be seen if the general illumination were raised to a daylight level."* (Met Office, 2000).

230. A quantitative description of the existing visibility frequency is provided using visibility data from the closest Met Office synoptic weather station at Chivenor, to highlight potential trends in the visibility conditions of the study area. This 'visibility data' shows a 10-year average of the frequency of observations at measured distances from the station between January 2012 to December 2021.

231. Visibility range and frequency is mapped in **Figure 19.20**, in the context of the Windfarm Site using visibility ranges based on Met Office visibility definitions: < 1km Very Poor; 1 - 4km Poor; 4 -10km Moderate; 10 - 20km Good; 20 - 40km Very Good; 40km > Excellent; and a further category of > 50km Excellent.

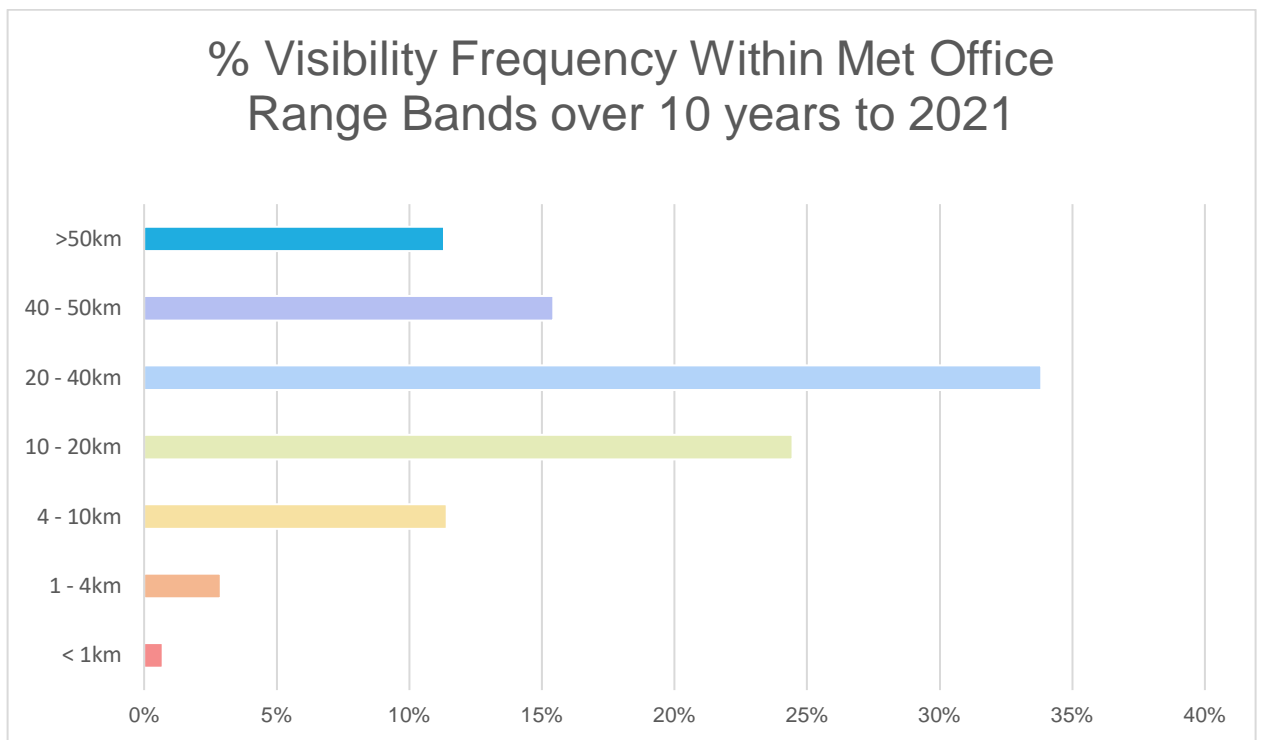
232. As a result of the distance of the Windfarm Site from mainland coastlines and visual receptors a further category has been included by OPEN which captures a visibility range of 50km > Excellent, which would be experienced in exceptional conditions. The visibility range is shown in bands extending from the Windfarm Site and is combined with the ZTV to show the likely frequency of visibility over at difference distances, as shown in **Table 19.22**.

*Table 19.22 Frequency of Visibility at Different Ranges*

Visibility (km)	Yearly average visibility frequency (%)	Visibility range and definition	% Visibility frequency (over 10 years)	Days per year visibility frequency (10 year average)
<b>0.00 =&gt; 0.99</b>	0.70	<1km Very poor	0.70%	2.56
<b>1.00 =&gt; 1.99</b>	0.47	1-4km Poor	2.89%	10.55
<b>2.00 =&gt; 2.99</b>	1.09			
<b>3.00 =&gt; 3.99</b>	1.33			
<b>4.00 =&gt; 4.99</b>	1.38			
<b>5.00 =&gt; 5.99</b>	1.66	4-10km Moderate	11.41%	41.65
<b>6.00 =&gt; 6.99</b>	1.74			
<b>7.00 =&gt; 7.99</b>	2.08			
<b>8.00 =&gt; 8.99</b>	2.17			
<b>9.00 =&gt; 9.99</b>	2.38			
<b>10.00 =&gt; 10.99</b>	2.52			
<b>11.00 =&gt; 11.99</b>	2.48	10-20km Good	24.45%	89.24
<b>12.00 =&gt; 12.99</b>	2.67			
<b>13.00 =&gt; 13.99</b>	2.43			
<b>14.00 =&gt; 14.99</b>	2.63			
<b>15.00 =&gt; 15.99</b>	2.53			
<b>16.00 =&gt; 16.99</b>	2.37			
<b>17.00 =&gt; 17.99</b>	2.42			
<b>18.00 =&gt; 18.99</b>	2.19			
<b>19.00 =&gt; 19.99</b>	2.21			
<b>20.00 =&gt; 20.99</b>	2.07			
<b>21.00 =&gt; 21.99</b>	2.01	20-40km > Very Good	33.83%	123.48
<b>22.00 =&gt; 22.99</b>	1.95			
<b>23.00 =&gt; 23.99</b>	1.87			
<b>24.00 =&gt; 24.99</b>	1.81			
<b>25.00 =&gt; 25.99</b>	1.77			
<b>26.00 =&gt; 26.99</b>	1.67			
<b>27.00 =&gt; 27.99</b>	1.70			
<b>28.00 =&gt; 28.99</b>	1.62			
<b>29.00 =&gt; 29.99</b>	1.73			
<b>30.00 =&gt; 34.99</b>	7.89			

Visibility (km)	Yearly average visibility frequency (%)	Visibility range and definition	% Visibility frequency (over 10 years)	Days per year visibility frequency (10 year average)
<b>35.00 =&gt; 39.99</b>	7.74			
<b>40.00 =&gt; 44.99</b>	7.47	40-50km > Excellent	15.43%	56.32
<b>45.00 =&gt; 49.99</b>	7.96			
<b>50.00 =&gt; 59.99</b>	11.31	50km > Excellent	11.31%	41.28
<b>60.00 =&gt; 69.99</b>	0.00			
<b>&gt;= 70.00</b>	0			

*Plate 19.2: Frequency of Visibility at Different Ranges as a Percentage*



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233. Although there are limitations to how this data can be applied to judgements about windfarm visibility out at sea, the visibility data provides context for an evidence basis for evaluating the visibility of the Windfarm in the prevailing conditions.

234. The visibility of the Windfarm that will be experienced by people will be influenced substantially by the prevailing weather and visibility conditions in the area. The visibility frequency data presented **Table 19.22** and **Plate 19.2** provides an understanding about the amount of time when visibility is experienced at the

distances required to see the offshore WTGs in the Windfarm Site and **Figure 19.20** relates this visibility data to the geographic extent of the SLVIA Study area.

235. Only Lundy Island falls within 40-50km of the Windfarm Site. The Met Office data shows that visibility within this distance range occurs for approximately 26.74 % of the time over the 10-year period. This equates to approximately 97.6 days per year on average that there would be visibility of the WTGs at this distance.
236. All remaining land areas of the SLVIA Study area including the north Devon, Cornwall, and Pembrokeshire coasts lie in excess of 50km of the Windfarm Site. The Met Office data shows that visibility frequency drops sharply at these longer distances, such that 'excellent' visibility over 50km occurred for only 11.31 % of the time over the 10-year period. This would equate to approximately 41.3 days per year on average that there is visibility beyond 50km, when there would be visibility of the Windfarm.
237. The Met Office visibility data allows some quantification of the likely frequency of visibility of the Windfarm Site from individual viewpoints, based on the distance of each viewpoint location. The Met Office visibility frequency data is used to inform an assessment of the 'likelihood of effect' from each viewpoint in **Section 19.7.1**, in order to qualify any significant effects assessed in optimum visibility conditions with how likely they are to actually occur given the prevailing weather / visibility conditions. The viewpoints included in the SLVIA range from 44.6km to 59.1km from the offshore WTGs within the Windfarm Site, with assessments of likelihood of effect varying from 19.25 % at the closest viewpoints: Viewpoint 6 Lundy Island (**Figure 19.29**) and Viewpoint 7 Rosslare to Cherbourg Ferry (

239. Figure 19.30). All of the remaining eight viewpoints would experience 11.31 % frequency of visibility in an average year.
240. The assessments made in the SLVIA are based on optimum viewing conditions with clear visibility of the turbines and as such assess the 'worst case' or maximum visual effect in optimum or 'excellent' visibility conditions.
241. It is reasonable to conclude that the prevailing visibility and weather conditions combine to reduce the duration and potential for significant effects to periods when clear views of the Development are available. In views from the land visibility would often be limited to the nearer rows of turbines, and the full depth of the Development would often not be seen or would be less visible.
242. Whilst this 'visibility' analysis is a useful indicator other factors such as contrast (largely influenced by lighting by the sun) scale, orientation and movement of the structures also need to be considered when determining the likely impact of optimum visibility at a certain range.
243. Relatively early work carried out on behalf of Scottish Natural Heritage (SNH) (University of Newcastle (2002). Visual Assessment of Windfarms Best Practice. Scottish Natural Heritage Commissioned Report F01AA303A) includes helpful information on the visibility and perception of wind turbines which considers the theoretical and actual visibility of objects located at a distance from observers.
244. Whilst it is noted that a 100m structure could theoretically be seen from near to sea level at a distance of 46km (i.e., it would not be fully screened beyond the horizon formed due to the earth's curvature) it is also advised that: "*actual human perception is affected by the acuity of the human eye. In good visibility (visibility is meteorologically defined as the greatest distance at which an object in daylight can be seen and recognised), a pole of 100 mm diameter will become difficult to see at 1km and a pole of 200 mm diameter will be difficult to see at 2km. In addition, mist, haze or other atmospheric conditions may significantly affect visibility (Hill et al, 2001). Assuming this relationship is linear, and assuming absolute clarity of view, this suggests that the outer limit of human visibility in clear conditions of a pole (e.g., a notionally cylindrical wind turbine tower) 5000 mm (5 m) in diameter (a representative figure for a 60+ m high tower) will be of the order of 50km; and the absolute limit of visibility imposed by the limit of the horizon viewed across a flat plane is similar at approximately 46km.*"
245. This finding corresponds with OPEN's observations of onshore wind farms in the field where occasionally, in clear conditions, it is possible to observe wind turbines at distances in excess of 50km. Turbines of larger size, such as those at Whitelee (107-

140 m to tip) are occasionally visible in excellent weather conditions at even greater distances (e.g., from the Merrick to the south-south-east at a distance of approximately 57km and from the west on the Isle of Arran at similar distances).

246. The cylindrical towers of the WCS would have a larger maximum diameter of 10 m. Assuming the same linear relationship of visual acuity suggested above this would suggest that in the clearest of conditions it would be difficult to see a 10 m wide structure at a range of 90km. However, whilst this may theoretically be the case from elevated locations it would not be possible to see the towers at this range, from heights of less than 40m Above Ordnance Datum (AOD), due to the screening effect of the earth's curvature.
247. The Best Practice Guidance (University of Newcastle (2002)) provides further detail on how human perception is also a factor in how a wind farm will be seen. Importantly it states at 3.4.5 that: *People perceive size, shape, depth and distance by using many cues, so that context is critically important. When people see partial or incomplete objects, they may mentally 'fill in' the missing information, so that partial views of turbines may have less effect than imagined. Although people may be able to physically 'see' an object, inattentional 'blindness' caused by sensory overload, or a lack of contrast or conspicuousness, can mean they fail to 'perceive' the object. In a contrary way, large size, movement, brightness and contrast, as well as new, unusual or unexpected features, can draw attention to an object. In all these effects, issues such as experience, familiarity and memory may have an important role to play. Therefore, perception depends on experience, the visual field, attention, background, contrast and expectation, and may be enhanced or suppressed.*"
248. Two further factors of depth perception and size constancy are also discussed as being fundamental to perception and the following conclusions drawn: *"that the magnitude or size of windfarm elements, and the distance between them and the viewer, are basic physical measures that affect visibility, but the real issue is human perception of visual effects, and that is not simply a function of size or distance."*
249. Other factors of relevance to the understanding of the seascape, landscape and visual effect of the Windfarm are listed in section 5 of the study and are summarised as follows:
- Lighting – It was observed that direct light shining on the turbines has the effect of increasing the prominence of the structures and this effect operated over a wide middle distance range. Viewpoints to the south of a windfarm (in the arc from east through south to west) were said to experience this effect whereas back-lit effects occurred at viewpoints to the north (in the arc from east through north to west).

It was also noted that: *"The seasonal effects of light (linked with weather and cloud cover) should be considered in relation to human receptors. For residents, year-round conditions are relevant. For tourists and other recreationists, winter conditions will affect fewest people and summer conditions will affect most."*

- Movement and Orientation – It was found that the movement of the blades, in all cases where this was visible, increased the visual effect of the turbines because it tended to draw the eye. Movement was more perceptible when backdropped against dark vegetation compared to grey sky. In addition, due to the fact that the prevailing wind in the UK is generally from the south-west, viewpoints in the quadrants from south through south-west to west, and from north through north-east to east, experience the longest periods of exposure to visible movement. It was also judged that rotors seen in the plane oriented at 180 degrees to the viewpoint appear relatively nearer.
- Distance, Colour and Contrast - At short distances, the study found that colour is clearly seen, and colour and light do not have a dramatic modifying effect on visibility, except in extreme overcast conditions or at dawn or dusk. As distance increases, the eye cannot distinguish colour and all structures are seen as grey. Light coloured (lit) turbines appeared closer than grey (unlit) turbines at similar distances. *"Seen against a blue or pale sky, but not sunlit, grey turbines appear dark. As the sky darkens, because of cloud cover or time of day or season, the contrast between sky and turbines decreases and at long distances (e.g., over approximately 10km) the turbines may become indistinct because of this. Turbines can appear white against a dark sky if they are lit by sun through patches of cloud."*
- Landscape character and receptors - The character of the landscape and especially elements within it was found to influence perceptions of magnitude. In landscapes that were free of man-made elements the turbines were sometimes much more conspicuous in the middle and long-distance ranges and this influenced the author's judgements of their magnitude.

250. The prevailing south-westerly winds mean that locations on the North Cornwall coast to the south and south-west, and the Pembrokeshire Coast to the north and north-east, are likely to experience the longest periods of exposure to visible movement. It is important to note that the visualisations presented in **Figure 19.24** to **Figure 19.33** represent the 'worst case' scenario whereby the turbine blades and hubs are orientated to face the viewpoint, not the prevailing wind direction. The lighting of the turbines has been generated to match the conditions, date, and time the baseline photography was taken, which was timed, as far as reasonably possible, so that the sun is behind the camera at each viewpoint and consequently the turbines would be directly lit which would also increase their prominence.



### 19.4.6 Dark skies and night lighting

251. The baseline lighting conditions across the SLVIA Study area vary considerably and there is no single data source that serves to provide a detailed or quantitative evidence base of the existing night-time lighting levels. The Campaign to Protect Rural England (CPRE) has produced interactive maps of the UK's light pollution and dark skies as part of a national mapping project (LUC / CPRE, 2016).
252. The CPRE map shown in

254. **Figure 19.21** shows that the closest land mass within the SLVIA Study Area, Lundy Island, is a dark location with low night-time lighting level. The island is sparsely inhabited, with scattered properties, no illuminated roads, and the island's electricity supply is not usually available after midnight<sup>2</sup>. The island is recognised as a Dark Sky Discovery Site<sup>3</sup>
255. In respect of other notably dark locations, the darker areas of the NDCAONB, and the CAONB (Hartland and Pentire Point to Widemouth sections) are typically undeveloped, coastal hinterland, rural, or agricultural landscapes with minimal artificial lighting that might impact on night skies. As a consequence, much of the designated landscape along the coast falls within the two darkest night sky categories. In most cases, existing sources of light at the coast tend to be limited to point sources from infrequent settlement, isolated coastal dwellings, lit vessels, and cardinal buoys in the sea at night, and a small number of lighthouses found sporadically along the coastline and out at sea on Lundy Island. Notably the CPRE mapping does not show light sources in the wider area that may be influential in views but only identify light occurring in geographical areas.
256. The areas of brighter lighting radiance are focused on settlement along the coastal edge, including: Harlyn, Polzeath, Tintagel, Great Wanson, Bude, Hartland, and the GCHQ facility a south of Morwenstow. The majority of the coastal urbanised areas, Tintagel, Great Wanson, Bude, and the GCHQ facility fall within the 'brightest' to 'brighter' light radiance category (the greatest, light-influenced end of the spectrum). Lighting kept on for longer than it is needed or units that spill light upwards, rather than to where it is most needed, contribute to sky glow, light intrusion, and add to light pollution.
257. On the closest parts of the PCNP and Pembrokeshire coast, much of the inner Milford Haven area with brightest lighting at night is outside the PCNP, however there is a transition from this urbanised area of greatest light influence into parts of the PCNP around outer Milford Haven and the surrounding landscape. There is a transition from brighter to darker skies with increasing distance from Milford Haven to the north and south, and towards the PCNP coastline. Other, more contained, areas of brighter light influence within the PCNP include the smaller settlements in the Study area, such as St David's, Broad Haven/Little Haven, St Ishmael's, Dale, and

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<sup>2</sup> <https://www.landmarktrust.org.uk/lundyisland/staying/staying-on-lundy/useful-information/> accessed 09.09.2022

<sup>3</sup> <https://www.darkskydiscovery.org.uk/dark-sky-discovery-sites/map.html> accessed 09.09.2022

Angle; military bases such as the Merrion Camp and Cawdor Barracks; and close to the A487 and around caravan parks. The dataset also indicates areas of brighter lighting in the waters of St Brides Bay, which may indicate lighting of vessels at anchor.

258. The relatively less light influenced, darker areas of the PCNP coincide with the coastal landscape of the PCNP and the inshore waters of the Pembrokeshire coastline. Parts of the Pembrokeshire Coast National Park are still relatively undeveloped with minimal impact of lighting on the night sky. The large majority (95%) of the PCNP falls within the two darkest night sky categories. Generally, there is a lack of light pollution, producing dark night skies, although there are views to sources of light outside the PCNP, particularly Pembroke Power Station and Valero oil refinery at Rhoscrowther, and urban areas around Milford Haven. In general, though, existing sources of light at the coast tend to be limited to point sources of light from isolated coastal dwellings, lit vessels, and cardinal buoys in the sea at night, and the lighthouses on Skokholm and St Ann's Head in Wales, which are a strongly associated coastal and maritime feature. The Smalls and Bishop lighthouses, and the North and South lighthouses on Lundy are features on isolated islands further out to sea.
259. The Background Paper: Special Qualities of PCNP report (PCNPA, 2018) describes the night skies as part of the special quality of 'Remoteness, Tranquillity and Wildness' in the PCNP, as follows *"Part of the special appreciation of the National Park is the ability to absorb not only the tranquillity and sense of calm during the day, but the big skies of the evening and the radiance of the stars on a clear night. Areas with substantial night-time light pollution within the National Park, are centred upon the main settlements of Tenby and Saundersfoot and St Davids, although moderate night time light pollution is identified for the southern slopes of the Preseli Hills and the hinterland for Tenby and Saundersfoot. One particularly unique aspect is the lack of light pollution of the night sky. It is wonderful to get such a clear view of the 'greatest show on earth', this may be another aspect of the Park which is worth promoting."*

#### 19.4.7 Do Nothing Scenario

260. The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) require that *"an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge"* is included within the ES (EIA Regulations, Schedule 4, Paragraph 3). From the point of assessment, over the course of the development and operational lifetime of the Offshore Project (operational lifetime anticipated to be a minimum of 25 years), long-term trends mean that the

condition of the baseline environment is expected to evolve. This section provides a qualitative description of the evolution of the baseline environment, on the assumption that the Offshore Project is not constructed, using available information and scientific knowledge of offshore seascape, landscape, and visual amenity.

261. The main driver of change within the seascape, landscape and visual amenity is climate change. Aspects that may cause change are likely to take three forms; measures to mitigate against the adverse effects of climate change and measures put in place to try and limit the future effects of it; and the actual effects of climate change on our landscape, for example through coastal erosion, sea level rise, and predicted changes to vegetation cover. In addition, the effects of the United Kingdom's exit from the European Union and long-term effects of the COVID-19 pandemic and the recovery from it may also have a supplementary effects.
262. The need for increased flood defence measures is likely to be a driver for change in relation to the coastline and water courses as well as potential changes to other land use practices.
263. Net Zero carbon emission targets are likely to see an increase in renewable energy development, which is likely to include further onshore and offshore wind farm development, tidal and wave power projects, and solar development. A particular focus for offshore wind farms is likely to occur within the areas identified in the Celtic Sea Floating Offshore Wind 'Areas of Search,' identified by the Crown Estate<sup>4</sup>. These areas extend far offshore, within the Celtic Sea, to the north-west of Cornwall and south-west of Wales. Future development within these areas may in turn require further grid infrastructure to connect with the national grid and consumers.
264. Increased walking, cycling and public transport infrastructure may result in changes within urban and rural areas to accommodate this with the aim of reducing vehicular travel and providing increased amenity resources.
265. Following the United Kingdom's exit from the European Union new policies are being drawn up to replace the Common Agricultural Policy. This may result in different agricultural practices being subsidised so that land-uses and land management practices that can reduce or offset carbon emissions become more prevalent. These may include increased tree cover; hedgerow planting and areas being left un-grazed.

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<sup>4</sup> <https://www.thecrownestate.co.uk/en-gb/what-we-do/on-the-seabed/floating-offshore-wind/> (accessed November 2022)

There may also be increases in food production in the UK in order to reduce our need to import, which may also change farming infrastructure and practices.

266. The recent change in how people work - at home rather than travelling to offices - is likely to continue and may result in changes to town centres where there is a focus on commercial property. Such changes may also put more development pressure on rural communities.

## 19.5 Potential impacts during construction

### 19.5.1 Effects on Seascape Character

267. The construction of the Offshore Project has the potential to result in significant effects on the perceived seascape character of Marine Character Areas (MCAs) scoped into the assessment in **Table 19.13** and **Table 19.14**.
268. Construction phase effects on seascape character will occur as a result of the construction activities, including the presence of jack-up vessels and/or dynamic positioning heavy lift vessels during the construction phase for the installation of floating offshore WTGs and OSP; windfarm service vessels and accommodation vessels; and partially constructed offshore elements; all of which may combine to alter the seascape character of the area within the Windfarm Site and the perceived character of the wider seascape through visibility of the construction activities.
269. The residual effects arising as a result of the construction of the Windfarm Site are assessed as being of the same magnitude and significance on all seascape character receptors as those arising due to their operation and maintenance, as assessed in **Section 19.7**, with the residual effects being short-term and temporary, occurring during the length of the construction phase and differing in nature from the operational effects mainly due to the influence of the various construction vessels in the seascape, including vessels that will not be present or result in effects during the operational phase. The proposed construction of White Cross Offshore Windfarm will see pre-fabricated WTG components and substructure blocks delivered to a local assembly site onshore. The substructure will be assembled in dry dock/on quayside then floated. The WTGs will then be integrated onto floating substructure before being towed to the Windfarm Site. Moorings will have been pre-laid so upon arrival of floating WTGs the moorings will be hooked up. This effectively means that the offshore construction effects would in fact only occur over the period when the WTGs are present, across approximately 8 months, rather than the full construction period when most works will have taken place below sea level with only a few boats present. Construction of the OSP would take approximately one year.

### 19.5.2 Effects on Landscape Character and Landscape Planning Designations

270. The construction of the Windfarm has the potential to result in significant effects on the perceived landscape character of Lundy Island, and the Special Qualities of the PCNP, NDCAONB, and CAONB scoped into the assessment in **Section 19.4.3**.
271. Construction phase effects will occur as a result of the construction activities, including the presence of jack-up vessels and/or dynamic positioning heavy lift vessels during the construction phase for the installation of floating offshore WTGs and OSP; windfarm operation and maintenance service vessels; and partially constructed offshore elements; all of which may combine to alter the perceived character of the wider landscape through visibility of the construction activities.
272. The residual effects arising as a result of the construction of the Offshore Project are assessed as being of the same magnitude and significance on all landscape receptors as those arising due to their operation and maintenance, as assessed in **Sections 19.11, 19.12, and 19.13**, with the residual effects being short-term and temporary occurring during the length of the construction phase and differing in nature from the operational effects mainly due the influence of the various construction vessels visible during the construction phase, including vessels that will not be present or result in effects during the operation and maintenance phase.

### 19.5.3 Effects on views and visual amenity

273. The construction of the Windfarm Site has the potential to result in significant effects on the views and visual amenity of the visual receptors scoped into the assessment in **Table 19.19, Table 19.20, and Table 19.21**.
274. Construction phase effects on views and visual amenity will occur as a result of the construction activities, including the presence of jack-up vessels and/or dynamic positioning heavy lift vessels during the construction phase for the installation of and floating offshore WTGs and OSP; windfarm service vessels and accommodation vessels; and partially constructed offshore elements; all which may combine to alter the views and visual amenity through visibility of these changes.
275. The residual effects arising as a result of the construction of the Windfarm Site are assessed as being of the same magnitude and significance on all viewpoints and visual receptors as those arising due to their operation and maintenance, as assessed in **Section 19.7**, with the residual effects being short-term and temporary occurring during the length of the construction phase and differing in nature from the operational effects mainly due the influence of the various construction vessels visible

during the construction phase, including vessels that will not be present or result in effects during the operation and maintenance phase.

276. As described in **Table 19.6**, construction phase effects on visual amenity and seascape character will occur as a result of the construction activities, including laying new offshore export cables to shore; the construction phase for the installation of and WTGs and OSP; windfarm service vessels and; and partially constructed offshore elements; all of which may combine to alter the visual amenity and seascape character through visibility of the construction activities. Temporary impacts may also arise as a result of the WTG fabrication in the locality of the installation port (to be determined) and temporarily during the tow out from the port facility. Temporary effects resulting from WTG fabrication will also be associated with port operations and typically industrialised setting and are not expected to be significant.
277. The residual effects arising as a result of the construction of the Windfarm Site are assessed as being of the same magnitude and significance on all seascape, landscape and visual receptors as those arising due to their operation and maintenance, as assessed in **Section 19.7**, with the residual effects being short-term and temporary, occurring during the length of the construction phase and differing in nature from the operational effects mainly due the influence of the various construction vessels in the seascape, including cable laying vessels closer to shore within the export cable corridor, during the construction phase that will not be present or result in effects during the operation and maintenance phase.

## 19.6 Potential impacts during decommissioning

278. No decision has been made regarding the final decommissioning policy for the Offshore Project as it is recognised that industry best practice, rules and legislation change over time. The decommissioning methodology would be finalised nearer to the end of the lifetime of the Offshore Project to be in line with current guidance, policy and legalisation at that point. Any such methodology would be agreed with the relevant authorities and statutory consultees. The decommissioning works are likely to be subject to a separate licencing and consenting approach.
279. The anticipated decommissioning activities are outlined in **Section 5.10 of Chapter 5: Project Description**. The potential impacts of the decommissioning of the Offshore Project have been assessed for SLVIA on the assumption that decommissioning methods will be similar or of a lesser scale than those deployed for construction.

### 19.6.1 Effects on Seascape Character



280. The decommissioning of the Offshore Project has the potential to result in significant effects on the perceived seascape character of Marine Character Areas (MCAs) scoped into the assessment in **Table 19.13** and **Table 19.14**.
281. Decommissioning phase effects on seascape character will occur as a result of the decommissioning activities, including the presence of jack-up vessels and/or heavy lift vessels during the decommissioning of the floating WTGs and OSP; windfarm service vessels; and partially decommissioned offshore elements. These decommissioning phase activities may combine to alter the seascape character of the area within the Windfarm Site and the perceived character of the wider seascape through the visibility of these decommissioning activities. These effects will however only occur during the decommissioning phase, beyond which decommissioning will prevent longer-term visual impact arising as the Offshore Project will be removed from the seascape.
282. The effects arising as a result of the decommissioning of the Offshore Project are assessed as being of the same magnitude and significance on all seascape character receptors as those arising due to their operation and maintenance, as assessed in **Section 19.7**, differing primarily as the effects being short-term and temporary during the length of the decommissioning phase. There may also be some variation in appearance of the decommissioning activities, compared to the operation and maintenance phase, mainly due to the appearance of partially decommissioned offshore WTGs and OSP over the short-term and the influence of the decommissioning vessels in the seascape that will not be present during the operation and maintenance phase.

### **19.6.2 Effects on Landscape Character and Landscape Planning Designations**

283. The construction of the Windfarm has the potential to result in significant effects on the perceived landscape character of Lundy Island, and the Special Qualities of the PCNP, NDCAONB, and CAONB scoped into the assessment in **Section 19.4.3**.
284. Decommissioning phase effects on landscape character and landscape planning designations will occur as a result of the decommissioning activities, including the presence of jack-up vessels and/or heavy lift vessels during the decommissioning of the floating WTGs and OSP; windfarm service vessels; and partially decommissioned offshore elements. These decommissioning phase activities may combine to alter the perceived character of the wider landscape through the visibility of these decommissioning activities. These effects will however only occur during the

decommissioning phase, beyond which decommissioning will prevent longer-term visual impact arising as the Offshore Project will be removed from the seascape.

285. The effects arising as a result of the decommissioning of the Offshore Project are assessed as being of the same magnitude and significance on all landscape character receptors as those arising due to their operation and maintenance, as assessed in **Section 19.7**, differing primarily as the effects will be short-term and temporary during the length of the decommissioning phase. There may also be some variation in appearance of the decommissioning activities, compared to the operation and maintenance phase mainly due to the appearance of partially decommissioned offshore WTGs and OSP over the short-term and the influence of the decommissioning vessels during the decommissioning phase that will not be present during the operation and maintenance phase.

### 19.6.3 Effects on views and visual amenity

286. The decommissioning of the Windfarm Site has the potential to result in significant effects on the views and visual amenity of the visual receptors scoped into the assessment in **Table 19.19**, **Table 19.20**, and **Table 19.21**.

287. Decommissioning phase effects on views and visual amenity will occur as a result of the decommissioning activities, including the presence of jack-up vessels and/or heavy lift vessels during the decommissioning of the floating WTGs and OSP; windfarm service vessels; and partially decommissioned offshore elements. These decommissioning phase activities may combine to alter the views and visual amenity through the visibility of these decommissioning activities. These effects will however only occur during the decommissioning phase, beyond which decommissioning will prevent longer-term visual impact arising as the Offshore Project will be removed from the seascape.

288. The effects arising as a result of the decommissioning of the Offshore Project are assessed as being of the same magnitude and significance on all viewpoints and visual receptors as those arising due to their operation and maintenance, as assessed in **Section 19.7**, differing primarily as the effects will be short-term and temporary during the length of the decommissioning phase. There may also be some variation in appearance of the decommissioning activities, compared to the operation and maintenance phase mainly due to the appearance of partially decommissioned offshore WTGs and OSP over the short-term and the influence of construction vessels during the decommissioning phase that will not be present during the operation and maintenance phase.

## 19.7 Potential impacts during operation and maintenance

289. The potential impacts of the operation and maintenance of the Offshore Project have been assessed on seascape, landscape, and visual receptors. A description of the potential effect on seascape, landscape, and visual receptors caused by each identified impact is given in this section.
290. Effects are considered holistically across the SLVIA study area described in **Section 19.4**, within England and Wales. The focus of the assessment is the WCS, presented in **Section 19.3.3**.
291. In this section of the assessment the effects on landscape character and seascape character, although different to those effects that are purely visual, only occur as a result of the Offshore Project being visible. Therefore, they are inextricably tied. This also applies to the effects on the identified Special Qualities of the AONBs and the PCNP. These can only occur if the Offshore Project is perceived (visible) from these nationally designated landscapes.
292. In order to try and simplify the interrelated assessment of the effects on visual resource, landscape character, seascape character and special qualities of the AONBs and PCNP, which are interrelated, these aspects are considered together in this section as they relate to areas of land and the outlying sea.
293. Effects on the offshore visual amenity are, therefore, considered primarily in relation to the representative viewpoints. The assessments of effects on the representative viewpoints and long-distance recreational routes SWCP and PCP have been undertaken with reference to viewpoint visualisations contained in **Figure 19.24** to **Figure 19.33**, which then informs the assessments of the effects on seascape character defined by MCAs in England and Wales, the effects on the landscape character of Lundy Island, and the effects on the Special Qualities of the NDCAONB, CAONB, and PCNP.
294. No likely significant effects are predicted to arise on other seascape, landscape, and visual receptors within the study area. These conclusions have been agreed through consultation with stakeholders and are made based on the knowledge of the baseline environment, the nature of planned works and the wealth of evidence on the potential for impact from such projects more widely.

### 19.7.1 Potential Visual Effects

295. Effects on views are the changes to views experienced by people that would result from the introduction of the WTGs and OSP within the Windfarm Site. The assessment of effects on views includes effects on people at representative viewpoints and on

principal visual receptors (i.e., groups of people in settlements, motorists on roads or users of recreational routes).

296. A detailed assessment of the visual effects of the operation and maintenance of the Windfarm Site from the agreed representative viewpoints is set out in the following assessment in **Section 19.7.2** to **Section 19.7.11**.
297. The SLVIA focuses on the receptors located within areas from where they may gain views of the Windfarm. The starting point for understanding potential visibility is ZTV mapping.
298. The blade tip and hub height ZTVs (**Figure 19.4** and **Figure 19.5**) show the main area from where the offshore WTGs within the Windfarm Site will theoretically be visible, highlighting the different areas where people who may experience views and assisting in the identification of viewpoints where they may be impacted. These ZTVs are however, a worst-case overstatement of visibility as they are based on bare-earth terrain models and also do not take account of atmospheric clarity where there may be a theoretical line of sight, however the offshore WTGs may not be visible due to the weather conditions, which is discussed further in **Section 19.4.5**.
299. The SLVIA assesses the WCS, which is considered to have the maximum potential effect on seascape, landscape, and visual receptors. The ZTV has been calculated using digital terrain data, which does not account for the screening effects of vegetation or built form. It also does not indicate the reduction in visibility that occurs with increased distance from the Windfarm Site or atmospheric deterioration of visibility due to the weather conditions. The Blade Tip ZTV therefore presents a theoretical worst-case and is likely to overstate the actual visibility of the offshore WTGs, which would be further screened by either vegetation, built form, and / or prevailing atmospheric conditions.
300. The ZTVs (**Figure 19.4** and **Figure 19.5**) also shows that the WTGs will not be visible from areas shown in 'white' in the mapping with no ZTV colouring, where the terrain prevents views of the offshore WTGs within the Windfarm Site.
301. The landward, topographical influences define the extent of the ZTV.

303. Figure 19.7 shows the landform within the study area. The closest land is Lundy Island. The island has a plateau topography that falls away gently eastwards from a high point at approximately 143 m AOD. The coastline of Lundy has steep cliffs reaching over 100 m in places. The closest point of the north Devon coast to the Windfarm Site is the Hartland Peninsula, rocky headlands and pebbly bays give way to relatively flat inland plateau, incised by steep combes running down to the sea. Further south, the Culm Plateau falls away to the wide Bude Basin, denoted by a shallow undulating landform with a coastline of low cliffs and stretches of sandy beaches. Inland, the basin rises gently to approximately 140 m. To the west of Bude Basin, topography rises towards the Kellan Head to Millook Haven Coast. This section of the coastline rises to the highest cliffs in Cornwall at 240 m AOD and a variety of coves, islands, and stacks. Inland, the dramatic coastal landform is backed by the Delabole Plateau to the east which forms a broad topped undulating ridge falling from its highest point at Hendraburnick Down at over 300m AOD to around 175m AOD at its westernmost point and 139m AOD near the coast to the north. South of Kellan Head to Millook Haven Coast, landform falls away inland to the Camel Estuary which curves eastwards and inland from the coast. Trevoze Head marks the western tip of this section of the Cornwall coast. The area is a low lying, gently undulating plateau, around 60m AOD, with shallow and incised valleys, generally lower than the northern headlands at Trevoze Head and Stepper Point which both reach 74m AOD. The land rises gradually towards Bears Down in the south. Across the closest parts of the Pembrokeshire coast, at a minimum distance of approximately 54.7km, the topography has distinctive west-north-west to east-south-east orientation cliffs, with some relatively level platform areas inland, backed by escarpments to the north.
304. The ZTV shows that in north Devon and Cornwall, from the landscape inland of the A39, theoretical visibility of the WTGs would be largely screened by the intervening landform and generally affords either no theoretical visibility, or has very fragmented and isolated areas of theoretical visibility of the WTGs, at long distances far in excess of 60km. The main areas of higher theoretical visibility of the WTGs will be from seaward-facing slopes. Within the seaward facing slopes, the topography creates subtle containment within coastal slopes and combes, and incised coastal valleys.
305. The ZTVs (**Figure 19.4** and **Figure 19.5**) show the theoretical visibility without screening from woodland and buildings. Visibility from streets, open spaces and low storey buildings within coastal, urban areas will typically be contained within the urban environment by surrounding built form, with most visibility of the offshore WTGs at the sea-front or where buildings or intervening open areas allow visibility from further back.

306. Due to the potential height of the WTGs, there will be some limited and long distance visibility of the offshore elements from the northern fringes of Bodmin Moor and some elevated areas of high culm plateau within Devon.
307. There will also be visibility of the offshore elements of the WTGs from the coastal areas of Devon, beyond the Hartland Peninsula around the North Devon Coastal Downs and high culm ridges to the north and east of Bideford Bay, at distances in excess of 70km. Theoretical visibility of the WTGs also extends along the Pembrokeshire coast, between the Skomer Island and Chapel point. The ZTV shows a highly fragmented pattern across this section of the Wales coastline, generally from the coastal edge and elevated escarpment further inland; at distances between 55-65km.
308. The viewpoint locations as well as the extent of the visualisations and assessment associated with them were agreed through the scoping process and through further stakeholder consultation in advance of the ES preparation.
309. Part of the post scoping consultation process was to agree the number of viewpoints suggested during scoping. This was in order to ensure that sufficient information was provided but also to ensure proportionality, commensurate with the scale and nature of the development proposal and its likely significant effects.
310. GLVIA3 acknowledges at Paragraph 6.19 that *“larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ”*. No guidance is provided in GLVIA3 on the appropriate number of viewpoints. However, it is noted that *‘The viewpoints used need to cover as wide a range of situations as is possible, reasonable and necessary to cover the likely significant effects.’*
311. Representative viewpoints are used to represent an area where there may be a variety of receptors and where significant effects may arise.

## 19.7.2 Viewpoint 1: Stack Rocks, Pembrokeshire

### 19.7.2.1 Baseline and Sensitivity to Change

312. The location and baseline panorama from Viewpoint 1: Stack Rocks are shown in **Figure 19.24**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.2.1.1 Baseline

313. The viewpoint is located at Stack Rocks, on the coastline just off the Pembrokeshire Coast Path and the Stack Rocks National Trust car park. Although it is not an OS marked viewpoint, it is a specific viewpoint that people visit particularly to view the Green Bridge of Wales, a natural rock arch, and the bird colonies on Elegug Stacks 'Stack Rocks,' two detached pillars of limestone. The tops of the stacks and the ledges below are crammed in spring with guillemots and razorbills and draw many visitors to observe and photograph the birds. The viewpoint is accessible from the nearby Stack Rocks National Trust car park, accessed through the nearby artillery range, and via the Pembrokeshire Coast Path. This viewpoint is located on a wooden platform on the clifftops immediately to the west of the 'Green Bridge of Wales.' From the car park at the Castlemartin Ranges, there are several informal footpaths that provide access to the cliff tops; however, this is a natural destination point and popular with visitors to this location.
314. The sea horizon forms approximately 135 degrees of the 360-degree view.
315. Views inland take in the wide expanse of rough grassland and scrub within the firing ranges to the north. The topography also rises slightly inland, slightly restricting visibility in this direction. However, settlement on an elevated ridgeline further inland and to the north, including the church spire at Warren, and tall chimneys at Milford Haven, is seen along the inland skyline. The seaward facing coastal slopes, and restricted views inland, lend focus to the wide seascape to the south.
316. To the east, there are long views along the Castlemartin coastline to the prominent headland at Saddle Head. The flat-topped, sheer cliffs and varied geological features provide a variety and interest to views in this direction. Small buildings and communication masts can be seen on the skyline of some more distant headlands. To the west, the coastline around Flimston Down is less dramatic and instead encloses the sea view further west.
317. On the distant sea horizon, the low-profile of the distant Lundy Island is visible to the south-east. Shipping has little influence within the seascape to the south.

#### 19.7.2.1.2 Value

318. The viewpoint is located at Stack Rocks, on the coastline just off the Pembrokeshire Coast Path and the Stack Rocks National Trust car park. Although it is not an OS marked viewpoint, it is a specific viewpoint that people visit particularly to view the Green Bridge of Wales, a natural rock arch, and the bird colonies on Elegug Stacks 'Stack Rocks,' two detached pillars of limestone.



319. The view affords the opportunity to appreciate the ‘coastal splendour’ , and ‘remoteness, tranquillity and wildness’ identified in PCNP Special Qualities 1, 8 and 11 (**Table 19.18**), which are afforded planning policy protection. The viewpoint is within the PCNP and overlooks the South Pembrokeshire Heritage Coast (**Figure 19.18**), which implies a higher value to the visible landscape and has high scenic qualities relating to the content and composition of the visible landscape. The spectacle of the Green Bridge and Stack Rocks, including the bird life activities, sounds and smells, contributes greatly to the sense of place. The Green Bridge provides an example of the *“breathtaking landscape along this coast”* (PCNP, 2018) and the elevated cliff-top position is exposed and relatively isolated, affording panoramic sea views that take in the open seascape to the west/south-west and across Stack Rocks along the rugged coastline to Mewsford Point and Saddle Head. The seascape part of the view is not included in the designated PCNP (**Figure 19.18**).

#### 19.7.2.1.3 Susceptibility

320. The viewpoint is representative of the view experienced by people using the Pembrokeshire Coast Path, who gain dynamic but prolonged views along the South Pembrokeshire coastline, as well as visitors to Stack Rocks who may visit specifically to experience the coastline and view or to see the bird colonies, and whose main attention and interest are likely to be on their surroundings. The viewpoint affords a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea, however it is a wide, large-scale, and simple view out to sea, where complexity is avoided and the view is focused east/south-east towards Stack Rocks, along the cliff faces, arches and headlands of the coastline, which form notable features of interest in the view, and to a lesser degree focused on the open seascape to the west/south-west. Viewers experience a high level of visual amenity at the location and there are relatively few visual detractors.

#### 19.7.2.2 Magnitude of impact: Construction and Decommissioning

321. Activity within the Windfarm Site at a minimum range of 55.1km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

322. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.2.3 Magnitude of impact: Operation and Maintenance

323. The predicted view of the Windfarm Site from Viewpoint 1: Stack Rocks is shown in the wireline in **Figure 19.24**. The magnitude of impact to the view resulting from

the operation and maintenance of the Windfarm is assessed as **low**, for the reasons set out below.

324. The offshore WTGs will be located at a long distance, at a range between approximately 55.8km and 67.1km offshore from the viewpoint to its closest and furthest points. At such a long distance, the WTGs will be in the background on the distant seascape skyline, beyond the immediate seascape context and beyond the horizon. The WTGs are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency at this range and this does not take into account the deterioration of actual visibility due to visual acuity.
325. During these periods of excellent visibility, the hubs and blades of the WTGs will be visible above the skyline, however the semi-submersible platforms and majority of the tower and OSP will be hidden by the intervening horizon. The vertical height/apparent scale of the WTGs will be relatively small, the closest of which would occupy approximately 0.14 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. Southerly views across the cliffs, arches, stacks out to sea (the *“breathtaking landscape”*) and long views to Lundy Island and Devon to the south-east, on clear days, will not be impacted as the Windfarm Site is located outside this field of view, to the south-west. The vertical appearance of the WTGs may contrast with the horizontal emphasis of the sea skyline, but the WTGs will be relatively small in comparison to other vertical elements in the view such as the main coastal cliff landforms, stacks, and arches. The Offshore Project will however introduce new offshore WTG elements that are not currently features of the existing view.
326. The lateral spread of the offshore WTGs will occupy approximately 7.7° of the horizontal field of view (HFOV), which is a very narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
327. The wide open expanse of the seascape acts as a foil to the drama and complexity of the more intricate coastline. Although Lundy Island is visible in clear conditions, the seascape horizon has no features likely to hold the eye for a long duration. Consequently, it something that is scanned and then mostly attention is drawn back to the more interesting coastline.

328. The offshore WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from Stack Rocks and The Green Bridge, in a direction of the view perpendicular to the line of the coast and separated by expansive areas of intervening seascape and offshore waters. The WTGs may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there. However, the WTGs are sufficiently distant, small scale and narrow in lateral extent, that the panoramic views to the sea will be retained and the large majority of seascape remaining unchanged. The features that contribute to the coastal splendour' and spectacle of the coastline, particularly the dramatic, steep rocky coastline, Stack Rocks, and the Green Bridge, will not be changed as a result of views of the WTGs, which will be clearly separated from these features. Although the addition of man-made elements in its wider view may potentially influence the perceived remoteness and tranquillity experienced near Stack Rocks, the WTGs have a form that relates rationally to the exposure to the sea at the coastline. Whilst the assessment assesses the effects based on Excellent weather conditions for most of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

#### 19.7.2.4 Significance of effect: Construction and Decommissioning

329. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.2.5 Significance of effect: Operation and Maintenance

330. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.3 Viewpoint 2: Hartland Point, on South West Coast Path (SWCP)

331. The location and baseline panorama from Viewpoint 2 is shown in **Figure 19.25**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.3.1.1 Baseline

332. The viewpoint is located at the top of the high, sheer cliffs above Hartland Point. It is not an OS marked viewpoint, although there is a small interpretation board, nor is it a specific viewpoint with facilities for tourist visitors; however, it is located at a viewpoint of interest given it overlooks where the Bristol Channel meets the Atlantic Ocean, and the elevated vantage it offers to see the Hartland Point lighthouse at the foot of the dramatic, sheer cliffs to the north. The viewpoint is accessible from the SWCP, where a footpath spurs off to the north-west of the coastguard station.
333. The sea horizon forms approximately 195 degrees of the 360-degree view.
334. Views inland to the east, i.e., behind the viewpoint, are restricted by localised landform, vegetation and the coastguard station building which is located in close proximity immediately next to this location. To the south, the view opens across the rolling agricultural culm plateau. A patchwork of fields is strongly delineated by thick hedgerows, creating a distinctive pattern in the landscape. There is sparse settlement, with isolated farm buildings occasionally visible on higher ground; the spires of the Church of St. Nectan at Hartland appear just above a minor rise in the rolling landscape, with the settlement contained in sheltered landform of a valley.
335. The elevated plateau landform to the south restricts views of the dramatic high cliffs that lie along this section of the Hartland coast. In the far distance, is the long sweeping profile of the North Cornwall coast south of Bude. The drama of the view is to the north and north-west, where the sheer cliffs and jagged rocks fall away steep to the shore, with the Hartland Lighthouse a well-known landmark at the foot of the cliffs.
336. On the sea horizon, Lundy Island is seen to the north-west, in the offshore waters beyond Hartland Point and Hartland Lighthouse. At this range, it is possible to distinguish some of the more prominent features on the island including its sheer cliffs, the Lundy South Lighthouse, and the now-redundant 'Old Light' Lighthouse set within the Island's flat-topped plateau.

#### 19.7.3.1.2 Value

337. The view itself is not protected in planning policy, however it is located within the NDCAONB (**Figure 19.18**) and the view affords the opportunity to appreciate the Special Qualities 'Distinctive Coastal Scenery' and 'Landscape and Seascape of High Visual Quality' identified in the NDCAONB (**Table 19.16**), which are afforded planning policy protection. The location of the viewpoint within the NDCAONB and Hartland Heritage Coast, implies a higher value to the visible landscape and high scenic qualities relating to the content and composition of the visible landscape and

the seascape which forms part of its wider setting beyond the designated area. The elevated position on the cliff tops affords panoramic seaward views to the west, taking in views to the north-west that include Lundy Island in the distance, Hartland Point lighthouse at the foot of the near cliffs, and the relatively open, undulating agricultural plateau of the north Devon coastline to the south, and the vast open seascape that spans the view from the south, through the west and to the north, which provides an example of the “*seemingly infinite expanse of ocean*”, one of the Special Qualities of the NDCAONB.

#### 19.7.3.1.3 Susceptibility

338. This viewpoint is representative of the view experienced by people using the SWCP who make the short detour to visit this well-known promontory location, and who may gain prolonged and dynamic views out to sea from the coast as they follow the SWCP (see **Figure 19.16** and **Figure 19.17**). There are wide views across the vast seascape to the west, and to the focal point of Lundy Island, which is seen beyond the Hartland Point promontory in views to the north. The viewpoint allows a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea. There is a distinct contrast between the vast and simple expanse of ocean to the west, and the complexity of the highly patterned, agricultural landscape, the coastal edge and headland landforms which provide interest in the foreground and coastal views. The attention of people at this location may also be focused on the nearby feature of the Hartland Point Lighthouse. Nonetheless, there is a high level of visual amenity at this location with very few detracting visual influences.

#### 19.7.3.2 Magnitude of impact: Construction and Decommissioning

339. Activity within the Windfarm Site at a minimum range of 53.5km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

340. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.3.3 Magnitude of impact: Operation and Maintenance

341. The predicted view of the Windfarm Site from Viewpoint 2: Hartland Point, on South West Coast Path is shown in the photomontage in **Figure 19.25**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.

342. The offshore WTGs will be located at long distance, between 53.9km and 60.0km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs and OSP will be in the background on the distant seascape skyline, beyond the immediate seascape context. The WTGs and OSP are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency of the WTGs.
343. During periods of excellent visibility, the blades, hubs, and upper parts of the towers of the WTGs, and the OSP, will be visible above the skyline,. The vertical height/apparent scale of the WTGs will be relatively small, the closest of which would occupy approximately 0.29 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs may contrast with the horizontal emphasis of the sea skyline, but the WTGs will be relatively small in comparison to other vertical elements in the view such as the main coastal cliff landforms, the Hartland Lighthouse, and the mass of Lundy Island. The Windfarm will however introduce new offshore WTG elements that are not currently features of the existing view.
344. The lateral spread of the offshore WTGs will occupy approximately 11.8 ° of the horizontal field of view (HFoV), which is a narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
345. The wide open expanse of the seascape acts as a foil to the drama and complexity of the more intricate coastline and geological features. Lundy Island is visible in clear conditions and acts as a point of focus that will hold the eye. Consequently, it something that is scanned and then mostly attention is drawn back to the more interesting coastline. The WTGs may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.
346. The offshore WTGs and OSP will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from Hartland Point by expansive areas of intervening seascape and offshore waters. The WTGs and OSP are sufficiently distant, small scale and narrow in lateral extent, that the panoramic views to the sea which contribute to the NDCAONB special quality of *"seemingly infinite expanse of ocean"* would experience limited change. Views along the coastline to Lundy Island will be unchanged and the island would be seen in a different portion of the view, far



offshore to the west, such that the island would be appreciated within an open, undeveloped part of the seascape.

347. The offshore WTGs and OSP would appear in a part of the view defined entirely by undeveloped seascape and, therefore, would impact the quality of a sense of *“raw nature devoid of human influence.”* The features that contribute to the *‘distinctive coastal scenery’*, including the exposed rocky cliffs, distinctive landscape features, and views towards Lundy Island, will not be changed as a result of views of the WTGs, which will be clearly separated from the coast, headlands, and islands by large areas of intervening seascape.

#### 19.7.3.4 Significance of effect: Construction and Decommissioning

348. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.3.5 Significance of effect: Operation and Maintenance

349. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, For the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.4 Viewpoint 3: Vicarage Cliff, west of Morwenstow (on SWCP)

350. The location and baseline panorama from Viewpoint 3: Vicarage Cliff, west of Morwenstow, are shown in **Figure 19.26**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.4.1.1 Baseline

351. The viewpoint is located at the top of the high, sheer sea cliffs to the west of Morwenstow. It is not an OS marked viewpoint, nor is it a specific viewpoint with facilities for tourist visitors, although ‘Hawker’s Hut’ is a National Trust owned feature and place of interest located on the cliff tops close to this location. The viewpoint is located on an elevated section of the SWCP, within North Cornwall.

352. The sea horizon forms approximately 142 degrees of the 360-degree view.



353. Inland, to the east, the land rises gently to a near skyline, across pastoral fields enclosed by hedgerows, lending focus to the sea views and views along the coastline. To the south, the rolling plateau landform rises to a minor ridgeline where the large, prominent features at the GCHQ facility north of Bude are visible on the skyline. In the distance, to the south and south-west, looking across Bude Bay, is the long rolling coastline of North Cornwall, characterised by sheer cliffs and indented bays and backed by a largely agricultural landscape across coastal-facing slopes. Distant onshore windfarms, masts and pylons occasionally pierce the distant skyline. In views along the coastline to the west and north, the high plateau landform ends abruptly at the top of the high cliffs, limiting views of the shoreline below. The rolling landform to the north is interrupted by the incised combe landform of 'Tidna Shute.'
354. On the sea horizon, Lundy Island is seen to the north-west, in the offshore waters beyond Hartland Point and Hartland Lighthouse. At this range, it is possible to distinguish some of the more prominent features on the island including its sheer cliffs, the Lundy South Lighthouse, and the now-redundant 'Old Light' Lighthouse set within the Island's flat-topped plateau.

#### 19.7.4.1.2 Value

355. The viewpoint is located at the top of the high, sheer sea cliffs to the west of Morwenstow. It is not an OS marked viewpoint, nor is it a specific viewpoint with facilities for visitors. The viewpoint is located on an elevated section of the SWCP within North Cornwall. The viewpoint is within the CAONB and Hartland (Cornwall) Heritage Coast (**Figure 19.18**), which implies a higher value to the visible landscape and has high scenic qualities relating to the content and composition of the visible landscape and wider seascape setting. The wider seascape is not protected in planning policy, however the viewpoint affords the opportunity to appreciate the CAONB Special Quality of "*views along the coastline are breath-taking and extensive*" (**Table 19.17**) within Section 01: Hartland (Marsland to Menapoint Church), which are afforded planning policy protection. This is a wide-ranging and relatively simple view. The elevated position on the cliff tops affords panoramic seaward views to the west. The long sweep of the North Cornwall coast arcs around to the south-west. Lundy Island is a notable focal point in views north along the coast. The elevated, rolling landform of the coastal edge provides some enclosure to views along the coastline to the north and south, and inland to the east. At this location one can experience the "*lack of populace further emphasises its remoteness*" identified in the CAONB Special Qualities, although visible to the south is the prominent GCHQ complex to the north of Bude. The GCHQ facility is noted as a visually intrusive feature (CAONB, 2022), and owing to its elevated location on the high sea cliffs above Bude

has wide-ranging visibility from within the landscape this reduces the sense of remoteness and tranquillity at this viewpoint.

#### 19.7.4.1.3 Susceptibility

356. This viewpoint is representative of the view experienced by people using the SWCP who gain dynamic but prolonged views along the route within this section of the Cornwall coast (see **Figure 19.16** and **Figure 19.17**), as well as visitors to 'Hawker's Hut' who may visit specifically to experience the view from this place of interest. Attention and interest are on the surrounding seascape. The viewpoint affords a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea. The key susceptibility is the combination of the simple coastal landscape and the wide, open expanse of offshore waters to the west with view focal points aside from Lundy Island to the north. Viewers experience a relatively high level of visual amenity at the location, with relatively few visual detractors, although the large-scale radio-communication features at the GCHQ facility are visible on the high cliffs approximately 2.3km to the south this in itself is not sufficient to reduce the susceptibility of people at this location.

#### 19.7.4.2 Magnitude of impact: Construction and Decommissioning

357. Activity within the Windfarm Site at a minimum range of 52.9km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

358. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.4.3 Magnitude of impact: Operation and Maintenance

359. The predicted view of the Windfarm Site from Viewpoint 3: Vicarage Cliff, west of Morwenstow, on SWCP, is shown in the wireline in **Figure 19.26**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.

360. The offshore WTGs will be located at long distance, between approximately 53.5km and 61.7km from the viewpoint to its closest and most distant points. At such long distance, the offshore WTGs and OSP will be in the background on the distant seascape skyline, beyond the immediate seascape context. The offshore WTGs are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**)

indicates that on average there would only be 11.31 % visibility frequency of the WTGs.

361. During these periods of excellent visibility, the blades, hubs, and upper portions of the towers of the WTGs and OSP will be visible above the skyline. The vertical height/apparent scale of the offshore WTGs will be relatively small, the closest of which would occupy approximately 0.30 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs OSP may contrast with the horizontal emphasis of the sea skyline, but the WTGs and OSP will also be relatively small in comparison to other vertical elements in the view, in particular the visible elements of the GCHQ facility to the south. The introduction of the Windfarm Site will however introduce offshore WTGs that are not currently features of the existing view.
362. The lateral spread of the offshore WTGs will occupy approximately 11.3 ° of the horizontal field of view (HFoV), which is a narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
363. The wide open expanse of the seascape and relatively simple coastline is the key interaction. Although Lundy Island is visible to the north in clear conditions, the seascape horizon has no features likely to hold the eye for a long duration. Consequently, it is something that is scanned. The WTGs and OSP may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.
364. The offshore WTGs and OSP will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, separated from the coastal edge by a wide expanse of intervening seascape and offshore waters. The WTGs and OSP are sufficiently distant, small scale and narrow in lateral extent, and located perpendicular to the line of the coast, such that the "*breath-taking and extensive*" views along the coastline, looking north and south will be retained. The focus of attention on the "*dramatic coastal cliffs, unusual rock formations*" which are part of which makes this a unique and interesting landscape would remain. The WTGs and OSP would appear in a part of the view defined entirely by undeveloped seascape and, therefore, would add a new, albeit very distant, feature into the largely simple composition of the view.

#### 19.7.4.4 Significance of effect: Construction and Decommissioning

365. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is

assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.4.5 Significance of effect: Operation and Maintenance

366. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, For the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

#### 19.7.5 Viewpoint 4: Compass Point Storm Tower, south of Bude (on SWCP)

367. The location and baseline panorama from Viewpoint 4: Compass Point Storm Tower, south of Bude are shown in **Figure 19.27**. On balance, the sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

368. The viewpoint is located at the Compass Point Storm Tower, a grade II listed building. Historic England's citation describes the Storm Tower in the following terms:

*"Small tower said to have been built as refuge for coastguard but also ornamental. 1835, designed by George Wightwick for Sir Thomas Dyke Acland, 10th Baronet. Roughly-dressed stone brought to course with freestone quoins. Octagonal tower described by Wightwick as 'after the Temple of the Winds at Athens'. Tower stands on plinth with 3 granite steps up to entrance on east side. Entrance has entablature and pediment on freestone pilasters. Each side has slit window with stone sill, those to north-east and north-west blocked."*

369. The Storm Tower is identified as an OS marked viewpoint and is accessible from the SWCP to the south of Bude. The view itself is not protected in planning policy.

370. The sea horizon forms approximately 128 degrees of the 360-degree view.

371. The elevated position on the cliff tops affords panoramic seaward views to the west. Rising ground at Efford Beacon curtails views along the coast to the south, although the sweeping arc of the North Cornwall coast becomes visible further to the south-west, taking in the high, sheer cliffs, prominent headlands and inshore islands, incised valleys, and slithers of rolling farmland across the coastal hinterland. Onshore windfarms, masts and pylons occasionally pierce the distant inland skyline. To the north, the coastal plateau reduces to a lower cliff line which affords views towards the town of Bude, scattered settlement across its rural hinterland, and static caravan

parks. The GCHQ facility to the north of Bude is a prominent feature of the view along the coastline. Further inland, there are scattered wind turbines of varying heights, seen along the skyline of the plateau landscape.

372. On the sea horizon, Lundy Island is seen to the north-west, in the offshore waters to the west of Lower Sharpnose Point. At this range, it is possible to distinguish the Island's sheer cliffs and distinctive flat-topped plateau.

#### 19.7.5.1.1 Value

373. The Storm Tower is identified as an OS marked viewpoint and is accessible from the SWCP to the south of Bude. The seascape and parts of the landscape seen in the wider view are not designated. The elevated position on the cliff tops affords panoramic seaward views to the west. Rising ground at Efford Beacon curtails views along the coast to the south, although the sweeping arc of the North Cornwall coast becomes visible further to the south-west, taking in the high, sheer cliffs, incised valleys, and slithers of rolling farmland across the coastal hinterland. To the north, there are distant views to Lundy Island, which appears just offshore of the high cliffs visible towards Hartland. The coastal plateau reduces to a lower cliff line which affords views towards the town of Bude, scattered settlement across its rural hinterland, and static caravan parks. The GCHQ facility to the north of Bude is a prominent feature of the view along the coastline. Further inland, there are scattered wind turbines of varying heights, seen along the skyline of the plateau landscape inland.

#### 19.7.5.1.2 Susceptibility

374. This viewpoint is representative of the view experienced by people using the SWCP who gain dynamic but prolonged views along the route within this section of the Cornwall coast (see **Figure 19.16** and **Figure 19.17**), as well as visitors to the Storm Tower and OS mapped viewpoint who may visit specifically to experience the view from this place of interest. The viewpoint affords a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea. The key susceptibility is the relationship between the developed and settled coastline and the open expanse of offshore waters to the west. Visual amenity at this location is influenced by visual detractors along the coast, including the GCHQ facility on the high cliffs to the north, as well as the varied forms of coastal development at Bude, and by wind turbines further inland.

#### 19.7.5.2 Magnitude of impact: Construction and Decommissioning

375. Activity within the Windfarm Site at a minimum range of 56.5km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
376. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.5.3 Magnitude of impact: Operation and Maintenance

377. The predicted view of the Windfarm Site from Viewpoint 4: Compass Point Storm Tower, south of Bude is shown in the wireline in **Figure 19.27**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.
378. The offshore WTGs will be located at long distance, between approximately 57.1km and 66.3km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs will be in the background on the distant seascape skyline, beyond the immediate seascape context. The WTGs are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency of the WTGs.
379. During these periods of excellent visibility, the blades, hubs, and upper portion of tower sections of the WTGs will be visible above the skyline, however the OSP will be hidden by the intervening horizon. The vertical height/apparent scale of the WTGs will be very small, the closest of which would occupy approximately 0.20 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs may contrast with the horizontal emphasis of the sea skyline, but the WTGs will be relatively small in comparison to other vertical elements in the view such as the main coastal cliff landforms, built form within Bude and its hinterland, the radio communication features at the GCHQ facility approximately 6.1km to the north, and onshore wind turbines. The Windfarm Site will however introduce new offshore WTG elements that are not currently features of the existing view.
380. The lateral spread of the offshore WTGs will occupy approximately 10.1° of the horizontal field of view (HFoV), which is a narrow portion of the wider 360° view



panorama, in which the vast majority of open sea, skyline and coastline will be retained and remain unchanged.

381. The wide open expanse of the seascape acts as a foil to the complexity of the more intricate coastline to the north and variety of features of the developed coast and inland. Although Lundy Island is visible in clear conditions, the seascape horizon has no features likely to hold the eye for a long duration. Consequently, it something that is scanned and then mostly attention is drawn back to the more interesting coastline. The WTGs may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.
382. The offshore WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, separated from this location by expansive areas of intervening seascape and offshore waters. The WTGs would appear in a part of the view defined entirely by undeveloped seascape and, therefore, introduce new, small scale features into this portion of the view, which will be clearly separated from the coast by an expansive area of intervening seascape in a wider context that includes a developed coastline and prominent built form including onshore wind turbines and the GCHQ communication facility.

#### 19.7.5.4 Significance of effect: Construction and Decommissioning

383. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.5.5 Significance of effect: Operation and Maintenance

384. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, For the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.6 Viewpoint 5: Penhalt Cliff, Ordnance Survey Viewpoint

385. The location and baseline panorama from Viewpoint 5: Penhalt Cliff, Ordnance Survey Viewpoint are shown in **Figure 19.28**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.



#### 19.7.6.1.1 Baseline

386. This viewpoint is located at a parking area at Penhalt Cliff, on the North Cornwall Coast Road, on the SWCP (also NCR 3), shown on **Figure 19.28**.
387. . It is an OS marked viewpoint. This viewpoint is located at a parking area on the coast road that provides an elevated vantage from a section of the coastline containing some of the highest sea cliffs in North Cornwall.
388. The sea horizon forms approximately 121 degrees of the 360-degree view.
389. Views inland to the south are curtailed by the tall, dense hedgerows which enclose the car park and line the minor road which runs along the coastline. To the west the view includes the dramatic high cliffs that characterise this section of the Cornwall coast, looking towards the headland at Dizzard Point. A small farmstead with a single domestic-scale wind turbine, near Dizzard, is visible on the skyline of the rolling agricultural landscape just inland of the coastal edge. From the west through to the north, the view overlooks the open Atlantic and Bude Bay. Looking to the north and east, the coastline changes orientation to run broadly north south, and from this elevated vantage it is possible to gain long views towards the high sea cliffs and headlands at Lower and Higher Sharpnose Point in the northernmost parts of the Cornwall coast, which reduce in height gradually to low cliffs and sandy beaches seen near Widemouth in the closer parts of this coastline to the viewpoint. The prominent GCHQ facility to the north of Bude is seen on the inland skyline to the north, amid a predominantly agricultural landscape. Further to the south and east, the influence of settlement and coastal development, including caravan sites, becomes increasingly evident in the view, scattered across the rolling to undulating hills which surround Bude and Widemouth. Several scattered onshore wind turbines are visible across the upper hill slopes and hilltops inland of the coast, breaking the skyline.
390. On the sea horizon, Lundy Island is seen to the north-west, in the offshore waters to the west of Higher Sharpnose Point. At this range, it is possible to distinguish the Island's sheer cliffs and distinctive flat-topped plateau.

#### 19.7.6.1.2 Value

391. This viewpoint is located at a parking area on the North Cornwall Coast Road, on the SWCP (also NCR 3), shown on **Figure 19.12**. It is a recognised OS marked viewpoint.
392. The viewpoint is within the CAONB (Section 02: Pentire Point to Widemouth, **Figure 19.18**) and overlooks the Pentire Point to Widemouth Heritage Coast, which implies a higher value to the visible landscape and seascape and has high scenic qualities relating to the content and composition off the view. The view itself is not

afforded protection in planning policy, however the view it affords the opportunity to appreciate the CAONB Special Qualities of high “*dramatic contorted cliffs*” and views of “*interesting coastal features*” (**Table 19.17**), although such appreciation is not as marked as in other locations in the CAONB. The view contains a variety of foci, including the undeveloped seascape to the west and undesignated parts of the North Cornwall coastline and settled inland landscapes to the north and east.

#### 19.7.6.1.3 Susceptibility

393. This viewpoint is representative of the view experienced by people using the SWCP who gain dynamic but prolonged views along the route within this section of the Cornwall coast (see **Figure 19.16** and **Figure 19.17**), as well as visitors to the Penhalt Cliff parking area who may visit specifically to experience the view from this OS marked viewpoint. Attention and interest are on the surrounding seascape and along the varied unsettled and settled parts of coastline, and to the north to Lundy Island. The viewpoint affords a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea. The key susceptibility is the relationship between the developed and settled coastline, and the open expanse of offshore waters to the west. Visual amenity at this location is influenced by visual detractors along the coast, including the GCHQ facility on the high cliffs to the north, as well as the varied forms of coastal development at Widemouth Bay and Bude, and by wind turbines further inland.

#### 19.7.6.2 Magnitude of impact: Construction and Decommissioning

394. Activity within the Windfarm Site at a minimum range of 58.5km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
395. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.6.3 Magnitude of impact: Operation and Maintenance

396. The predicted view of the Windfarm Site from Viewpoint 5: Penhalt Cliff, OS marked viewpoint, is shown in the photomontage in **Figure 19.28**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.
397. The offshore WTGs will be located at long distance, between 59.1km and 68.9km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs and OSP will be in the background on the distant seascape

skyline, beyond the immediate seascape context. The WTGs and OSP are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency of the closest WTGs, and at this distance often less since beyond 60km there is no visibility recorded in the Met Office data.

398. During these periods of excellent visibility, the blades, hubs and upper tower sections of the WTGs and the OSP will be visible above the skyline; however, lower parts of the WTG towers will be hidden by the intervening horizon. The vertical height/apparent scale of the WTGs will be very small, the closest of which would occupy approximately 0.26 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs and OSP may contrast with the horizontal emphasis of the sea skyline, but the WTGs and OSP will be relatively small in comparison to other vertical elements in the view such as the main coastal cliff landforms, closer-range built form within Widemouth and Bude and its hinterland, the radio communication features at the GCHQ facility to the north, and onshore wind turbines.
399. The lateral spread of the offshore WTGs will occupy approximately 9.4° of the horizontal field of view (HFoV), which is a very narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
400. The wide open expanse of the seascape acts as a foil to the complexity of the more intricate coastline and variety of features of the developed coast and inland. Although Lundy Island is visible in clear conditions, the seascape horizon has no features likely to hold the eye for a long duration. Consequently, it something that is scanned and then mostly attention is drawn back to the more interesting coastline. The WTGs and OSP may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.
401. The offshore WTGs and OSP will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, separated from this location by expansive areas of intervening seascape and offshore waters. The WTGs and OSP would appear in a part of the view defined entirely by undeveloped seascape and, therefore, introduce new, small scale features into this portion of the view, although clearly separated from the coast by an expansive area of intervening seascape and within a narrow HFoV. The WTGs and OSP would be seen in a wider context that includes a developed coastline and

prominent built form including onshore wind turbines and the GCHQ communication facility.

#### 19.7.6.4 Significance of effect: Construction and Decommissioning

402. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.6.5 Significance of effect: Operation and Maintenance

403. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, for the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.7 Viewpoint 6: Lundy Island, Old Light

404. The location and baseline panorama from Viewpoint 6: Lundy Island, Old Light are shown in **Figure 19.29**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **medium-high** value and the receptors experiencing the view have a **high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.7.1.1 Baseline

405. This viewpoint is located near to the 'Old Light,' the former lighthouse on Lundy Island. It is not an OS marked viewpoint. It is located at a local high point on the island's west side that provides an open and elevated vantage looking west towards the vast expanse of the Atlantic Ocean.

406. The sea horizon forms approximately 133 degrees of the 360-degree view.

407. In excellent visibility conditions, this wide-ranging view from the western edge of Lundy Island takes in parts of the distant north Devon and Cornwall coastlines in England to the south. The high, sheer cliffs which surround the Hartland peninsula fall away abruptly from the elevated culm plateau. The GCHQ facility north of Bude, and onshore Forest Moor Windfarm, are visible on the inland skyline to the south. To the north, there are more distant views of the Wales coastline, which forms a thin band on the sea horizon. Views across the island are curtailed by the low stone walls which enclose the Old Light and settlement to the east, and which run west, enclosing the open grassland in the foreground as far as the coastal edge.

#### 19.7.7.1.2 Value

408. This viewpoint is located near to the 'Old Light,' the former lighthouse on Lundy Island. It is not an OS marked viewpoint. The seascape and parts of the landscape seen in the wider view are not designated. Lundy Island and its surrounding inshore waters fall entirely within an area defined as Heritage Coast, which implies a higher value to the visible landscape and seascape and has high scenic qualities relating to the content and composition of the view. The view itself is not afforded protection in planning policy.
409. The high cliff tops to the west of the island and uninterrupted seaward views towards the Atlantic generate a sense of exposure to the elements. While the sense of remoteness is heightened by the island location and the long duration of the journey to reach Lundy Island from the mainland.
410. The focus of this view is largely towards the vast seas of the Atlantic Ocean to the west, although as one moves along the coastline there are a variety of publicised viewing locations that concentrate on the nationally important seabird colonies and opportunities to view marine life, as well as the rugged cliff features that are a characteristic feature of the island.

#### 19.7.7.1.3 Susceptibility

411. The viewpoint is representative of the view experienced by day-trip tourists to Lundy Island, and by a smaller number of visitors who can stay on the island in limited numbers for short stays. The viewpoint is frequently visited by the small number of visitors to the island as it lies on an obvious circular route around the island, and the prominence of the Old Light is a landmark and place of interest for visitors.
412. The view west out to sea is an intrinsic part of the experience on the island itself, and this is a location that conveys the experience of tranquillity and wildness that can be found on this exposed and isolated island. The viewpoint is representative of the open views experienced at the western side of Lundy Island, where views are contained to this western edge of the elevated plateau that is exposed to the sea. The expansive offshore waters of the Atlantic Ocean extending to the west are susceptible to changes in the seascape backdrop. Viewers experience a high level of visual amenity at the location and experience qualities of remoteness, wildness, and tranquillity. However, there are some distant visual detractors in the views back towards the mainland, including onshore WTGs which are visible on the distant north Devon skyline.

#### 19.7.7.2 Magnitude of impact: Construction and Decommissioning

413. Activity within the Windfarm Site at a minimum range of 44.2km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
414. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.7.3 Magnitude of impact: Operation and Maintenance

415. The predicted view of the Windfarm Site from Viewpoint 6: Lundy Island, Old Light, is shown in the photomontage in **Figure 19.29**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.
416. The offshore WTGs will be located at long distance, between 44.6km and 48.2km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs and OSP will be in the background on the distant seascape skyline, beyond the immediate seascape context. The WTGs and OSP are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 19.27 % visibility frequency of the WTGs.
417. During these periods of excellent visibility, the blades, hubs and tower of the WTGs, and OSP, will be visible above the skyline. The vertical height/apparent scale of the WTGs will be very small, occupying approximately 0.37 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs and OSP would contrast with the horizontal emphasis of the sea skyline. The Windfarm Site will introduce new offshore WTG and OSP elements that are not currently features of the existing view.
418. The lateral spread of the offshore WTGs will occupy approximately 14.4° of the horizontal field of view (HFoV), which is a narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
419. The wide open expanse of the seascape and relatively simple coastline at this location is the key interaction. The seascape horizon has no features likely to hold the eye for a long duration until it is framed by the distant coastlines of Wales and England to the north and south, respectively. Consequently, it something that is



scanned. The WTGs and OSP may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.

420. The WTGs and OSP will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, separated from this location by expansive areas of intervening seascape and offshore waters. The WTGs and OSP would appear in a part of the view to the west defined entirely by undeveloped seascape and, therefore, introduce new, small scale features into this portion of the view, although clearly separated from the coast by an expansive area of intervening seascape. In clear conditions, the WTGs and OSP will be visible in a wider context that includes the distant influence of other large-scale man-made features seen on the north Devon mainland coast to the south, including the radio communication features at the GCHQ facility north of Bude, and onshore wind turbines.

#### 19.7.7.4 Significance of effect: Construction and Decommissioning

421. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.7.5 Significance of effect: Operation and Maintenance

422. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, for the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.8 Viewpoint 7: Rosslare to Cherbourg Ferry

423. The location of Viewpoint 7: Rosslare to Cherbourg Ferry is shown in **Figure 19.30**.

424. . The sensitivity of the viewpoint is considered to be **medium-low**, reflecting that the view has **medium-low** value and the receptors experiencing the view have a **medium-low** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.8.1.1 Baseline

425. Note: The baseline view and visualisation have been digitally created using computer software and aerial photography due to the constraints of winter photography from the ferry itself. The viewpoint has been located at a height of 10



m AOD to represent the views obtained by passengers on the ferries which are mostly available from the higher decks.

426. This viewpoint is representative of passengers on ferries departing from Rosslare and Cherbourg, travelling between France and Ireland. At the time of writing (September 2022) there are a small number of sailings between these destinations, six a week run by Stena Line, and one a week on Brittany Ferries, each taking in the region of 16 to 18 hours to complete the crossing.
427. Receptors on ferry route to/from Cherbourg are transient and pass to the west of the study area. The route indicated by Stena Line heads broadly south from Rosslare, passing through the Celtic Sea, west of the Isles of Scilly, before heading eastwards through the English Channel to Cherbourg.
428. This location on the route is not an OS marked viewpoint. The location of the viewpoint has been selected at the closest location of the ferry route as indicated on OS mapping, within 60km of the Windfarm Site where, in excellent visibility conditions, it would theoretically be possible to see the offshore WTGs. Views from the ferry routes are not afforded protection in planning policy. The view represented in **Figure 19.30**.
429. has been chosen as a 'worst case' scenario, where passengers would have direct and open visibility from the ferries, looking east towards the Windfarm Site.
430. The sea horizon would be visible across the majority of the 360-degree view.

#### 19.7.8.1.2 Value

431. This location on the route is not an OS marked viewpoint and nor does the view include any part of a designated landscape or seascape. The location of the viewpoint has been selected at the closest location of the ferry route as indicated on OS mapping, from where, in excellent visibility conditions, it would theoretically be possible to see the offshore WTGs. Views from the ferry routes are not afforded protection in planning policy. The view represented in **Figure 19.30**.
432. has been chosen as a 'worst case' scenario, where passengers would have direct and open visibility from the ferries, looking east towards the Windfarm Site.

#### 19.7.8.1.3 Susceptibility

433. The viewpoint is representative of passengers on ferries between Rosslare and Cherbourg who would gain dynamic but prolonged views along the crossing route (see **Figure 19.16** and **Figure 19.17**). Typically, passengers would have access to outside decks around the ships which would afford selected views in different directions. Otherwise, more restricted views may be possible from enclosed areas

and cabins on board. Owing to the length of the crossing, views within 60km of the Windfarm Site would be experienced for a relatively short duration, before increasing distance and / or changes in direction restrict visibility. At this point in the crossing the nearest points of land within the study area on the Wales and England mainland would be at 89.8km and 92.6km, respectively. There is little of interest within the seascape as the ferry passes through this part of the study area to encourage passengers to look at the view and during this long sailing, they are likely to be indoors engaged in other activities. Therefore, the main susceptibility will be the influence of the Windfarm Site on the vast expanse of ocean that would surround the ferry, and the sense of exposure and wildness of the open seascape.

#### 19.7.8.2 Magnitude of impact: Construction and Decommissioning

434. Activity within the Windfarm Site at a minimum range of 48.2km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
435. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.8.3 Magnitude of impact: Operation and Maintenance

436. The predicted view of the Windfarm Site from Viewpoint 7: Rosslare to Cherbourg ferry, is shown in the wireline in **Figure 19.30**.
437. . The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.
438. The offshore WTGs will be located at long distance, between approximately 48.8km and 52.9km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs will be in the background on the distant seascape skyline, beyond the immediate seascape context. The WTGs are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 19.27 % visibility frequency of the WTGs.
439. During these periods of excellent visibility, the hubs, and blades of the WTGs, will be visible above the skyline, however the OSP will be hidden by the intervening horizon. The vertical height/apparent scale of the WTGs will be very small, the closest of which would occupy approximately 0.24 vertical degrees of the view, due to their long distance from this location amid the large scale of the seascape in the view. The

Windfarm Site will however introduce new offshore WTG elements that are not currently features of the existing view.

440. The lateral spread of the offshore WTGs will occupy approximately 13.1 ° of the horizontal field of view (HFoV), which is a very narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline will be retained and remain unchanged.

441. The offshore WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, separated from this location by expansive areas of intervening seascape and offshore waters. The composition of the offshore WTGs would sit comfortably with the exposure of the open seascape since it would clearly to the function of the offshore WTGs, even though it is devoid of other forms.

#### 19.7.8.4 Significance of effect: Construction and Decommissioning

442. Based on the combination of the medium-low sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.8.5 Significance of effect: Operation and Maintenance

443. Based on the combination of the medium-low sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **minor not significant** adverse, long-term, and reversible. However, for the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.9 Viewpoint 8: Tintagel

444. The location and baseline panorama from Viewpoint 8: Tintagel are shown in **Figure 19.31**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.9.1.1 Value

445. The viewpoint is located at Tintagel Castle, on Tintagel Island, just off the North Cornwall coast. Although it is not an OS marked viewpoint, it is a specific viewpoint that people visit at this popular and well-known tourist attraction, where it is possible view the historic remains of Tintagel Castle and evidence of past settlement, and to experience the association of Tintagel with the myth and legend of King Arthur. At

the west corner of the island is sculptural artwork 'Gollus,' which is a popular location for visitors to take photographs against the backdrop of the open sea. To the east, viewers look across the high cliffs of North Cornwall, and distant sweep of the Hartland coastline to the north-east. In excellent visibility conditions, Lundy Island is just visible to the north. To the west, the view takes in the arc of the North Cornwall coast as far as Pentire Head. The view itself is not afforded protection in planning policy, however it affords the opportunity to appreciate the "*dramatic coastal cliffs*" and "*interesting coastal features*" (**Table 19.17**) identified in the CAONB Special Qualities for Section 02: Pentire Point to Widemouth, which are afforded planning policy protection. The island also has a strong sense of place which is, in part, related to the exposure and drama of the cliff-top views and a relationship to the seascape. The viewpoint is within the CAONB and overlooks the Pentire Point to Widemouth Heritage Coast, which implies a higher value to the visible landscape and has high scenic qualities relating to the content and composition of the visible landscape. The focus of this view is largely towards the vast expanse of the Atlantic to the north and west, as well as the near rugged cliffs that are a feature of the island and nearby coastal landforms. However, further inland, views are influenced by settlement and coastal development, as well as wind turbines along the inland skyline, which are visual detractors.

#### 19.7.9.1.2 Susceptibility

446. The viewpoint is representative of the view experienced by people visiting Tintagel Castle, on Tintagel Island, who gain dynamic views along the cliff-top walks on the island's plateau top and northern edge, whose main attention and interest are likely to be on their surroundings.
447. The viewpoint affords a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea, however it is a wide, large-scale, and simple view out to sea, where complexity is avoided. To the east and west, the focus is along the cliff faces and headlands, which form notable features of interest in the views along the coastline. Viewers experience a high level of visual amenity at the location whilst looking out to sea and along the coastlines to the east and west.

#### 19.7.9.2 Magnitude of impact: Construction and Decommissioning

448. Activity within the Windfarm Site at a minimum range of 55.6km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

449. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.9.3 Magnitude of impact: Operation and Maintenance

450. The predicted view of the Windfarm Site from Viewpoint 8: Tintagel is shown in the photomontage in **Figure 19.31**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.

451. The offshore WTGs will be located at long distance, between 56.2km and 67.5km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs and OSP will be in the background on the distant seascape skyline, beyond the immediate seascape context and beyond the horizon. The WTGs and OSP are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency of the WTGs.

452. During these periods of excellent visibility, the blades, hubs, and upper tower sections of the WTGs, and OSP, will be visible above the skyline; however, the lower parts of the WTG towers will be hidden by the intervening horizon. The vertical height/apparent scale of the WTGs will be relatively small, the closest of which would occupy approximately 0.26 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs and OSP may contrast with the horizontal emphasis of the sea skyline, but the WTGs and OSP will be relatively small in comparison to other vertical elements in the view such as the main coastal cliff landforms and built form along the coastal hinterland. The Windfarm Site will, however, introduce new offshore WTG and OSP elements that are not currently features of the existing view.

453. The lateral spread of the WTGs will occupy approximately 7.9° of the horizontal field of view (HFoV), which is a very narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

454. The wide open expanse of the seascape acts as a foil to the complexity of the more intricate coastline and variety of features of the developed coast at Tintagel and seen inland. Although Lundy Island is visible in clear conditions, the seascape horizon has no features likely to hold the eye for a long duration. Consequently, it

something that is scanned and then mostly attention is drawn back to the more interesting coastline. The WTGs and OSP may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.

455. The offshore WTGs and OSP within the Windfarm Site will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from Tintagel Island, separated by expansive areas of intervening seascape and offshore waters. The offshore WTGs are sufficiently distant, small scale and narrow in lateral extent, that the panoramic views to the sea will be retained and the large majority of seascape remaining unchanged. The features that contribute to the *"dramatic coastal cliffs"* and *"interesting coastal features"* and spectacle of the coastline, will not be changed as a result of views of the Windfarm Site, which will be clearly separated, in a different portion of the view seen perpendicular to the coast.

#### 19.7.9.4 Significance of effect: Construction and Decommissioning

456. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.9.5 Significance of effect: Operation and Maintenance

457. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, for the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.10 Viewpoint 9: Pentire Head (on SWCP)

458. The location and baseline panorama from Viewpoint 9: Pentire Head are shown in **Figure 19.32**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.10.1.1 Baseline

459. The viewpoint is located at Pentire Point, a promontory at the top of the high, sea cliffs to the north-west of the Pentire Headland, which stands at the mouth of the Camel Estuary.



460. To the south is Padstow Bay which leads to the Camel Estuary. The settlements of Polzeath and Trebetherick are visible on the near seaward-facing slopes of the low hills to the east of the bay, with farmland and rough open grassland opposite on the western side of the bay. Parts of Padstow are visible within most distant parts of the settled estuary landscape. In the background of the view to the south, the view is defined by a landscape of gently undulating farmed landscape characterised by a patchwork of field parcels. The inland skyline is formed by a series of low, rolling open hills, punctuated by clusters of wind turbines.
461. To the west, Stepper Point stands on the opposite side of the estuary mouth, beyond which the coastline curves round to the distinctive, low, and slender headland of Trevoze Head. Settlement at Harlyn, an extensive caravan park, and scattered properties along the headland are visible in this part of the view, with the Trevoze Head lighthouse a prominent landmark at the end of the headland.
462. To the east, the foreground landform at Pentire Head obscures visibility to parts of the North Cornwall coastline. However, the top of Tintagel Island and the dramatic high cliffs further east are visible just above the intervening topography. In the distant background, the long sweep of the coastline from Bude to Hartland Quay forms a narrow band on the sea horizon. Prominent built form, including the GCHQ facility north of Bude, and onshore wind turbines, are visible along the distant skyline to the east.

#### 19.7.10.1.2 Value

463. This is not an OS marked viewpoint, although the National Trust lists this location as a viewpoint in its online mapping<sup>5</sup>. The Pentire Headland is a popular visitor location, with tourist facilities available at Pentireglaze. The viewpoint is located on an elevated section of the SWCP within North Cornwall. The viewpoint is within the CAONB (Section 02: Pentire Point to Widemouth, **Figure 19.18**) and Hartland (Cornwall) Heritage Coast, which implies a higher value to the visible landscape and has high scenic qualities relating to the content and composition of the visible seascape and landscape. The view itself is not afforded protection in planning policy, however the view affords the opportunity to appreciate the “*dramatic coastal cliffs*”, and “*interesting coastal features*” (**Table 19.17**) identified in CAONB special qualities for Pentire Point to Widemouth, and in views inland towards “*open farmland exposed*”

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<sup>5</sup> <https://www.nationaltrust.org.uk/polzeath-to-port-quin/trails/pentire-headland-walk> (accessed September 2022)



*to the strong sea winds on the coastal plateau”, which are afforded planning policy protection.*

464. The focus of this view spans across the settled estuary landscape to the south and its juxtaposition with the vast expanse of the Atlantic to the north and west, as well as the near rugged cliffs and islands and that are a feature of this landscape. Viewers experience a relatively high level of visual amenity at the location, with relatively few visual detractors, however the views inland encompass a variety of built forms, including several onshore wind farms and individual wind turbines along the skyline of distant hills to the south and east, which influence the wider panoramic view

#### 19.7.10.1.3 Susceptibility

465. This viewpoint is representative of the view experienced by people using the SWCP who gain dynamic but prolonged views along the route within this section of the Cornwall coast (see **Figure 19.16** and **Figure 19.17**), as well as visitors to Pentire Point who may visit specifically to experience the view from this location. Attention and interest are on the surrounding seascape. The viewpoint affords a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea. The key susceptibility is the relationship between wide, open expanse of offshore waters to the west and the settled landscape of the estuary to the south, and views along the near coastline. However, the influence of built forms, including several onshore wind farms and individual wind turbines along the skyline of distant hills to the south and east, are considered to moderate the susceptibility to the proposed change.

#### 19.7.10.2 Magnitude of impact: Construction and Decommissioning

466. Activity within the Windfarm Site at a minimum range of 56.6km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

467. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.10.3 Magnitude of impact: Operation and Maintenance

468. The predicted view of the Windfarm Site from Viewpoint 9: Pentire Headland, Pentire Point, is shown in the wireline in **Figure 19.32**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.

469. The offshore WTGs will be located at long distance, between 57.2km and 68.9km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs and OSP will be in the background on the distant seascape skyline, beyond the immediate seascape context and beyond the horizon. The WTGs and OSP are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency of the WTGs.
470. During these periods of excellent visibility, the blades, hubs, and upper tower sections of the WTGs, and OSP, will be visible above the skyline; however, lower tower sections will be hidden by the intervening horizon. The vertical height/apparent scale of the WTGs will be relatively small, the closest of which would occupy approximately 0.23 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs and OSP may contrast with the horizontal emphasis of the sea skyline, but the WTGs will be relatively small in comparison to other vertical elements in the view such as the main coastal landforms and built form along the coastal hinterland. The Windfarm Site will however introduce new offshore WTG and OSP elements that are not currently features of the existing view.
471. The lateral spread of the WTGs will occupy approximately 5.8° of the horizontal field of view (HFoV), which is a very narrow portion of the wider 360° view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
472. The wide open expanse of the seascape acts as a foil to the complexity of the more intricate coastline and variety of features of the developed coast to the south and west. The seascape horizon has no features likely to hold the eye for a long duration. Consequently, it something that is scanned and then mostly attention is drawn back to the more interesting coastline. The WTGs and OSP may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.
473. The offshore WTGs and OSP will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, separated from this location by expansive areas of intervening seascape and offshore waters. The WTGs and OSP are sufficiently distant, small scale and narrow in lateral extent, that the panoramic views to the sea will be retained and the large majority of seascape remaining unchanged. The features that contribute to the

*“dramatic coastal cliffs”, and “interesting coastal features”* identified in CAONB special qualities for Pentire Point to Widemouth, and in views inland towards *“open farmland exposed to the strong sea winds on the coastal plateau”* will not be changed as a result of views of the Windfarm Site, which will be clearly separated from these features in a different portion of the view, perpendicular to the coast.

#### 19.7.10.4 Significance of effect: Construction and Decommissioning

474. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.10.5 Significance of effect: Operation and Maintenance

475. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible. However, for the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

### 19.7.11 Viewpoint 10: Embury Beacon

476. The location and baseline panorama from Viewpoint 10: Embury Beacon are shown in **Figure 19.33**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.11.1.1 Baseline

477. The viewpoint is located at Embury Beacon, the earthworks of an Iron Age hillfort at the top of the high, sea cliffs to the north of Welcome Mouth. This view is taken where the SWCP crosses the ramparts to the south of the hillfort, which is also the highest point of the hillfort, affording slightly elevated and more open views along the coast to the south, and views inland. The hillfort ramparts provide some visual containment within the hillfort area, although there are still open views out to sea and along the coastline to the north.

478. The elevated position affords panoramic seaward views that include Lundy Island to the north, when looking along the line of the coast. The undulating agricultural plateau of north Devon is seen inland in this direction, characterised by a strong pattern of fields defined by hedgerows, bisected by occasional wooded valleys. The broad, open skyline to the north is punctuated by the coastguard station and radar tower at Hartland Point.

479. Inland, to the east, the view looks across a continuation of the undulating to rolling agricultural culm plateau, bisected by steep wooded valleys (combes). Scattered farmsteads punctuate the farmland, often sited on more elevated minor ridgelines and upper valley sides. The inland skyline is relatively open with little tree cover and is punctuated by onshore wind turbines and windfarms located outside of the AONB.
480. To the south, the sheer, dramatic cliffs dominate the foreground, backed by further areas of relatively unified undulating agricultural plateau, cut by incised wooded combes. Isolated farmsteads and the GCHQ radar station north of Bude are noticeable within the view in this direction.

#### 19.7.11.1.2 Value

481. This is not an OS marked viewpoint, however it is a specific viewpoint that people visit to see this heritage asset as a place of interest.
482. The view itself is not protected in planning policy, however it is located within the NDCAONB (**Figure 19.18**) and this location affords an opportunity to appreciate the Special Qualities of 'Distinctive Coastal Scenery' and a 'Landscape and Seascape of High Visual Quality' identified in the NDCAONB (**Table 19.16**), which are afforded planning policy protection. The location of the viewpoint within the NDCAONB and Hartland Heritage Coast (**Figure 19.33**), implies a higher value to the visible landscape and high scenic qualities relating to the content and composition of the visible seascape and landscape. The vast open seascape spans the view from the south, through the west and to the north, which is characteristic of views from this coast where one can appreciate the "*seemingly infinite expanse of ocean*" Special Quality of the NDCAONB.

#### 19.7.11.1.3 Susceptibility

483. This viewpoint is representative of the view experienced by people using the SWCP who make the short detour to visit this well-known promontory location, but who gain prolonged and dynamic views out to sea from the coast (see **Figure 19.16** and **Figure 19.17**). Attention and interest are on the surrounding seascape. The viewpoint allows a direct view out to sea from the coastal edge, in which viewers are more liable to be influenced by development in the sea. The key susceptibility is the combination of the simple, coastal landscape and the wide, open expanse of offshore waters to the west with few focal points aside from Lundy Island to the north. There is a contrast between the vast and simple expanse of ocean to the west, and the complexity of the headland and Lundy Island to the north. The attention of people at this location may also be focused on the nearby, coastal landforms. While there is a high level of visual amenity at this location, there are features on the skyline of the coast, including the prominent radar structures to the south and north, as well as

onshore wind energy seen inland, which influence the view and moderate the susceptibility to the proposed change.

#### 19.7.11.2 Magnitude of impact: Construction and Decommissioning

484. Activity within the Windfarm Site at a minimum range of 53.3km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
485. Visibility of WTG and OSP structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.11.3 Magnitude of impact: Operation and Maintenance

486. The predicted view of the Windfarm Site from Viewpoint 10: Embury Beacon is shown in the photomontage in **Figure 19.33**. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm Site is assessed as **low**, for the reasons set out below.
487. The offshore WTGs will be located at long distance, between approximately 53.9km and 61.4km offshore from the viewpoint to its closest and most distant points. At such long distance, the WTGs and OSP will be in the background on the distant seascape skyline, beyond the immediate seascape context. The WTGs and OSP are likely to be intermittently and infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions. Met Office visibility data (on **Table 19.22** and **Plate 19.2**, also shown on **Figure 19.20**) indicates that on average there would only be 11.31 % visibility frequency of the WTGs.
488. During these periods of excellent visibility, the blades, hubs, and upper tower sections of the WTGs, and OSP, will be visible above the skyline. The vertical height/apparent scale of the offshore WTGs will be relatively small, the closest of which would occupy approximately 0.31 vertical degrees of the view, due to their long distance offshore and the large scale of the seascape in the view. The vertical appearance of the WTGs and OSP may contrast with the horizontal emphasis of the sea skyline, but the WTGs and OSP will be relatively small in comparison to other vertical elements in the view such as the main coastal cliff landforms, the Hartland Lighthouse, and the mass of Lundy Island. The Windfarm Site will however introduce new offshore WTG elements that are not currently features of the existing view.
489. The lateral spread of the offshore WTGs and OSP will occupy approximately 11.5° of the horizontal field of view (HFoV), which is a narrow portion of the wider 360°

view panorama, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

490. The wide open expanse of the seascape and relatively simple coastline is the key interaction. Although Lundy Island is visible to the north in clear conditions, the seascape horizon has no features likely to hold the eye for a long duration. Consequently, it something that is scanned. The WTGs and OSP may, in some conditions, mean people are drawn to look out to sea for longer durations if they notice it is there.
491. The offshore WTGs and OSP will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from Hartland Point by expansive areas of intervening seascape and offshore waters. The WTGs and OSP are sufficiently distant, small scale and narrow in lateral extent, that the panoramic views to the sea, along the coastline and wide and empty views to Lundy Island in the north will be retained. In this sense, the special quality of the *"seemingly infinite expanse of ocean"* would experience limited change.
492. The WTGs and OSP are sufficiently distant, small scale and narrow in lateral extent, and located perpendicular to the line of the coast, such that the *"breath-taking and extensive"* views along the coastline, looking north and south will be retained. The focus of attention on the *"dramatic coastal cliffs, unusual rock formations"* which are part of which makes this a unique and interesting landscape would remain. The WTGs and OSP would appear in a part of the view defined entirely by undeveloped seascape and, therefore, would add a new, albeit very distant, feature into the largely simple composition of the view. However, their context has other forms of development, including the

#### 19.7.11.4 Significance of effect: Construction and Decommissioning

493. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.11.5 Significance of effect: Operation and Maintenance

494. Based on the combination of the high sensitivity of the viewpoint and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.



However, for the large majority of the time weather conditions and visual acuity at this range will mean the WTGs would not be visible or would not be noticed.

## 19.7.12 SWCP: Section 1: North Devon – Clovelly to Hartland Quay

### 19.7.12.1 Baseline and Sensitivity to Change

495. The sensitivity of this section of the SWCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.12.1.1 Value

496. This 16.6km (total) section follows the coastline of north Devon, shown in **Figure 19.12** and **Figure 19.16**. Approximately 13km of which lies within the study area. The route enters the study area west of Clovelly, near Mouth Mill, where it follows the top of the rolling, wooded coastline, into the open pastoral grazing land and cliff tops towards Hartland Point. The route then takes a north-south alignment along the high cliffs that are open to the Atlantic to the west. The route undulates along this rolling coastline towards Hartland Quay, though infrequently losing sufficient elevation to reach the shoreline. There are open elevated views along the length of the coastline as far as Cornwall to the south, interspersed with some short, secluded sections as the SWCP passes through the intimate wooded coombes that extend westwards from the Culm plateau to the ocean. This is a relatively remote section of the route. A variety of dramatic landforms provide the near focus of views, along the shoreline and coastal edge. In clear conditions Lundy Island may be seen to the north-west. The expanse of the Atlantic Ocean and long views along the coastline are ever-present in wide-ranging views to the north and south, and west.

497. This section of the SWCP passes through the NDCAONB and the Hartland Heritage Coast (**Figure 19.11**). The views gained from this section of the SWCP affords opportunities to appreciate the NDCAONB Special Qualities of *'Distinctive Coastal Scenery* and *'A Landscape and Seascape of High Visual Quality,*' described in **Table 19.16**.

#### 19.7.12.1.2 Susceptibility

498. The susceptibility to the proposed change is **medium-high**. People using Long Distance Routes (LDR) tend to do so with the purpose of both exercise and appreciation of the views / environment through which they pass. They are transient, so do not tend to have the same view for long periods but tend to be slow moving. Although the path closely follows the coastline, the directions are continuously



altering. Nonetheless, views out to sea are ever-present, experienced over prolonged durations. Views out to sea are simple and expansive, with few features aside from Lundy Island to the north-west and the transient movement of shipping and watercraft. Susceptibility is moderated by the separating distance from the Windfarm Site, and the appearance of isolated, prominent built form inland, including the GCHQ radar station north of Bude, and radar tower near Hartland, from some elevated and open locations, which would be gained intermittently in views south from this section of the SWCP and would moderate the susceptibility to the proposed change. Generally, however, this section of the route has a strong sense of remoteness and relative wildness.

#### 19.7.12.2 Magnitude of impact: Construction and Decommissioning

499. Activity within the Windfarm Site at a minimum range of 52.9km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
500. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.12.3 Magnitude of impact: Operation and Maintenance

501. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines across limited parts of the route. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, although low scrub and gorse are likely to provide incidental screening in isolated locations.
502. There is one viewpoint on this section of the SWCP. Viewpoint 2 (**Figure 19.25**) is located at Hartland Point, to the north of this section, and represents some of the closest sections of the SWCP to the Windfarm Site, and views gained from the high, exposed cliff tops.
503. Views out to sea are expansive and considering the small horizontal extent that the offshore WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially. Long range views toward the focal point of Lundy Island would not be impacted.
504. The magnitude of impact during construction and decommissioning, and during operation and maintenance, would be **low**.

#### 19.7.12.4 Significance of effect: Construction and Decommissioning

505. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.12.5 Significance of effect: Operation and Maintenance

506. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.13 SWCP: Section 2: North Devon / Cornwall – Hartland Quay to Bude

#### 19.7.13.1 Baseline and Sensitivity to Change

507. The sensitivity of this section of the SWCP is considered to be **high**, reflecting the views from this section of the route have, on balance, **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.13.1.1 Value

508. This long, 24.5km section includes parts of the north Devon and Cornwall coast. The route follows a broadly north-south alignment, over open, rolling open cliff tops, and occasionally passing through secluded coombes, though infrequently losing enough elevation to reach the shoreline. The northern section of the SWCP is noted as being particularly remote; a quality which becomes less apparent in closer proximity to the settlement of Bude. Rock formations and exposed reefs provide interest in views along the coastline and at low tide. The high cliffs and promontories including Higher Sharpnose Point and Steeple Point provide opportunities for dramatic views across the wide and open expanse of seascape to the west. The coastal landform gradually reduces in height towards Bude, and the influence of settlement and coastal development including caravan parks and tourist activity become more apparent. The expanse of the Atlantic Ocean and long views along the coastline are ever-present in wide-ranging views to the west.

509. The majority of this section of the SWCP passes through the NDCAONB between Hartland Quay and Marsland, and the CAONB Section 01: Hartland Marsland to Menapoint Church, and the Hartland Heritage Coast (**Figure 19.11**). The views gained from this section of the SWCP affords opportunities to appreciate the NDCAONB Special Qualities of *'Distinctive Coastal Scenery* and *'A Landscape and Seascape of High Visual Quality'*, described in **Table 19.16**, and the CAONB Special

Qualities of “*breathhtaking and extensive*” views along the coastline of “*dramatic coastal cliffs and unusual rock formations*” described in **Table 19.17**. The shorter part of this section, from Menapoint Church to Bude lies beyond the boundaries of these designated landscapes.

#### 19.7.13.1.2 Susceptibility

510. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views / environment through which they pass. They are transient, so do not tend to have the same view for long periods although they are slow moving. Although the path closely follows the coastline, the directions are continuously altering. Nonetheless, views out to sea are ever-present, experienced over prolonged durations. Views out to sea are simple and expansive, with few features aside from Lundy Island to the north and the transient movement of shipping and watercraft out to sea. Susceptibility is moderated by the substantial separating distance from the Windfarm Site, and the influence of prominent built form inland, including the GCHQ radar station north of Bude, and by settlement and coastal development around Bude itself, gained in views south from this section of the route.

#### 19.7.13.2 Magnitude of impact: Construction and Decommissioning

511. Activity within the Windfarm Site at a minimum range of 52.6km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
512. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.13.3 Magnitude of impact: Operation and Maintenance

513. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines would be extensive, across much of this section of the route, aside from isolated locations within the more secluded combs. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.
514. There are two viewpoints on this section of the SWCP. Viewpoint 10 (**Figure 19.33**) is located at Embury Beacon, to the north of this section, and represents some of the closest sections of the SWCP to the Windfarm Site. Viewpoint 3 (**Figure 19.26**) is located at Vicarage Cliff, west of Morwenstow, further to the south of this

section. It also represents some of the closest sections of the SWCP to the Windfarm Site, and views gained from the open, high clifftops of the North Cornwall coastline.

515. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially. Long range views toward the Lundy Island would not be impacted as it would often be seen in a different portion of the view to the Windfarm Site, which lies to the west, perpendicular to the coast.

516. The magnitude of impact during construction and decommissioning, and operation and maintenance, would be **low**.

#### 19.7.13.4 Significance of effect: Construction and Decommissioning

517. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.13.5 Significance of effect: Operation and Maintenance

518. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.14 SWCP: Section 3: North Cornwall – Bude to Crackington Haven

#### 19.7.14.1 Baseline and Sensitivity to Change

519. The sensitivity of this section of the SWCP is considered to be **high**, reflecting that the views from this section of the route have, on balance, **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.14.1.1 Value

520. This 15.8km section follows the North Cornwall coast. The route passes through the urban area of Bude, following roads and pavements, before passing over the gently sloping grassed clifftops behind Widemouth Bay, before arcing round to the steep, rolling cliff tops that extend from Widemouth Bay to Crackington Haven in the west. The northern section of the SWCP around Bude and Widemouth Bay is influenced by settlement and coastal development and is busy with tourists particularly during summer months. The high cliffs and promontories further south provide opportunities for wide views along the coastline to the north as far as

Hartland Point and out to Lundy Island, with the open expanse of the Atlantic seascape to the west.

521. The southern half of this section of the SWCP, to the south of Widemouth Bay, passes through the CAONB Section 02: Pentire Point to Widemouth, and the Pentire Point to Widemouth Heritage Coast (**Figure 19.11**). The views and experience gained from this section reflect the CAONB Special Qualities (**Table 19.17**) descriptions of "*dramatic contorted cliffs*" and "*a few sandy beaches*" with the route occasionally passing through coastal sections of the "*sheltered valleys* [which] ... *contrast to the open farmland exposed to the strong seas winds on the coastal plateau where there is limited tree growth.*" The northern section of this route, from Widemouth Bay to Bude lies beyond the CAONB and Heritage Coast landscapes.

#### 19.7.14.1.2 Susceptibility

522. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views/environment through which they pass. They are transient, so do not tend to have the same view for long periods although are generally slow moving. Although the path closely follows the coastline, the directions are continuously altering. Nonetheless, views out to sea are ever-present, experienced over prolonged durations. Views out to sea are simple and expansive. In contrast, views along the coastline to the north include settlement and coastal development around Widemouth Bay and Bude, and prominent built features including onshore wind turbines and the GCHQ Bude radar facility. Susceptibility is moderated by the substantial separation distance from the Array Area, and the influence of built form seen in views along the coast and inland along undesignated parts of the landscape.

#### 19.7.14.2 Magnitude of impact: Construction and Decommissioning

523. Activity within the Windfarm Site at a minimum range of 56.4km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

524. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.14.3 Magnitude of impact: Operation and Maintenance

525. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines would be extensive, across much of this section of the route, aside from isolated

locations within the more secluded valley landforms and when passing through parts of Bude, inland and away from the coast, where a short section of the route may experience less visibility as a result of screening by landform and buildings. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations. Visibility of the WTGs is most likely to occur when moving north along this section of the route.

526. There are two viewpoints on this section of the SWCP. Viewpoint 4 (**Figure 19.27**) is at the Compass Point Storm Tower, on the SWCP to the south of Bude. This view represents sections of the SWCP close to the settlement, and views gained from a slightly lower elevation along the route and beyond the CAONB. Viewpoint 5 (**Figure 19.28**) is located at Penhalt Cliff, a popular car park and OS marked viewpoint, south of Widemouth Bay. It represents views gained from the open, high clifftops of the CAONB coastline along this section of the route.

527. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially. Long range views toward the Lundy Island and along the coastline to the north and west would not be impacted. The influence of built form, including onshore wind turbines and the GCHO station north of Bude are considered to moderate the change for users who will see these, and a variety of built form, as they move along this section of the SWCP.

528. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.14.4 Significance of effect: Construction and Decommissioning

529. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor** not significant adverse, short term and temporary, and reversible.

#### 19.7.14.5 Significance of effect: Operation and Maintenance

530. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor** not significant adverse, long-term, and reversible.

### 19.7.15 SWCP: Section 4: North Cornwall - Crackington Haven to Tintagel



### 19.7.15.1 Baseline and Sensitivity to Change

531. The sensitivity of this section of the SWCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.7.15.1.1 Value

532. This 17.9km section follows the North Cornwall coast. This section of the SWCP includes long sections of towering, sheer cliffs, including the highest cliff in Cornwall, High Cliff (223 m AOD). Between the high cliffs, the route occasionally passes through secluded valleys, which provide the setting for small settlements including Crackington Haven and Boscastle. This section of the SWCP ends at the settlement of Tintagel. The high cliffs and headlands provide opportunities for far ranging views, including the dramatic bays and cliffs carved by the sea to the west and distant views to the Hartland Peninsula to the east, with the open expanse of the Atlantic seascape to the north and west.

533. The whole of this section of the SWCP lies within the CAONB Section 02: Pentire Point to Widemouth, and the Pentire Point to Widemouth Heritage Coast (**Figure 19.11**). The views and experience gained from this section reflect the CAONB Special Qualities descriptions (**Table 19.17**) of *"dramatic contorted cliffs"* and *"few sandy beaches, such as ...Crackington Haven"* with the route occasionally passing through coastal sections of the *"sheltered valleys [which] ... contrast to the open farmland exposed to the strong seas winds on the coastal plateau where there is limited tree growth."*

534. The value of views from this section of the SWCP is **high**.

#### 19.7.15.1.2 Susceptibility

535. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views/environment through which they pass. They are transient, so do not tend to have the same view for long periods although they tend to be slow moving. Although the path closely follows the coastline, the directions are continuously altering. Nonetheless, views out to sea are ever-present, experienced over prolonged durations. Views out to sea are simple and expansive. Dramatic landforms and coastal processes form the near focus in views along this section of the North Cornwall coast. Settlement and coastal development, including tourism, are noted as having influence on this part of the COANB in close proximity to Boscastle and Tintagel. In more distant views, noticeable built features including onshore wind turbines and the GCHQ Bude radar



facility are visible on the Hartland Peninsula to the north-east. Susceptibility is moderated by the substantial separation distance from the Windfarm Site, and the influence of distant built form seen in views along the coast.

#### 19.7.15.2 Magnitude of impact: Construction and Decommissioning

536. Activity within the Windfarm Site at a minimum range of 55.7km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
537. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.15.3 Magnitude of impact: Operation and Maintenance

538. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines would be extensive, across much of this section of the route, aside from isolated locations within the more secluded valley landforms. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.
539. There is one viewpoint located in close proximity to this section of the SWCP. Viewpoint 8 (**Figure 19.31**) is on Tintagel Island. Tintagel Island is a Historic England property and requires paid entry. It is not on the SWCP but lies in close proximity to the route as it rounds Tintagel and is a location that is representative of the open views gained from the high cliffs on this section of the route, within the CAONB (**Figure 19.11**).
540. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially. Views along the North Cornwall coastline and long range views toward the distant Hartland Peninsula coastline and Lundy Island to the north-east would not be impacted.
541. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.15.4 Significance of effect: Construction and Decommissioning

542. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.15.5 Significance of effect: Operation and Maintenance

543. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.16 SWCP: Section 5: North Cornwall - Tintagel to Port Isaac

#### 19.7.16.1 Baseline and Sensitivity to Change

544. The sensitivity of this section of the SWCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.16.1.1 Value

545. This 14.6km section follows the North Cornwall coast. This section of the SWCP continues the rolling pattern of high cliffs and incised valleys, ending at the settlement of Port Isaac, a popular visitor destination. The high cliffs and headlands provide opportunities for far ranging, open views out to sea.

546. The whole of this section of the SWCP lies within the CAONB Section 02: Pentire Point to Widemouth, and the Pentire Point to Widemouth Heritage Coast (**Figure 19.11**). The views and experience gained from this section reflect the CAONB Special Qualities descriptions (**Table 19.17**) of *"dramatic contorted cliffs"* often seaward-sloping, and *"few sandy beaches, such as Trebarwith Strand"* with the route occasionally passing through coastal sections of the *"sheltered valleys [which] ... contrast to the open farmland exposed to the strong seas winds on the coastal plateau where there is limited tree growth."*

547. The value of views from this section of the SWCP is **high**.

##### 19.7.16.1.2 Susceptibility

548. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views/environment through which they pass. They are transient, so do not tend to have the same view for long periods. Although the path closely follows the coastline, the directions are continuously altering. Views out to sea are ever-present, experienced

over prolonged durations. Views out to sea are simple and expansive. Dramatic landforms and coastal processes form the near focus in views along this section of the North Cornwall coast. The route passes through settlement at Tintagel and there influence in the wider context from onshore wind energy schemes is evident from eastern parts of this section, as described for Viewpoint 8 (**Figure 19.31**) in **Section 19.7.9**, which is considered to moderate susceptibility to the proposed change.

#### 19.7.16.2 Magnitude of impact: Construction and Decommissioning

549. Activity within the Windfarm Site at a minimum range of 55.9km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.
550. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.16.3 Magnitude of impact: Operation and Maintenance

551. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines would be extensive, across much of this section of the route, aside from isolated locations within the more secluded valley landforms. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.
552. There is one viewpoint located in close proximity to this section of the SWCP. Viewpoint 8 (**Figure 19.31**) is on Tintagel Island. Tintagel Island is a Historic England property and requires paid entry. It is not on the SWCP but lies in close proximity to the route as it rounds Tintagel and is a location that is representative of the open views gained from the high cliffs on this section of the route, within the CAONB. It also represents some of the closest sections of the SWCP to the Windfarm Site from this section of the North Cornwall coastline.
553. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially. Views along the North Cornwall coastline to the east and west would not be impacted, owing to the location of the Windfarm Site to the north-west, perpendicular to the coast.
554. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.16.4 Significance of effect: Construction and Decommissioning

555. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.16.5 Significance of effect: Operation and Maintenance

556. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.17 SWCP: Section 6: North Cornwall - Port Isaac to Padstow

#### 19.7.17.1 Baseline and Sensitivity to Change

557. The sensitivity of this section of the SWCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.17.1.1 Value

558. This 18.8km section follows the North Cornwall coast. Approximately 17km of which lies within the study area. The height of the coastal cliffs gradually reduces of this section, to approximately 70-80 m AOD at Pentire Point. The route description notes the circuitous nature of the SWCP from Port Isaac as far as Polzeath, crossing small valleys and rounding exposed headlands. It also describes the scenic quality of this section of the SWCP, in particular at the inlet of Pine Haven and 'The Rumps' promontory, from which there are "*spectacular views.*"

559. From Port Isaac to Polzeath, this section of the SWCP lies within the CAONB Section 02: Pentire Point to Widemouth, and the Pentire Point to Widemouth Heritage Coast (**Figure 19.11**). The views and experience gained from this section reflect the CAONB Special Qualities descriptions (**Table 19.17**) of "*interesting coastal features*", often seaward-sloping cliff tops, and "*few sandy beaches such as Hayle Bay*", with the route occasionally passing through coastal sections of the "*sheltered valleys* [which] ... *contrast to the open farmland exposed to the strong seas winds on the coastal plateau where there is limited tree growth.*" From Polzeath, to the end of this section in Padstow, the route lies beyond the boundaries of landscapes that are designated or defined for their scenic quality and value and in the wide-ranging views southwards, inland from Pentire Head, there is notable contrast from the influence of settlement and prominent built form including onshore wind energy development.

560. On balance, the value of views from this section of the SWCP is **high**.

#### 19.7.17.1.2 Susceptibility

561. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views / environment through which they pass. They are transient, so do not tend to have the same view for long periods. Although the path closely follows the coastline, the directions are continuously altering. Views out to sea are ever-present, experienced over prolonged durations. Views out to sea are simple and expansive. Dramatic landforms and coastal processes form the near focus in views along this section of the North Cornwall coast. The route passes through settlement at Polzeath and there is influence from built form along the settled Camel Estuary and in the wider context from onshore wind energy schemes seen inland, as described for Viewpoint 9 (**Figure 19.32**) in **Section 19.7.10**, which is considered to moderate susceptibility to the proposed change.

#### 19.7.17.2 Magnitude of impact: Construction and Decommissioning

562. Activity within the Windfarm Site at a minimum range of 56.5km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent – negligible.

563. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.17.3 Magnitude of impact: Operation and Maintenance

564. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines across much of this section of the route from Port Isaac to Pentire Point, aside from isolated locations within the more secluded valley landforms. To the south of Pentire Point the route heads inland at Padstow Bay and the Pentire Head landform would provide screening on part of the route to Padstow. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.

565. There is one viewpoint on this section of the SWCP. Viewpoint 9 (**Figure 19.32**) is at Pentire Point, on the Pentire Head headland. This location represents views gained from the SWCP on the elevated cliff tops on this section of the route, within the CAONB. It also represents some of the closest sections of the SWCP to the Windfarm Site from this section of the North Cornwall coastline.

566. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially. Views west towards Stepper Point and Trevoze Head, and southwards towards the mouth of the Camel Estuary, would be unchanged.
567. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.17.4 Significance of effect: Construction and Decommissioning

568. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.17.5 Significance of effect: Operation and Maintenance

569. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.18 SWCP: Section 7: North Cornwall – Padstow to Porthcothan

#### 19.7.18.1 Baseline and Sensitivity to Change

570. The sensitivity of this section of the SWCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.18.1.1 Value

571. This 18.8km section follows the North Cornwall coast. Approximately 17km of which lies within the study area. The route description notes that this section of the SWCP passes along low cliffs and beaches, rounding Trevoze Head, which affords "*spectacular views of the sandy bays ahead [to Porthcothan].*"
572. The entirety of this section of the SWCP lies within the CAONB Section 04: Carnewas to Stepper Point, from which users of the route would be able to appreciate the Special Qualities of this designated landscape, identified in **Table 19.17**. Trevoze Head and its inshore waters lie within the defined Trevoze Head Heritage Coast (**Figure 19.11**).
573. On balance, the value of views from this section of the SWCP is **high**.

#### 19.7.18.1.2 Susceptibility

574. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views / environment through which they pass. They are transient, so do not tend to have the same view for long periods. Although the path closely follows the coastline, the directions are continuously altering. Views out to sea from this coastal route are ever-present, experienced over prolonged durations. As the route passes to the west of Padstow Bay to Constantine Bay there is influence from built form within settlement at Polzeath, and also as the route skirts Trevone and Harlyn, in the wider context there is influence from caravan parks, as well as a variety of recreational facilities and busy beaches along this popular section of coast for visitors, which is considered to moderate susceptibility to the proposed change.

#### 19.7.18.2 Magnitude of impact: Construction and Decommissioning

575. Activity within the Windfarm Site at a minimum range of 57.8km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

576. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.18.3 Magnitude of impact: Operation and Maintenance

577. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows to the south of Stepper Point, intervening landform would provide screening on part of the route from Padstow. This is also the case to the west of Trevoise Head, where the headland screens visibility as the route heads southwards to Porthcothan. Between Stepper Point and Trevoise Head there would be sections of the SWCP with some prolonged visibility, fragmented where headland landforms screen theoretical visibility. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.

578. Viewpoint 9 (**Figure 19.32**) is at Pentire Point, on the Pentire Head headland. This location is not located on this section of the SWCP, but nonetheless represents views gained from the SWCP to the east of Padstow Bay, from an elevated cliff top location. It is considered to be representative of some of the closest sections of the SWCP to the Windfarm Site from the Padstow to Porthcothan section of the route.



579. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially.
580. The magnitude of impact during construction and decommissioning, operation, and maintenance, would be **low**.

#### 19.7.18.4 Significance of effect: Construction and Decommissioning

581. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.18.5 Significance of effect: Operation and Maintenance

582. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.19 Pembrokehire Coast Path Section 12 – Angle to Freshwater West

#### 19.7.19.1 Baseline and Sensitivity to Change

583. The sensitivity of this section of the PCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.19.1.1 Value

584. This 16.1km section extends from the settlement of Angle, south of Milford Haven, to Freshwater West. Approximately 10km of which lies within the study area. This section of the PCP enters the study area at East Block House (remains), near Rat Island. The route description notes that the experience of this section has a *"particularly wild and open feel"* including *"a series of steep hills with colourful Old Red Sandstone cliffs, streaked with yellow algae, secret coves and bays, and views."* From this section of the PCP, views around the West Angle peninsula look across the mouth of Milford Haven to the distinctive coastal headlands and islands (such as Thorn Island, Rat Island and Sheep Island) whereas to the south views become more expansive from the cliff tops and open out to the offshore waters to the south-west.
585. The entirety of this section of the PCP lies within PNCP, and its associative South Pembrokehire Heritage Coast (**Figure 19.11**), from which users of the route would

be able to appreciate the 'coastal splendour', and 'remoteness, tranquillity and wildness' identified in PCNP Special Qualities 1, 8 and 11 (**Table 19.18**), which are afforded planning policy protection.

586. The value of views from this section of the SWCP is **high**.

#### 19.7.19.1.2 Susceptibility

587. The susceptibility to the proposed change is **high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views / environment through which they pass. They are transient, so do not tend to have the same view for long periods, although they may be slow moving.

588. The path is winding, though it follows the coastal edge, with view directions continuously altering, even when the main direction of travel may be looking directly out to sea. Sea views are intrinsic to the experience of the coast path. Views out to sea to the south-west are wide and open, channelled to the south-east by the Linney Head headland. Susceptibility is moderated by the substantial separating distance between the Windfarm Site and this section of the PCNP.

#### 19.7.19.2 Magnitude of impact: Construction and Decommissioning

589. Activity within the Windfarm Site at a minimum range of 58.1km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

590. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.19.3 Magnitude of impact: Operation and Maintenance

591. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows theoretical visibility of parts of turbines would be extensive, across much of this section of the route. Actual visibility is likely to be similar to theoretical visibility due to the open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.

592. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially.

593. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.19.4 Significance of effect: Construction and Decommissioning

594. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.19.5 Significance of effect: Operation and Maintenance

595. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.20 Pembrokeshire Coast Path Section 13 – Freshwater West to Broad Haven South

#### 19.7.20.1 Baseline and Sensitivity to Change

596. The sensitivity of this section of the PCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.20.1.1 Value

597. This 16.1km section of the Pembrokeshire Coast Path passes along the Freshwater West beach/dunes, before extending inland along Castlemartin Corse and across the Castlemartin military range, returning to the coast at Stack Rocks to follow the coastal edge, before rounding Saint Govan's Head to Broad Haven South. This section of the route includes a number of dramatic landform features, including the 'Green Bridge of Wales' natural arc, and the limestone pillars Elegug Stacks ('Stack Rocks'). These features attract visitors in their own right, as well as the interest they provide as important nesting sites for a variety of seabirds. The high, sheer cliffs provide views along the coastline to these geological points of interest, as well as to the wide expanse of seascape to the south. In clear conditions, Lundy Island can be seen on the horizon to the south-east.

598. The entirety of this section of the SWCP lies within PNCP, and its associative South Pembrokeshire Heritage Coast (**Figure 19.11**).

599. The value of views from this section of the SWCP is **high**.

##### 19.7.20.1.2 Susceptibility

600. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views /

environment through which they pass. They are transient, so do not tend to have the same view for long periods, although they may be slow moving.

601. The path is winding, though it follows the coastal edge, with view directions continuously altering, even when the main direction of travel may be looking directly out to sea. Sea views are intrinsic to the experience of the coast path. Views out to sea to the south from the coastal edge are wide and open. Inland, views are more restricted by intervening vegetation and influenced by the live firing military ranges, seen at close proximity. Susceptibility is further moderated by the substantial separation distance between this section of the PCP and the Windfarm Site.

#### 19.7.20.2 Magnitude of impact: Construction and Decommissioning

602. Activity within the Windfarm Site at a minimum range of 55.3km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

603. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.20.3 Magnitude of impact: Operation and Maintenance

604. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This shows that from Freshwater West beach / dunes to Castlemartin, theoretical visibility reduces as the route heads inland. East of Castlemartin there is no theoretical visibility until the route diverts south, crossing the Castlemartin firing range where views are further restricted by intervening vegetation and influenced by the live firing military ranges at close proximity. From this point the ZTV shows extensive theoretical visibility from the PCP until the route rounds Saint Govan's Head and intervening landform screens visibility as far as Broad Haven South. Actual visibility is likely to be similar to theoretical visibility due to the largely open landcover, low scrub and gorse are likely to provide incidental screening in isolated locations.

605. Viewpoint 1 (**Figure 19.24**) is at the viewing platform near the Green Bridge of Wales. This location represents views gained from the PCP as it passes along elevated cliff top locations. It is considered to be representative of the closest sections of the PCP to the Windfarm Site, within the PCNP and South Pembrokeshire Heritage Coast.

606. Views out to sea are expansive and considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they

would not alter the open character of sea views gained from this section of the route materially.

607. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.20.4 Significance of effect: Construction and Decommissioning

608. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.20.5 Significance of effect: Operation and Maintenance

609. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.7.21 Pembrokeshire Coast Path Section 14 – Broad Haven South to Skrinkle Haven

#### 19.7.21.1 Baseline and Sensitivity to Change

610. The sensitivity of this section of the PCP is considered to be **high**, reflecting that the views from this section of the route have **high** value and the receptors experiencing the view have a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.7.21.1.1 Value

611. This 17.7km section of the route extends from Broad Have South to Skrinkle Haven. Approximately 5km of which falls within the study area, from Broad Haven to Stackpole Quay. This section includes the popular sandy beaches at Broad Haven and Barafundle. The route drops down from the steep, high cliffs to reach these secluded bays. From the cliff tops there are wide ranging views out to sea, and along the coastline. Views from beaches tend to be channelled by their enclosing headland landforms.

612. The entirety of this section of the PCP lies within the PCNP, and its associative South Pembrokeshire Heritage Coast (**Figure 19.11**).

613. The value of views from this section of the SWCP is **high**.

##### 19.7.21.1.2 Susceptibility

614. The susceptibility to the proposed change is **medium-high**. People using LDRs tend to do so with the purpose of both exercise and appreciation of the views /

environment through which they pass. They are transient, so do not tend to have the same view for long periods, although they may be slow moving.

615. The path is winding as it follows this more complex section of coastline, comprising of a number of bays and headlands, with view directions continuously altering, even when the main direction of travel may be looking directly out to sea. Sea views are intrinsic to the experience of the coast path. Views out to sea to the south-east are wide and open but those to the south-west are partially restricted by the Saint Govan's Head and Stackpole Head headland, which moderates susceptibility to the proposed change. Susceptibility is also moderated by the substantial separating distance from this part of the PCP and the Windfarm Site.

#### 19.7.21.2 Magnitude of impact: Construction and Decommissioning

616. Activity within the Windfarm Site at a minimum range of 57.4km and vessel movements intensified in the vicinity during construction / decommissioning work which is largely below sea surface or of limited extent - negligible.

617. Visibility of WTG structures as they are constructed / commissioned or dismantled, will occur over a period of less than 8 months in each instance. The magnitude of impact to the view is assessed as **low**.

#### 19.7.21.3 Magnitude of impact: Operation and Maintenance

618. **Figure 19.16** and **Figure 19.17** illustrates the blade tip and hub height ZTVs along this section of the coast. This illustrates that theoretical visibility would be gained to the north of Broad Haven to Stackpole Head. There would be no visibility of the WTGs from other stretches of the Broad Haven South to Skrinkle Haven section of the PCP as it passes through the study area.

619. Views out to sea from the high, cliff tops are open and wide-ranging. Considering the small horizontal extent that the WTGs would occupy, their small scale, and location beyond the horizon, they would not alter the open character of sea views gained from this section of the route materially.

620. The magnitude of impact during construction and decommissioning, operation and maintenance, would be **low**.

#### 19.7.21.4 Significance of effect: Construction and Decommissioning

621. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, short term and temporary, and reversible.

#### 19.7.21.5 Significance of effect: Operation and Maintenance

622. Based on the combination of the high sensitivity and low magnitude of impact, the significance of effect arising from the Windfarm Site is assessed as **moderate-minor not significant** adverse, long-term, and reversible.

### 19.8 Night-time Visual Effects

623. This section provides an assessment of the visual effects arising from the visible lighting requirements (aviation and marine navigational) of the Windfarm. The inter-related effects of aviation lighting with other environmental aspects, are assessed in **Chapter 17: Civil and Military Aviation**.

624. A description of the aviation lighting requirements during construction and decommissioning, operation and maintenance, is contained in **Chapter 17: Civil and Military Aviation** and a description of lighting required as an aid to navigation is contained in **Chapter 15: Shipping and Navigation**.

625. The assessment of night-time visual effects is based on the description of proposed WTG lighting set out in **Section 19.3.3** and the ICAO/CAA regulations and standards described above along with the embedded mitigation.

626. The worst case scenario for night-time effects of the WTG lighting has been defined as the Maximum number of WTGs WCS (**Figure 19.3**), see **Section 19.3.3** and **Table 19.6**, as this layout has the potential to introduce the largest number of aviation lights to the seascape. Whilst this scenario has the lights positioned at a lower height above sea level relative to the Maximum height WTGs scenario (**Figure 19.2**) it is considered that this difference is unlikely to materially alter the night-time effects of the aviation lights.

627. The effect of the visible lights will be dependent on a range of factors, including the intensity of lights used, the clarity of atmospheric visibility and the degree of negative/ positive vertical angle of view from the light to the receptor.

628. The approach that is applied in the assessment considers the potential effects of medium-intensity 2,000 cd lights in clear visibility. It should be noted however, that this is an unlikely worst case scenario as medium intensity lights are only likely to be operated at their maximum 2,000 cd during periods of poor visibility.

629. A further assessment of the likely residual effects is therefore made factoring in embedded mitigation, i.e., that the 2,000cd aviation lights will be dimmed to 10% of their value (200 cd) if meteorological conditions permit (when visibility is greater than 5km).



630. The visibility frequency data from the Met Office indicates that visibility is greater than 5km for over 95 % of the time. Whilst visibility out at sea is likely to be more frequently less than 5km than such land-based measurements suggest, due to generally greater levels of moisture in the air over the sea, which tends to reduce visibility compared to the air directly over land. This data indicates that the aviation lights would infrequently be displayed at 2000 candela.
631. In the particular circumstances when visibility at night out at sea is restricted to within 5km this would occur as a result of moisture levels, including fog. When this is the case the ability of the light to travel is likely to be reduced substantially so that it is not considered to be possible for the lights to be visible at 2,000 candela from the closest landmass to the Windfarm Site, i.e., approximately 43.7km at Lundy Island with other coastal areas, where dark skies are considered important, substantially more distant (over 52.3km).
632. It should be noted that the WTGs would also include infra-red lighting on the WTG hubs, which would not be visible to the human eye. Details of the lighting would be agreed with the MoD. The effects of aviation lighting with other environmental aspects, are assessed in **Chapter 17: Civil and Military Aviation**. The focus of the night-time visual assessment in this assessment is on the visible lighting requirements of the Windfarm.
633. The study area for the visual assessment of WTG lighting is shown in **Figure 19.3** and is coincident with the 60km SLVIA Study area, however, it is particularly focused on the closest area of land at Lundy Island, approximately 43.7km away.
634. The assessment of the lighting is intended to determine the likely effects on the visual amenity i.e., it is an assessment of the visual effects of aviation lighting on views experienced by people at night. The assessment of WTG lighting does not consider effects of aviation lighting on landscape or seascape character (i.e., landscape or seascape effects).
635. ICAO indicates a requirement for no lighting to be switched on until 'Night' has been reached, as measured at 50 cd/m<sup>2</sup> or darker. It does not require aviation lights to be on during 'twilight', when landscape character may be discerned. The aviation and marine navigational lights may be seen for a short time during the twilight period when some recognition of landscape features/ profiles/ shapes and patterns may be possible. It is considered however, that level of recognition does not amount to an ability to appreciate in any detail landscape character differences and subtleties, nor does it provide sufficient natural light conditions to undertake a landscape character assessment.

636. The proposed aviation lighting will not have significant effects on the perception of landscape or seascape character, which is not readily perceived at night in darkness, particularly in rural areas. The matter of visible aviation and marine navigation lighting assessment is wholly a visual concern and the assessment presented focusses on that premise. Effects on the views from Lundy Island, the coastal areas of the PCNP, NDCAONB and CAONB and the seascapes that form part of their setting within the Study area are considered in this section.

#### 19.8.1.1 Aviation Lighting Zone of Theoretical Visibility (ZTV) and Visualisations

637. Visual effects of the aviation lighting will only occur where their introduction influences the visual amenity and views experienced by people in the area. The geographic areas where these visual effects may occur is defined by the Aviation Lighting ZTV shown in **Figure 19.22**.

638. .

639. The ZTV is based on the hub mounted position of the aviation lights, at 132 m hub height, on each of the maximum number of eight WTGs. The base mapping has been darkened to give an indication of those areas that will not be impacted by theoretical visibility of the aviation lighting.

640. The ZTV has been calculated using digital terrain data, which does not account for the screening effects of vegetation or built form. It also does not indicate the decrease in visibility of WTG aviation lights that occurs with increased distance from the Windfarm Site or atmospheric visibility due to the weather conditions. The aviation lighting ZTV therefore shows a worst-case and is likely to overstate the actual visibility of the Windfarm, which may be further screened by coastal vegetation or built form and visibility of the lights reduced by prevailing atmospheric conditions.

641. The ZTV (**Figure 19.22**) shows that the WTG aviation lights will not be theoretically visible from geographic areas shown in 'dark grey' in the mapping with no ZTV colouring, where the terrain prevents views of the WTG aviation lights. Notably, these areas where the WTG aviation lights will not be visible include a large proportion of Lundy Island and inland areas of the PCNP, NDCAONB and CAONB.

642. The ZTV (**Figure 19.22**) shows that the main areas of higher theoretical visibility of the WTG aviation lights will be from the open seas within the SLVIA Study area.

643. The provision of a night-time visualisation from the viewpoint on Lundy Island (based on a darkened version of the daytime baseline view) was agreed with Stakeholders during post scoping consultation. However, this was prior to the Applicant committing to aviation lighting mitigation, which would substantially limit

the aviation lighting effects on Lundy Island and the coastal parts of the Study area. Night-time visualisations have been prepared to show both the unmitigated 2000 candela aviation lights and the mitigated 200 candela aviation lights in the view from Lundy.

## 19.8.2 Assessment of Night-time Visual Effects

644. The assessment of the effects on Lundy is based on the assessment of the night-time Viewpoint 6 Lundy Island, Old Light, which is representative of views from the western parts of the island. The night-time effects on the views from the more distant coastal areas of NDCAONB, CAONB and PCNP are also considered.

### 19.8.2.1 Viewpoint 6: Lundy Island, Old Light

645. The location and baseline panorama from Viewpoint 6: Lundy Island, Old Light are shown in **Figure 19.29**. The sensitivity of the viewpoint is considered to be **high**, reflecting that the view has **medium-high** value and the receptors experiencing the view have a **high** susceptibility to the proposed change, for the reasons set out below.

#### 19.8.2.1.1 Baseline

646. This viewpoint is located near to the 'Old Light', the former lighthouse on Lundy Island. It is not an OS marked viewpoint. It is located at a local high point on the island's west side that provides an open and elevated vantage looking west towards the vast expanse of the Atlantic Ocean.

647. The sea horizon forms approximately 133 degrees of the 360-degree view and is appreciably dark except where lit shipping and fishing vessels punctuate the darkness with point sources of light.

648. Views towards the distant coasts tend to be relatively dark but have some incidental patches of lit settlements and point sources along the low coastline.

649. Views across the island are curtailed by the low stone walls which enclose the Old Light and settlement to the east. Lighting on the island itself is limited.

#### 19.8.2.1.2 Value

650. This viewpoint is not marked on OS maps. The seascape and parts of the landscape seen in the wider view are not designated. Lundy Island and its surrounding inshore waters fall entirely within an area defined as Heritage Coast, however the scenic qualities relating to the content and composition of the view are not visible at night. The view itself is not afforded protection in planning policy.

651. The high cliff tops to the west of the island and largely uninterrupted seaward views towards the dark seas of the Atlantic generate a sense of exposure to the elements and a sense of remoteness and tranquillity, which are heightened by the island's location and the long duration of the journey to reach Lundy Island from the mainland. At night, the sense of isolation is enhanced as few people remain on the island over-night. The perception of exposure to the open seas may be increased by the notable, sweeping light-house beams, which also bring an element of human influence over the island and seascape with their sweeping 13,000 candela lights at each end of the island.
652. The focus of this view is largely towards the vast seas of the Atlantic Ocean to the west, although as one moves along the coastline there are a variety of publicised viewing locations that concentrate on the nationally important seabird colonies and opportunities to view marine life, as well as the rugged cliff features that are a characteristic feature of the island. Such areas are, however, unlikely to be visited at night.
653. The island is designated as a Dark Sky Discovery Site, where views of stars and the Milky Way are visible on clear dark night skies. The dark sky qualities of the island contribute to the intangible perception of *“mysterious maritime qualities emphasised by the bright beams of the two lighthouses sweeping across dark night skies.”*

#### 19.8.2.1.3 Susceptibility

654. The viewpoint is representative of the view that may be experienced by a small number of visitors who can stay on the island in limited numbers for short stays, including at Old Light Cottage, itself, which is a Landmark Trust property. The viewpoint is one of the locations most likely to be visited at night as the 'Old Light' landmark lies at the end of an obvious track, set back from the cliff edge, that can be easily accessed from the small settlement.
655. The view west out across the vast, dark sea is an intrinsic part of the experience on the island itself, and this is a location that conveys the experience of tranquillity and wildness that can be found on this exposed and isolated island. The darkness of the offshore waters of the Atlantic Ocean extending to the west are susceptible to changes in the seascape backdrop through the introduction of lights out at sea. The Lundy North and Lundy South Lighthouses are situated at the extreme ends of the island and although not visible from the viewpoint their sweeping lights are visible across the seascape throughout the night. In addition, there are some distant visual detractors to the experience of dark night skies from Lundy in the views back towards the mainland.

### 19.8.2.2 Magnitude of impact: Construction and Decommissioning

656. Activity within the Windfarm Site at a minimum range of 44.2km may include a small number of tall structures that require aviation lights over a relatively short duration. The lighting of vessels may also be visible although at this range such lower-level lighting is likely to be largely hidden by the curvature of the earth.
657. Up to eight floating WTGs are to be constructed elsewhere and then towed, on their floating substructures, to the Windfarm Site and then commissioned, which is programmed to take a maximum of eight months. During this relatively short duration they may have medium intensity (2000 candela) aviation lights fitted to their hubs. Decommissioning is likely to be shorter in duration. The magnitude of impact to the view is assessed as **medium-low**.

### 19.8.2.3 Magnitude of impact: Operation and Maintenance

658. The predicted operational view of the Windfarm Site from Viewpoint 6: Lundy Island, Old Light, is shown in the night-time photomontages in **Figure 19.29**.
659. As noted previously visualisations show the unmitigated aviation lighting at 2000 candela as well as the embedded mitigated aviation lighting at 200 candela.
660. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm is assessed as **medium-low** in the case of the 2000 candela aviation lighting and **low** in the case of the 200 candela lights of the mitigated aviation lighting, for the reasons set out below.
661. The offshore WTGs will be located at long distance, between 44.6km and 48.2km offshore from the viewpoint to its closest and most distant points. At such long distance, the aviation lights would be visible beyond a wide expanse of dark seas. The spacing of the WTGs also ensures that the lights are not seen as a more notable cluster that might attract attention. The frequency of visibility of the aviation lights is likely to be reduced due to climatic conditions of sea moisture and fog.
662. The aviation lights will however introduce new offshore WTG elements that are not currently features of the existing view that are in contrast with the general darkness of the baseline views over the sea and the perceived sense of remoteness and exposure this evokes.
663. The lateral spread of the aviation lights will occupy approximately 14.4° of the horizontal field of view (HFoV), which is a narrow portion of the wider 360° view panorama, in which the vast majority of the seascape will be retained and remain unchanged.

664. The dark seascape has no features likely to hold the eye for a long duration whilst views in other directions include the lighthouses with their sweeping beams and more distant coastlines with some lighting. Consequently, the seascape is currently something that is likely to be briefly scanned and the aviation lights may result in people being drawn to look out to sea for longer durations, if they notice they are there.
665. The WTG aviation lights would appear in a part of the view defined entirely by undeveloped seascape (although in the context of the sweeping lights of the lighthouses) and, therefore, introduce new, small-scale features into this portion of the view, although clearly separated from the coast by an expansive area of intervening seascape.
666. At 2000 candela the aviation lights would be notable additions to the unlit seascape resulting in a minor/moderate intrusion. They will introduce small point sources of bright light that would be seen against a darker background.
667. At 200 candela the aviation lights would be seen as extremely small point sources of substantially lower light levels, which may be missed by a casual observer but may result in a minor intrusion due to the relative darkness of the baseline views out to sea.
668. The aviation lights will not introduce obtrusive light, skyglow or light intrusion. Their concentration of light along and either side of the horizontal ensures that light is not emitted upwards into the dark night sky. The position of the lights at less than 0.5 degrees above the horizon ensures that the lights do not intrude into the parts of night sky generally looked at by people enjoying the starry night sky above.

#### 19.8.2.4 Significance of effect: Construction and Decommissioning

669. Based on the combination of the high sensitivity of the viewpoint and medium-low magnitude of impact, the significance of effect arising from the Windfarm Site lighting is assessed as **moderate not significant** adverse, short term and temporary, and reversible. Professional judgement has determined that the effect is not significant due to the short duration of the effect and the limited number of lights combined with the distance to the site and the narrow field of the dark sea view effected.

#### 19.8.2.5 Significance of effect: Operation and Maintenance

670. Based on the combination of the high sensitivity of the viewpoint and medium-low magnitude of impact associated with the medium intensity, 2000 candela lights, the significance of effect arising from the aviation lights is assessed as **moderate, not significant** adverse, long-term, and reversible. Professional judgement has

determined that the effect is not significant due to the highly unlikely incidence of the 2000 candela lights being visible at their full strength from this viewpoint when the embedded mitigation will ensure that they are only on during periods of poor visibility of less than 5km. Such poor visibility is likely to arise due to an incidence of moisture and sea fog and this will in turn restrict the frequency and strength of the light that will reach Lundy.

671. The effect of the mitigated aviation lighting at 200 candela would be moderate-minor, not significant adverse, long-term, and reversible. It is this level of light that will more normally be emitted by the aviation lights mounted on the hubs of the WTGs.

#### 19.8.2.6 Dark Sky Settings of NDCAONB, CAONB and PCNP

##### 19.8.2.6.1 Baseline

672. Details of the Special Qualities and dark sky interests that may be impacted by views of aviation lighting within the settings of these designated areas is included in **Sections 19.4, 19.12 and 19.13**.

##### 19.8.2.6.2 Sensitivity

673. The sensitivity of the dark skies, which form part of the wider settings of the NDCAONB, CAONB and PCNP, to the aviation lighting at the Windfarm Site would be **high** based on the **high** value of the designations (and their associated dark skies) from where people may experience the night-time visual effect of the lighting and the **high** susceptibility of the receptors to this.

#### 19.8.2.7 Magnitude of Impact: Construction and Decommissioning

674. Activity within the Windfarm Site at a minimum range of 52.3km may include a small number of tall structures that require aviation lights over a relatively short duration. The lighting of vessels may also be visible although at this range such lower-level lighting is likely to be largely hidden by the curvature of the earth.

675. Up to eight floating WTGs are to be constructed elsewhere and then towed, on their floating substructures, to the Windfarm Site and then commissioned, which is programmed to take a maximum of eight months. During this relatively short duration they may have medium intensity (2000 candela) aviation lights fitted to their hubs. Decommissioning is likely to be shorter in duration. The magnitude of impact to the view is assessed as low.

#### 19.8.2.8 Magnitude of Impact: – Operation and Maintenance

676. The predicted operational view of the Windfarm Site from Viewpoint 6: Lundy Island, Old Light, is shown in the night-time photomontages in **Figure 19.29**. In



comparing the likely visual impact on the settings of the CAONB, NDCAONB and PCNP with those at Lundy Island the following is relevant:

- The CAONB is located at a greater distance to the Windfarm Site at 52.3km and the horizontal field of view impacted would be less ranging between approximately 13 degrees in the north to 1-5 degrees in the south;
- The NDCAONB is located at a greater distance to the Windfarm Site at 52.7km and the horizontal field of view impacted would be less at 5-10 degrees;
- The PCNP is located at a greater distance to the Windfarm Site at 54.7km and the horizontal field of view impacted would be less at 5-10 degrees;

677. As noted previously the Lundy Island visualisations show the unmitigated aviation lighting at 2000 candela as well as the embedded mitigated aviation lighting at 200 candela. Visibility of these lights would be reduced at the greater distances detailed above.

678. The magnitude of impact to the view resulting from the operation and maintenance of the Windfarm is assessed as **medium-low (precautionary)** in the case of the 2000 candela aviation lighting and **low** reducing to **negligible** at greater distances, in the case of the 200 candela lights of the mitigated aviation lighting for the reasons set out below.

679. The offshore WTGs will be located at long distances from the CAONB, NDCAONB and PCNP. At such long distances, the aviation lights would be visible beyond a wide expanse of dark seas. The spacing of the WTGs also ensures that the lights are not seen as a more notable cluster that might attract attention. The frequency of visibility of the aviation lights is likely to be reduced due to climatic conditions of sea moisture and fog.

680. The aviation lights will however introduce new offshore WTG elements that are not currently features of the existing view that are in contrast with the general darkness of the baseline views over the sea and the perceived sense of remoteness and exposure this evokes.

681. The lateral spread of the aviation lights will occupy a narrow extent of the horizontal field of view (HFoV), which is a small proportion of the wider 360° view panorama, in which the vast majority of the seascape will be retained and remain unchanged.

682. The dark seascape has no features likely to hold the eye for a long duration whilst views in other directions include the lighthouses with their sweeping beams and more distant coastlines with some lighting. Consequently, the seascape is currently

something that is likely to be briefly scanned and the aviation lights may result in people being drawn to look out to sea for longer durations, if they notice they are there.

683. The WTG aviation lights would appear in a part of the view defined entirely by undeveloped seascape (although in the context of the sweeping lights of the light-houses on Lundy and at other locations along the coast) and, therefore, introduce new, small-scale features into this portion of the view, although clearly separated from the coast by an expansive area of intervening seascape.
684. At 2000 candela the aviation lights would be notable additions to the unlit seascape resulting in a moderate (precautionary) to minor intrusion. They will introduce small point sources of bright light that would be seen against a darker background.
685. At 200 candela the aviation lights may be seen as extremely small point sources of substantially lower light levels, which may be missed by a casual observer but may result in a minor intrusion from the closest points along the coast due to the relative darkness of the baseline views out to sea.
686. The aviation lights will not introduce obtrusive light, skyglow or light intrusion. Their concentration of light along and either side of the horizontal ensures that light is not emitted upwards into the dark night sky. The position of the lights at less than 0.5 degrees above the horizon ensures that the lights do not intrude into the parts of night sky generally looked at by people enjoying the starry night sky above.

#### 19.8.2.9 Significance of effect: Construction and Decommissioning

687. Based on the combination of the high sensitivity of the viewpoint and medium-low magnitude of impact, the significance of effect arising from the Windfarm Site lighting is assessed as **moderate, not significant** adverse, short term and temporary, and reversible. Professional judgement has determined that the effect is not significant due to the short duration of the effect and the limited number of lights combined with the distance to the site and the narrow field of the dark sea view effected.

#### 19.8.2.10 Significance of effect: Operation and Maintenance

688. Based on the combination of the high sensitivity of the viewpoint and medium-low magnitude of impact associated with the unmitigated medium intensity, 2000 candela lights, the significance of effect arising from the aviation lights is assessed as **moderate (precautionary), not significant** adverse, long-term, and reversible. Professional judgement has determined that the effect is not significant due to the highly unlikely incidence of the 2000 candela lights being visible at their full strength from these areas when the embedded mitigation will ensure that they are only on

during periods of poor visibility of less than 5km. Such poor visibility would arise due to an incidence of moisture and sea fog, and this will in turn restrict the frequency and strength of the light that will reach the coast.

689. The effect of the mitigated aviation lighting at 200 candela would be **moderate-minor** (or **minor** at more distant locations), **not significant** adverse, long-term, and reversible. It is this level of light that will more normally be emitted by the aviation lights mounted on the hubs of the WTGs.

## 19.9 Potential Seascape Effects - England

### 19.9.1 MCA 51: Bristol Channel Approaches

#### 19.9.1.1 Baseline and Sensitivity to Change

690. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 51: Bristol Channel Approaches is considered to be **medium**, reflecting that the seascape has **medium** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.9.1.1.1 Baseline

691. The MMO description of the MCA's overall character states:

*"The Bristol Channel Approaches MCA has a rich natural environment and important heritage. The deep offshore waters extend to Haig Fras, a submerged rock outcrop which locally reduces bathymetry to only 38m from 100m. This is one of several designated or proposed areas for MCZ due to their nationally and internationally important sediment habitats. Forming part of the Celtic Sea, the MCA has important historical connections with the Celtic nations of Wales and Ireland which are still apparent today with ferries, pleasure craft and submarine communication cables crossing from England to Ireland. Ship wrecks on the seafloor indicate the areas strategic positioning during periods of conflict, more recently during WWII."*

692. This MCA is a large-scale area of open water, simple, with distant empty horizons to the west which contrast with views towards Lundy Island and inland areas to the east, providing the marine backdrop to the coasts of north Devon and Cornwall. The MCA is separated from land masses by adjacent seascapes, which would contribute to the perceptual qualities of isolation and exposure.

##### 19.9.1.1.2 Value

693. No part of this MCA is covered by a landscape designation (**Figure 19.11**). It is located well beyond the immediate setting of any nationally designated landscapes and is separated from the PCNP, NDCAONB, and CAONB by intervening MCAs within

both English and Welsh waters, shown on **Figure 19.8**. The closest point of the PCNP is St. Govan's Head, while the closest points of the NDCAONB and CAONB are Hartland Point and Trevoise Head, respectively. Accordingly, its value is **medium**.

#### 19.9.1.1.3 Susceptibility

694. There would be a direct change to the characterising components of this MCA as the Windfarm Site lies within it. The offshore WTGs and offshore platform would introduce new features into this MCA. The inter-array cables and offshore export cable would be sub-sea which moderates susceptibility to the proposed change to these aspects of the Offshore Project. Susceptibility to the Windfarm is moderated by the relatively small geographic extent of the MCA that would be directly altered.
695. The MCA would be susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in panoramic sea views and experienced from open and exposed areas of seascape. This includes the distant association the MCA has as "*part of the wider marine backdrop to the English coasts, including parts of Cornwall and North Devon AONB*" and so the introduction of the Windfarm has the potential to impact this aspect of its character.
696. The visual characteristic of "*the distant empty horizons west to the open Atlantic and contrasting views back to the shore including Lundy and the Isles of Scilly*" would be liable to change arising from the introduction of the Windfarm Site in the offshore waters.
697. Lastly, the perceptual characteristic of isolation relating to "*Westerly gales and the Atlantic swell creating strong feelings of exposure. These perceptual qualities increase further offshore, increasing a sense of true isolation when sight of land ceases.*" is susceptible to the introduction of man-made structures far offshore.
698. A number of factors reduce the susceptibility of the MCA to change, including the established extensive use of the area as fishing grounds, and the seascape noted to provide recreational sailing routes connecting English harbours with Cork, Ireland and Milford Haven and Anglesey, Wales, which would animate the vast, simple seascape and provide passing foci. Although the MCA is susceptible to changes in perceived character because of the potential introduction of the Windfarm in the MCA in panoramic sea views, this is a seascape of large scale, open and exposed without a coastline, and with large-scale views, which moderates susceptibility.

#### 19.9.1.2 Magnitude of impact: Construction and Decommissioning

699. The entire Windfarm Site is located within this MCA. Activity within the Windfarm Site and vessel movements will be intensified in the vicinity during 6 months of the

construction period as the inter-array cables are installed, largely below sea surface which moderates the effect of these elements of the Offshore Project to the extent that it is the influence of construction vessels which is the key consideration. Existence and visibility of the offshore WTG and OSP structures as they are constructed on the foundations and commissioned over the 8 months construction period or dismantled over a lesser timescale. The magnitude of **medium** occurs due to direct changes within a small part of this large scale MCA, as well as visibility of the construction and decommissioning activities across the wider seascape within part of wide ranging and long views.

### 19.9.1.3 Magnitude of impact: Operation and Maintenance

700. The entire Windfarm Site is located within this MCA. The Offshore Project would introduce six tall, widely spaced, floating WTGs and a single OSP (**Figure 19.2**). These features may be considered to contrast with the characteristics of extensive areas of open water and distant empty horizons since it would introduce visible elements that would be apparent in views through their vertical form, compared to the horizontal emphasis of the undeveloped seascape and would change the seascape composition, through the addition of elements into the simple sea/sky composition and forming a new and distant focal point in views to the west and on the wider marine backdrop to the AONB coastlines in North Cornwall and Devon. With reference to the assessment of viewpoints in **Section 19.7.1**, Viewpoint 2 (**Figure 19.25**) Viewpoint 3 (**Figure 19.26**), Viewpoint 5 (**Figure 19.28**), Viewpoint 8 (**Figure 19.31**), Viewpoint 9 (**Figure 19.32**), and Viewpoint 10 (**Figure 19.33**) demonstrate that from locations on these coasts where there is the potential for distant visibility of the Windfarm, the small horizontal extent of the WTG array, and its small scale, seen beyond the horizon, would have limited influence on views of the wider seascape setting and much of the open sea horizon of the MCA would remain.

701. The Windfarm Site has the potential to influence the perceptual qualities of *"...feelings of exposure...increasing a sense of true isolation when sight of land ceases."* The introduction of floating, man-made structures into the seascape may reduce the sense of isolation that would be gained away from land; however, the WTGs readily relate to feelings of exposure, particularly to the elements, and convey this in their aesthetic and kinetic form, which may be considered to relate visually to this perceptual characteristic.

702. The introduction of the WTGs has the potential to also influence the characteristics *"Large area of open water with distant empty horizons west to the open Atlantic, contrasting to important views back to the shore including Lundy and the Isles of Scilly."* To the east of the Windfarm Site, MCA 51 gains distant influence from, and

shares a visual relationship with, Lundy Island. Consequently, this part of the seascape forms a transition to MCA 43: Lundy and Outer Bristol Channel, assessed below. Up to approximately 20km from the Windfarm Site, the scale of the WTGs and the HFoV they would occupy (**Figure 19.6**) would result in an elevated medium magnitude of impact, since they would be a readily apparent and new feature in views west to the open Atlantic. With increasing distance, the HFoV occupied by the WTGs naturally decreases, notably at around 30km where it falls to a range of 10-20°, as does their scale, to the point that from Lundy Island, as assessed in Viewpoint 6 (see **Section 19.7.7**, and **Figure 19.29**), in clear conditions, the magnitude of impact to the characteristic views west would decrease to low as experienced from the island, and within its immediate seascape setting defined by the local-level SCA 15: Lundy (**Figure 19.9**), at a range of approximately 35km or greater. Consequently, between approximately 20km and 35km, the magnitude of impact would vary from medium to low depending on proximity to the Windfarm Site. To the west of the Windfarm Site, views west to the distant empty horizons of the Atlantic would remain unchanged, and over distances in excess of 44km views back to Lundy would be limited and so would the contribution of this characteristic in defining the seascape. Nonetheless, up to approximately 20km the influence of the WTGs would result in a medium magnitude of impact for the reasons described above.

703. In summary, the magnitude of impact to the character of MCA 51 is assessed as **medium** within approximately 20km of the Windfarm Site, reducing with distance to **medium-low** in the geographic extent of this MCA to the east towards Lundy up to approximately 35km from the Windfarm Site. All remaining parts of the MCA would experience a **low** magnitude of impact.

#### 19.9.1.4 Significance of effect: Construction and Decommissioning

704. **Moderate significant** effect during construction and decommissioning within approximately 20km of the Windfarm Site, reducing with distance beyond this range to **moderate-minor not significant** in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. **Minor not significant** effects from parts of MCA beyond these ranges. Effects would be adverse, short-term, and temporary.

#### 19.9.1.5 Significance of effect: Operation and Maintenance

705. **Moderate significant** effect during operation and maintenance within approximately 20km of the Windfarm Site, reducing with distance beyond this range to **moderate-minor not significant** in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. **Minor not significant**



effects from parts of MCA beyond these ranges. Effects would be adverse, long term, reversible.

## 19.9.2 MCA 43: Lundy and Outer Bristol Channel

### 19.9.2.1 Baseline and Sensitivity to Change

706. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 43: Lundy and Outer Bristol Channel is considered to be **medium-high**, reflecting that the view has **medium-high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.9.2.1.1 Baseline

707. The MMO description of the MCA's overall character states:

*“Lundy is a flat-topped island in the Bristol Channel, located between the North Devon coast and the Gower and Pembrokeshire coasts in Wales. It forms an important focal point in views from these coasts and within the channel. Spectacular cliffs define Lundy's coastal edge, the western waters of the MCA (and coast of Lundy) exposed to strong tidal currents and Atlantic swells. The island's clear waters and varied seabed host nationally important maritime habitats which are a haven for marine wildlife including seals and colonies of seabirds; further offshore coarse sand and gravel sediments below deep waters of up to 60m support commercially important fishing grounds. The island and its surrounding waters are rich in archaeological heritage and steeped in maritime legend; a dense concentration of wrecks (now popular dive sites) testament to the rough seas and position of the area within historic trading routes. Lundy is a valued destination for visitors seeking a range of experiences and recreational activities above and below the water. It is defined by its undeveloped character, rich marine biodiversity, uninterrupted views across the open Atlantic, and strong visual and cultural connections with the surrounding seascapes.”*

708. At the Local level, the seascape is characterised by the North Devon and Exmoor (2015) Seascape Character Assessment. Within the study area, MCA 43 includes parts of SCA 15: Lundy, SCA 16: Lundy North, and SCA 27: Lundy South as shown on **Figure 19.9**.

709. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. The NDESCA (2015) also identifies the 'special qualities and key seascape sensitivities' of SCAs that would be most sensitivity to development-led change. Those of relevance to this SLVIA are described as follows:

SCA 15: Lundy:



- *“Truly unique, with unrivalled levels of peace, tranquillity, and dark night skies – a breathtaking sanctuary.*
- *Long, panoramic and uninterrupted views across Bideford Bay to the North Devon coast, and northwards to South Wales – also experienced by visitors during their exhilarating journey from the mainland.*
- *A ‘jewel in the view’ and focal point in the wider seascape; key to the maritime settings of the North Devon AONB, Exmoor National Park, Gower AONB and Pembrokeshire Coast National Park.”*

#### SCA 16: Lundy North

- *“A large unbroken expanse of sea, open to the Atlantic Ocean.*
- *A wild, remote seascape at the mercy of the elements; perceptual character strongly influenced by weather and atmospheric conditions.*
- *The open seascape setting provided to Lundy in views from North Devon and South Wales, allowing the island’s distinctive profile to be perceived.*
- *Part of the wider seascape setting of North Devon AONB, Exmoor National Park, Gower AONB and Pembrokeshire Coast National Park.”*

#### SCA 27: Lundy South

- *“Open water with a simple, consistent and unified marine character – a gateway into the enclosed seascapes of Bideford Bay and the Bristol Channel.*
- *Tranquillity on calm days quickly replaced by wild and forbidding conditions as gales and storms sweep in from the west.*
- *Strong intervisibility with the North Devon AONB (including Hartland Point with its lighthouse) and Lundy; with far-reaching and uninterrupted views to Pembrokeshire Coast National Park.”*

#### 19.9.2.1.2 Value

710. Lundy Island and its immediate surrounding waters lie within an area defined as Heritage Coast, which implies elevated value for its undeveloped coast. This MCA is located far beyond the immediate setting of any nationally designated landscapes (**Figure 19.11**) and is separated from the PCNP, NDCAONB, and CAONB by intervening MCAs within both English and Welsh waters, shown on **Figure 19.8**. Overall, its value is **medium-high**.

### 19.9.2.1.3 Susceptibility

711. The MCA would only be susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in panoramic sea views experienced from open and exposed areas of seascape as the Windfarm is located well beyond its boundary. This MCA provides the marine backdrop and wider seascape setting to the AONB coasts of north Devon and Cornwall in England, and PCNP Pembrokeshire in Wales, and therefore has an association with these designated landscapes.
712. A visual characteristic of this MCA is the *"uninterrupted views across the open Atlantic."* Therefore, the introduction of the Windfarm in the offshore setting of the MCA has the potential to impact these aesthetic aspects of its character.
713. Lundy Island is an important focal point and seascape feature in surrounding views from these coasts as well as from even more distant coastlines within Pembrokeshire and Gower. During clear conditions, in long views back from Lundy Island, one can appreciate the developed coast and hinterland around the Taw / Torridge estuary and north Devon coast, taking in prominent landmarks including the lighthouse at Hartland Point, landscape features including the Hartland Peninsula, as well as largescale development including onshore windfarms and the radar facilities at the GCHQ complex north of Bude. In exceptional conditions, there are views to the Pembrokeshire coasts. The influence of views of built forms on the distant mainland coast, including onshore windfarms, moderates the susceptibility to the proposed change arising from the Windfarm which would also occur as part of the wider context.
714. The MCA is separated from land masses by adjacent seascapes, which would contribute to the perceptual characteristics of tranquillity, isolation, and exposure to the elements. The qualities of *"Truly unique, with unrivalled levels of peace, tranquillity and dark night skies – a breathtaking sanctuary."* would be liable to change arising from the introducing of the Windfarm in the offshore waters. Dark sky qualities of the seascape are susceptible to the change arising from visible aviation lighting. The potential effect of the Offshore Project on dark skies is considered in **Section 19.8.**
715. The qualities of *"A wild, remote seascape at the mercy of the elements; perceptual character strongly influenced by weather and atmospheric conditions"* and *"Tranquillity on calm days quickly replaced by wild and forbidding conditions as gales and storms sweep in from the west"* relate principally to the exposure of the island location and changeable weather conditions experienced in the outer Bristol Channel.

The appearance of man-made structures in views of the open horizon to the west would not impact these perceptual qualities.

#### 19.9.2.2 Magnitude of impact: Construction and Decommissioning

716. No part of the Windfarm Site will be located within this MCA. Existence and visibility of the WTG and OSP structures over the 8 months and one year, respectively, during the construction period, or dismantled over a lesser timescale, as they are constructed on the foundations and commissioned results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of visibility of the Windfarm Site at distance, over a minimum range of 20.2km, in offshore waters to the west.

#### 19.9.2.3 Magnitude of impact: Operation and Maintenance

717. The Windfarm Site would introduce six tall, widely spaced, floating WTGs and an OSP into distant offshore waters to the west of this MCA, within part of the wider seascape setting. The operation and maintenance of these features may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from the north, west, and south of Lundy Island. The ZTV shows that there will be limited or no visibility of the WTGs from parts of the seascape to the east of Lundy Island, which is screened to varying degrees by the intervening island landform. The offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**) within views, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

718. The introduction of the offshore WTGs would appear within the wider undeveloped marine setting to the Cornwall and north Devon AONBs, and PCNP coasts. Lundy Island would remain the more prominent seascape feature within these views, owing to its closer location to these coastlines, and its solid mass, as shown in the assessment of viewpoints in **Section 19.7.1**, and shown in Viewpoint 1 (**Figure 19.24**), Viewpoint 2 (**Figure 19.25**) Viewpoint 3 (**Figure 19.26**), Viewpoint 5 (**Figure 19.28**), Viewpoint 8 (**Figure 19.31**), Viewpoint 9 (**Figure 19.32**), and Viewpoint 10 (**Figure 19.33**). The viewpoints demonstrate that from locations on these coasts where there is the potential for distant visibility of the Windfarm Site, the small horizontal extent of the array, and its small scale, seen beyond the horizon, would have limited influence on views of the wider seascape setting and much of the open sea horizon of the MCA would remain.

719. The Windfarm would contrast with the characteristics of wide, open views of the empty Atlantic Ocean gained to the west of the MCA since it would introduce visible elements that would be apparent in views through their vertical form, and contrast to the horizontal emphasis of the undeveloped seascape. The offshore WTGs would change the seascape composition, through the addition of elements into the simple sea/sky composition and forming a distant focal point in views to the west, as shown in Viewpoint 6 (**Figure 19.29**). In the closest parts of MCA 43 to the Windfarm Site, at approximately 20.2km, the scale of the WTGs and the HFoV they would occupy (**Figure 19.6**) would result in an elevated medium magnitude of impact, since they would be a readily apparent and a new feature in views west to the open Atlantic. With increasing distance, the HFoV occupied by the WTGs naturally decreases, notably at around 30km where it falls to a range of 10-20°, as does their scale, to the point that from Lundy Island, as assessed in Viewpoint 6 (see **Section 19.7.7**, and **Figure 19.29**), in clear conditions, the magnitude of impact to the characteristic views west would decrease to low as experienced from the island, and within its immediate seascape setting defined by the local-level SCA 15: Lundy (**Figure 19.9**), at a range of approximately 35km or greater. Consequently, between approximately 20km and 35km, within the westernmost parts of the MCA, the magnitude of impact would vary from medium to low depending on proximity to the Windfarm Site. The magnitude across the MCA of change is also moderated by the distant influence of other man-made elements seen in clear conditions, including onshore WTGs and large-scale built form on the mainland coast of north Devon and Cornwall to the south-east and south. Simply seeing the WTGs on the sea horizon outside the MCA would not be sufficient to negate opportunities to experience these perceptual characteristics which would continue to prevail across the seascape of the MCA and moderate the influence of the offshore WTGs, which would be viewed in the context of wide, open seas to the west.

720. On balance, the magnitude of impact to the character of MCA 43 is assessed as **medium** at the closest point of this MCA to the Windfarm Site, reducing with distance, to **low** at approximately 35km from the Windfarm Site.

#### 19.9.2.4 Significance of effect: Construction and Decommissioning

721. **Moderate significant** effect during construction and decommissioning at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range, to **moderate-minor not significant** in parts of the seascape to the east towards Lundy at approximately 35km from the Windfarm Site. Effects would be adverse, short-term, and temporary.

#### 19.9.2.5 Significance of effect: Operation and Maintenance

722. **Moderate significant** effect during construction and decommissioning at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range, to **moderate-minor not significant** in parts of the seascape to the east towards Lundy at approximately 35km from the Windfarm Site. Effects would be adverse, long term, reversible.

### 19.9.3 MCA 42: Bideford Bay and Taw-Torridge Estuary

#### 19.9.3.1 Baseline and Sensitivity to Change

723. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 42: Bideford Bay and Taw-Torridge Estuary is considered to be **medium-high**, reflecting that the seascape has **high** value and a **medium** susceptibility to the proposed change, for the reasons set out below.

##### 19.9.3.1.1 Baseline

724. The MMO description of the MCA's overall character states:

*"The sweeping north-west orientated Bideford Bay is characterised by a predominantly sandy seabed supporting rich commercial fisheries and attracting seabirds and cetaceans. Areas of biogenetic reef, sandy shores and rock pools form valued habitats, recognised within the Bideford to Foreland Point MCZ. Draining into the bay, the large combined Taw-Torridge Estuary is fringed by nationally important wetlands, supporting a range of bird and fish species, whilst the prominent internationally designated dunes at Braunton Burrows fringe the estuary mouth. Ship wrecks on the sea floor are testament to a long history of maritime trade and transport, including the timber trade between Newfoundland and Bideford (a working historic port on the banks of the estuary). The sheltered waters provide opportunities for a range of recreational activities, along with the popular sandy beaches at Woolacombe, Croyde, Saunton and Westward Ho!. The open bay is defined by its panoramic, uninterrupted views out to sea - featuring Lundy and distant glimpses of the Welsh coast. Seascape character is strongly influenced by visual and cultural links to the coastline surrounding the bay, with its complex and varied forms and coastal landmarks, including the prominent Hartland Point lighthouse."*

725. At the local level, the seascape is described by the North Devon and Exmoor (2015) Seascape Character Assessment. Within the study area, MCA 43 includes parts of SCA 14: Outer Bideford Bay, SCA22: Clovelly Coast, SCA 23: Inner Bideford Bay, and SCA 24: Hartland North Coast as shown on **Figure 19.9**.
726. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. Although, in respect of SCA 23 the key characteristics note high levels of

tranquillity, remoteness and dark night skies and the distinctive profile of Lundy Island appreciated against its open Atlantic backdrop. The 'special qualities and key seascape sensitivities' of SCAs identified in the NDESCA (2015) as having the most sensitivity to development-led change are described as follows:

SCA 14: Outer Bideford Bay:

- *"Middle of nowhere, middle of everywhere' – forming an open marine setting and key element of views from west Exmoor to Hartland Point.*
- *A 'pathway to Lundy'; westerly views defined by the island with its open Atlantic backdrop.*
- *Far-reaching views across the full sweep of the Bideford Bay AONB coast, and north to the Gower and Pembrokeshire coasts. Renowned for its sunsets."*

SCA 23: Inner Bideford Bay

- *"Open expanse of sea forming a naturalistic maritime setting to the surrounding coast.*
- *Panoramic views across the full sweep of the Bideford Bay AONB coast; colours, textures and movements defining the seascape setting. Uninterrupted distant views to Gower and Pembrokeshire.*
- *Spectacular sunsets; the sun setting behind Lundy, emphasising its distinctive profile which characterises views across the bay."*

SCA 24: Hartland North Coast

- *"Torrige's 'hidden coast', the rugged cliffs with their twisting and folded strata mostly only visible from the sea.*
- *Ancient Iron Age promontory fort at Windbury Head, evidence for medieval farming and WWII associations, and the landmark 'golf ball' radar dome.*
- *Coastal walks affording breathtaking views from headlands across the full sweep of Bideford Bay and north to the 'elevated' end-on form of Lundy.*
- *Seascape itself frames many iconic views from the full stretch of the Bideford Bay coast, from vessels crossing through the bay, and from Lundy.*
- *Remote, windswept and quiet – but more trees and shelter contrasting with the wild coast and seas around Hartland Point"*

19.9.3.1.2 Value

727. MCA 42 forms part of the wider marine setting to the coastal landscape of the NDCAONB and part of the associated Hartland Heritage Coast (**Figure 19.11**). These



landscape designations and associated defined areas of undeveloped coast indicate a high value attached to the MCA which form the seascape setting to this designated coastal landscape.

#### 19.9.3.1.3 Susceptibility

728. The MCA would be susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in panoramic sea views experienced from open and exposed areas of seascape.
729. There are contrasts between the larger scale more open, exposed seascape of Outer Bideford Bay (SCA 14), and the Atlantic Ocean to the west of Lundy Island and Hartland Point, compared to smaller scale, more sheltered seascape further into Bideford Bay and towards the Taw-Torridge Estuary. The Inner Bay seascape has more limited exposure to the potential changes arising from the Windfarm Site, whereas locations towards the Outer Bay, closer to Hartland Point, are more exposed to the Atlantic Ocean and wider seascape to the west, which would be more susceptible to change.
730. A key component of this MCA is the visual relationship between the seascape, and the broad arc of the Bideford Bay coastline and Lundy Island. The MCA would be susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the WTGs and OSP in westerly views experienced from parts of the coast and from open and exposed areas of seascape. This includes the qualities of Lundy Island as the sole focal point in views west from the MCA, and the role of the wider, open seascape to the west as setting to the Island. And so, the introduction of the Windfarm in the setting of the MCA has the potential to impact this aspect of its character. However, settled parts of the coastline around Bideford Bay include prominent landmarks such as the Hartland light house and Hartland radar dome, and large-scale structures including onshore wind energy development inland of the NDCAONB, influence the setting of this MCA and provide varied foci.
731. Given the considerable separating distance to the Windfarm Site, of approximately 51.8km and intervening seascapes of MCA 43 and MCA 44 to the west. The qualities of the complex and varied forms and coastal landmarks "*Torridge's 'hidden coast,' the rugged cliffs with their twisting and folded strata mostly only visible from the sea*" would be unchanged as the Windfarm would lie far offshore and to the west, in the opposite direction to views towards the coastal landforms. Similarly, in respect of the prominence of coastal landmarks "*Ancient Iron Age promontory fort at Windbury Head, evidence for medieval farming and WWII associations, and the landmark 'golf ball' radar dome*" the appearance of man-made structures in views of the open



horizon to the west would not impact the prominence of these features in views towards the mainland coast, which is in the opposite direction.

732. High levels of tranquillity noted in this seascape relate to parts of the Inner Bideford Bay (SCA 23). This perceptual quality relates to remoteness and dark night skies, contrasting with the busy nearby coastal settlements and developed seascapes around Woolacombe, Croyde and Westward Ho! Considering the near influence of the settled coastline to the east and south, the introduction of the Windfarm in the distant offshore seascape to the west would result in limited change to this characteristic. Dark sky qualities of the seascape are susceptible to the change arising from visible aviation lighting. The potential effect on dark skies is considered in **Section 19.8**.

#### 19.9.3.2 Magnitude of impact: Construction and Decommissioning

733. No part of the Windfarm Site will be located within this MCA. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, as they are constructed on the foundations and commissioned results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of the Windfarm Site at distance, over a minimum range of 51.8km, in offshore waters to the west.

#### 19.9.3.3 Magnitude of impact: Operation and Maintenance

734. The Windfarm Site would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the west of this MCA, within part of the wider seascape setting.

735. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from the north, west, and south of Lundy Island. From these geographic areas with visibility, the operation and maintenance of the Windfarm Site may result in changes to specific aesthetic/perceptual aspects of its seascape character. The ZTV shows that there will be limited or no visibility of the WTGs from parts of the seascape to the east of Lundy Island, which is screened to varying degrees by the intervening island landform. The offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**) within views, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

736. The offshore WTGs and OSP may be considered to contrast with the characteristics of wide, open views of the empty Atlantic Ocean gained to the west of the MCA since it would introduce visible elements that would be apparent in views through their vertical form, compared to the horizontal emphasis of the undeveloped seascape. The offshore WTGs would change the seascape composition, through the addition of elements into the simple sea/sky composition and forming a new, distant focal point in views to the west. More widely, the introduction of the offshore WTGs would appear within the undeveloped marine setting to Lundy Island in certain views from the northern parts of this MCA. Lundy Island would remain the more prominent seascape feature within these views, owing to its closer location to these coastlines, and its solid mass, as shown in the assessment of viewpoints from the north Devon coast in **Section 19.7.1**, Viewpoints 2 (**Figure 19.25**) and Viewpoint 10 (**Figure 19.33**). The viewpoints demonstrate that from locations on these coasts where there is the potential for distant visibility of the WTGs and OSP, the small horizontal extent of the WTG array, and its small scale, seen beyond the horizon, would have limited influence on views of the wider seascape setting and much of the open sea horizon of the MCA would remain. The predicted view from more distant coastlines to the east which lie beyond the 60km study area, at Baggy Point, is shown in **Appendix 19.B**, where the magnitude of impact would be negligible.

737. The magnitude of impact on this MCA within the study area is assessed as **low**.

#### 19.9.3.4 Significance of effect: Construction and Decommissioning

738. **Moderate-minor not significant**, effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.9.3.5 Significance of effect: Operation and Maintenance

739. **Moderate-minor not significant**, adverse, long term, reversible.

### 19.9.4 MCA 44: Hartland Point to Port Isaac Bay

#### 19.9.4.1 Baseline and Sensitivity to Change

740. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 44: Hartland Point to Port Isaac Bay is considered to be **high**, reflecting that the view has **high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.9.4.1.1 Baseline

741. The MMO description of the MCA's overall character states:

*"This is an exposed, wild and rugged seascape open to the full brunt of the Atlantic, backed by flat-topped, sheer coastal cliffs with renowned folded and faulted strata and waterfalls plunging to the sea. The cliff bases are characterised by extensive wave-cut platforms. Jagged reefs extending out from Hartland Point along with submerged pinnacles create hazards to navigation (marked by the prominent Hartland Point lighthouse). Crashing waves, swirling white water and foam characterise the sea surface, and the coastline is a surfing hotspot. The area is rich in coastal and marine wildlife (much designated as SAC or MCZ) as well as cultural associations with early human occupation, maritime trade, smuggling and shipwrecks. Views extend westwards across the Atlantic ocean and there is strong intervisibility with adjacent seascapes, including North Cornwall and to Lundy to the north-west. Associated with Arthurian legends, Tintagel Castle, situated on a dramatic rocky headland, is a key draw for visitors to the area."*

742. This MCA is a large-scale area of open water, with distant empty horizons to the west which contrasts with the dramatic coastal landform of inland areas along the coasts of north Devon and Cornwall.

743. At the local level, the seascape is described by the North Devon and Exmoor (2015) Seascape Character Assessment. Within the study area, the northernmost extent of MCA 43 includes parts of SCA 24: Hartland North Coast, SCA 25: Hartland Atlantic Coast, SCA 26: Hartland Race, and SCA 27: Lundy South as shown on **Figure 19.9**.

744. The SCA's key characteristics and qualities reflect the broad description of the MCA profile. The 'special qualities and key seascape sensitivities' of SCAs identified in the NDESCA (2015) as having the most sensitivity to development-led change is described as follows:

SCA 24: Hartland North Coast

- *"Torrige's 'hidden coast', the rugged cliffs with their twisting and folded strata mostly only visible from the sea.*
- *Ancient Iron Age promontory fort at Windbury Head, evidence for medieval farming and WWII associations, and the landmark 'golf ball' radar dome.*
- *Coastal walks affording breathtaking views from headlands across the full sweep of Bideford Bay and north to the 'elevated' end-on form of Lundy.*
- *Seascape itself frames many iconic views from the full stretch of the Bideford Bay coast, from vessels crossing through the bay, and from Lundy.*
- *Remote, windswept and quiet – but more trees and shelter contrasting with the wild coast and seas around Hartland Point."*

SCA 25: Hartland Atlantic Coast

- *"Its outstanding scenic landscape and seascape qualities.*
- *The dramatic, nationally and internationally important coastal geology and geomorphology – including dry valleys and waterfalls.*
- *Reefs, submerged pinnacles, and powerful waves emphasising a sense of wildness and being at the mercy of the elements. The iconic Hartland Point lighthouse reinforces the sense of danger.*
- *Opportunities for enjoying and experiencing a 'coastal wilderness', including walking, climbing, rock-pooling, swimming, and surfing.*
- *Views south to Cornwall, west across an empty Atlantic Ocean, and north towards the distinctive end-on profile of Lundy.*
- *A strong sense of remoteness – a largely undeveloped seascape with levels of tranquillity and dark night skies amongst the highest in Devon."*

#### SCA 26: Hartland Race

- *"Wild, remote and isolated seascape with a strong sense of danger.*
- *Feeding seabirds, diving gannets and fishing boats creating movement and activity.*
- *Dramatic views to the rugged Hartland coast with its iconic lighthouse; open Atlantic views interrupted only by the distinctive profile of Lundy.*
- *Its role as part of the wider maritime setting to the North Devon AONB & Heritage Coast and Lundy Heritage Coast."*

#### SCA 27: Lundy South

- *"Open water with a simple, consistent and unified marine character – a gateway into the enclosed seascapes of Bideford Bay and the Bristol Channel.*
- *Tranquillity on calm days quickly replaced by wild and forbidding conditions as gales and storms sweep in from the west.*
- *Strong intervisibility with the North Devon AONB (including Hartland Point with its lighthouse) and Lundy; with far-reaching and uninterrupted views to Pembrokeshire Coast National Park."*

#### 19.9.4.1.2 Value

745. MCA 44 forms part of the marine setting to the coastal landscape of the NDCAONB and CAONB Section 01: Hartland Marsland to Menapoint Church and Section 02: Pentire Point to Widemouth, which includes the Hartland (Cornwall and Devon) Heritage Coast and Pentire Point to Widemouth Heritage Coast in Cornwall (**Figure**

19.11). These coastal landscape designations indicate a high value attached to the MCA.

#### 19.9.4.1.3 Susceptibility

746. The MCA would be susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in panoramic sea views experienced from open and exposed areas of seascape and coastal locations as part of the wide context of vast open seas. Key to this, is the role the MCA forms as "*wider maritime setting to the North Devon AONB & Heritage Coast and Lundy Heritage Coast*", as experienced by people during the variety of activities that can be enjoyed on land and along the coastal edge, gained in the "*Views ... west across an empty Atlantic Ocean*", which currently have "*a simple, consistent, and unified marine character...interrupted only by this distinctive profile of Lundy...with far-reaching and uninterrupted views to Pembrokeshire Coast National Park*." Therefore, the introduction of the Windfarm in the wider setting of the MCA has the potential to impact these aesthetic aspects of its character.
747. The fundamental physical qualities of this MCA, including "*dramatic, nationally and internationally important coastal geology and geomorphology - including dry valleys and waterfalls*" "*reefs, submerged pinnacles, and powerful waves*" and "*Feeding seabirds, diving gannets ...creating movement and activity.*" are not liable to changes arising from the introduction of the Windfarm Site outside of the MCA at distance in the offshore waters.
748. This MCA lies open to the vast Atlantic Ocean to the west, which influences its perceptual qualities including its "*a sense of wildness and being at the mercy of the elements*" "*Wild, remote and isolated seascape with a strong sense of danger*", and "*Tranquillity on calm days quickly replaced by wild and forbidding conditions as gales and storms sweep in from the west.*" Parts of the MCA are remote and have relatively unspoilt character "*An exposed, wild and dramatic seascape, with levels of remoteness emphasised by an absence of development along long stretches of the coast. Bude is the only significant settlement adjoining the MCA*" the mainland coast around Bude includes the influence of settlement and coastal tourism facilities which detract from the perceived remoteness. Tranquillity and remoteness can be reduced in summer due to visitor levels, car parking and established recreational uses. Passing freight ships, heading through the Bristol Channel, viewed outside the MCA also reduce perceived remoteness. Prominent built features, including the lighthouses at Hartland Point and on Lundy Island, as well as the GCHQ radar facility on the high cliffs north of Bude, reduce a sense of wilderness and exert a man-made influence even across more remote sections of the MCA's coast.

#### 19.9.4.2 Magnitude of impact: Construction and Decommissioning

749. No part of the Windfarm Site will be located within this MCA. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of visibility of the OSP and WTGs within the Windfarm Site at distance, over a minimum range of 31.4km, in offshore waters to the west as part of wider context of vast open seas.

#### 19.9.4.3 Magnitude of impact: Operation and Maintenance

750. The Windfarm would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the west of this MCA, within part of the wider offshore seascape setting.

751. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). From these geographic areas with visibility, the operation and maintenance of the Windfarm may result in changes to specific aesthetic/perceptual aspects of its seascape character, including views, its perceived remoteness, tranquillity, and wildness.

752. The introduction of the offshore WTGs would appear within the distant offshore waters beyond this MCA. In the varied views gained from the coastline, Lundy Island would remain the more prominent seascape feature seen to the north, owing to its closer location particularly within parts of north Devon, and its solid mass, as shown in the assessment of viewpoints in **Section 19.7.1**, and shown in Viewpoint 2 (**Figure 19.25**) Viewpoint 3 (**Figure 19.26**), Viewpoint 4 (**Figure 19.27**), Viewpoint 5 (**Figure 19.28**) and Viewpoint 8 (**Figure 19.31**). The viewpoints demonstrate that from locations on these coasts where there is the potential for distant visibility of the Windfarm Site, the small scale of the WTGs, seen beyond the horizon, would have limited influence on views. The offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**) within views, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

753. The offshore WTGs and OSP may be perceived to contrast with the characteristics of wide, open views of the empty Atlantic Ocean gained from this MCA since it would introduce visible elements that would be apparent in views through their vertical form, compared to the horizontal emphasis of the undeveloped seascape. The offshore WTGs would change the seascape composition, through the addition of elements into the simple sea/sky composition and forming a distant focal point in



views to the west. The Windfarm will partially change the variety of views gained along the line of the coasts; however, the near geological features, wildlife, and coastal processes would often take prominence in views, and in which the vast majority of open sea skyline and coastline will be retained and remain unchanged. Views towards the land and coastal areas also define the character of the seascape and these would remain unchanged.

754. The Windfarm may appear as a contrasting influence on the 'wild / tranquil' and 'remote' character of the MCA through the introduction of man-made elements into the wider environment, however it may also be perceived as relating legibly to the coastal exposure and inclement conditions that define this wildness associated with the coast. The wildness and exposure experienced along the coast is often most readily experienced where the seas are swelled by westerly winds, where the strength of the sea, its dynamism and coastal exposure are readily evident; conversely, on calm days the quality of the seascape can be 'tranquil.' The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, these wildness attributes of the coast. Its distant location in the wider seascape context outside this MCA results in less contrasts and influence on the sense of isolation and relative wildness in this context. Although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental sense of isolation, exposure, and relative wildness would not be lost.

755. The magnitude of impact to the character of this seascape is assessed as **low**.

#### 19.9.4.4 Significance of effect: Construction and Decommissioning

756. **Moderate-minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.9.4.5 Significance of effect: Operation and Maintenance

757. **Moderate-minor not significant**, adverse, long term, reversible.

### 19.9.5 MCA 45: Port Gaverne to St. Ives Bay

#### 19.9.5.1 Baseline and Sensitivity to Change

758. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 45: Port Gaverne to St. Ives Bay is considered to be **high**, reflecting that the view has **high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.9.5.1.1 Value

759. The MMO description of the MCA's overall character states:



*"This is an open seascape fully exposed to the force of the Atlantic and susceptible to swells and inshore gales. The coastline is characterised by eroding slate cliffs and rocky headlands, interspersed by sheltered coves and sweeping sandy beaches backed by sand dunes and estuaries. The submerged rocky reefs, shallows and sand bars create navigational hazards which are marked by lit buoys and lighthouses.*

*The area is rich in coastal, estuarine, and marine wildlife (much designated as SAC or MCZ), as well as cultural associations with wrecking and shipwrecks, coastal mining and maritime trade. The potential for harnessing the MCA's high wave energy is being explored through renewable energy testing sites. Sandy beaches are a draw for summer visitors, including, and tourist development stretches from the harbour settlements along the coast. There is a strong visual connection with the adjacent MCAs along the coast and panoramic views out to the Atlantic Ocean from the high cliffs. The area has inspired writers and artists through history, including the St Ives School of Painting in the early 20th century."*

760. MCA 45 forms part of the marine setting to the coastal landscape of the CAONB Section 02: Pentire Point to Widemouth and Section 04: Carnewas to Stepper Point, which includes the Pentire Point to Widemouth Heritage Coast and Trevoze Heritage Coasts in Cornwall. These coastal landscape designations indicate a high value attached to the MCA.

#### 19.9.5.1.2 Susceptibility

761. This MCA has an open and exposed character. There is a relatively strong visual association to MCAs along the coast to the east. The simple, sea horizon is visually relatively undisturbed by permanent features, aside from the feature of Lundy Island far to the north-east, making the SCA susceptible to changes in its seascape backdrop, yet the large scale and simplicity of offshore views moderate susceptibility.

762. Views are wide, as noted particularly in "*Panoramic views from the high cliffs along the North Cornwall coast, to North Devon, and out to the Atlantic Ocean. This includes vistas from the South West Coast Path*" and from the exposed headlands as at Trevoze and Pentire Head (see **Figure 19.32**), which provide contrast to, and frame views from, sheltered bays and beaches, and the Camel Estuary. Views are out to the sea skyline which, are liable to be influenced by development in the sea, however it is a wide, large-scale, and simple seascape, in which complexity is avoided and there is no specific directional or framed vista. Conversely, the character of the seascape is also highly defined by views towards the land and coastal areas, which would remain unchanged by the proposed change.

763. The perceptual experience of this MCA is described with reference to its rough sea conditions, susceptibility to inshore gales, and exposure to the full force of the Atlantic. The wild nature of the seascape and coastline is a characteristic that draws people to this area. Consequently, the MCA description notes that its coastline is *"...dominated by tourism and recreational use... The windswept sandy beaches are popular with holiday makers, particularly surfers. Tourist development including caravan parks stretch from the harbour settlements along coastal cliffs and beaches."* which influence the developed character of parts of the MCA coastline within the study area.
764. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in its setting, in panoramic sea views experienced from the open and exposed areas of the seascape and its coast. A number of factors reduce the susceptibility of the MCA to change, including the large scale and simplicity of the seascape, and influence of modern artefacts and coastal development in views along the coast to adjacent MCAs.

#### 19.9.5.2 Magnitude of impact: Construction and Decommissioning

765. No part of the Windfarm Site will be located within this MCA. Existence and visibility of the WTG and OSP structures 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of visibility of the Windfarm construction/ decommissioning at distance, over a minimum range of 39.4km, in offshore waters to the west as part of expansive sea views.

#### 19.9.5.3 Magnitude of impact: Operation and Maintenance

766. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the north of this MCA, within part of the wider seascape setting.
767. The operation and maintenance of the Windfarm may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from open and exposed areas of seascape, and fragmented locations on the coastal fringe, including open high cliffs and exposed headlands. From these geographic areas with visibility, the operation and maintenance of the Windfarm may result in changes to specific aesthetic/perceptual aspects of its seascape character. The ZTV shows that there will be limited visibility within the inshore seascape at Port Quin Bay, Padstow Bay and

between Stepper Point and Trevoise Head where distance and earth curvature would reduce the number of visible offshore WTGs, and no visibility of the offshore WTGs from parts of the seascape where headland landforms provide screening. The offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**) within views, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

768. The Windfarm may be perceived to contrast with the characteristics of wide, open views of the empty Atlantic Ocean gained to the north of the MCA since it would introduce visible elements that would be apparent in views through their vertical form, compared to the horizontal emphasis of the undeveloped seascape. The offshore WTGs would change the seascape composition, through the addition of elements into the simple sea/sky composition and forming a new distant focal point in views, as shown in Viewpoint 9 (**Figure 19.32**).

769. The Windfarm would have little influence on the to the 'wild' and 'exposed' character of the MCA through the introduction of man-made elements into the environment; it may be perceived as relating legibly to the coastal exposure and inclement conditions that define this wildness associated with the coast. The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, these wildness attributes of the coast. Its distant location in the wider seascape context outside this MCA results in less contrasts and influence on the sense of isolation and relative wildness in this context. Although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental sense of isolation, exposure, and relative wildness would not be lost.

770. The magnitude of impact is assessed as **low**.

#### 19.9.5.4 Significance of effect: Construction and Decommissioning

771. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.9.5.5 Significance of effect: Operation and Maintenance

772. **Minor not significant**, adverse, long term, reversible.

## 19.10 Potential Seascape Effects – Wales

### 19.10.1 MCA 18: West Pembrokeshire Coastal Waters and Islands

### 19.10.1.1 Baseline and Sensitivity to Change

773. Only the very southern extent of this MCA falls within the northern part of the study area. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 18 is considered to be **high**, reflecting that the seascape has **high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.10.1.1.1 Baseline

774. The relevant 'Key Characteristics' of this MCA include:

- *"Diverse and spectacular coastline with rugged steep cliffs up to 140m AOD punctuated by sandy foreshores steep narrow valleys, harbours and isolated bays.*
- *The islands of Skomer, Skokholm, and Ramsey mark the entrance to St Bride's Bay. Each has its own unique characteristics with an array of coastal features including rocky shores, stacks, arches, caves and small coves.*
- *Numerous coastal settlements acting as key landmarks; the lighthouse on Skokholm is also a strongly associated coastal and maritime feature – both in the day and at night.*
- *The MCA is used by commercial ships anchoring while waiting to access Milford Haven. The Fishguard ferry passes nearby within MCA 19.*
- *Popular coastline and marine area for a range of recreational activities. Sandy coves including Whitesands Bay and broad expanses at Broad Haven and Newgale Sands provide visitors with the opportunity to access the sea for water sports.*
- *Uninterrupted vistas define character, including to famous cliffs, islands (Ramsey, Skomer and the Bishops) and open sea from several high viewpoints –accessible via the Coast Path."*

775. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, MCA 18 includes parts of SCA 26: Skokholm and Gateholm coastal waters and SCA 29: Southern inshore waters (**Figure 19.9**).

776. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. Although the description of SCA 29: Southern inshore waters makes further references to the influence of the MOD firing ranges at Castlemartin, which influence the characteristics of the MCA, particularly in relation to perceptual qualities of tranquillity. The qualities of SCAs identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCAs is described as follows:

SCA 26: Skokholm and Gateholm coastal waters:

- *"Remote, unspoilt rural coastline and island of importance for marine and island nature conservation and geological interest.*

- *Historic character of the area and openness of the terrestrial landscape.*
- *Focal points of headlands and islands.*
- *Pembrokeshire Coast Path as a sensitive receptor."*

SCA 29: Southern inshore waters:

- *"The area wraps around Skomer and Skokholm to the west forming an important part of their setting.*
- *The area forms part of the unspoilt view from the western and southern coast, including from the Pembrokeshire Coast Path.*
- *Open sea area with unspoilt, simple, consistent and unified marine character at a vast scale and a significant sense of openness and remoteness."*

#### 19.10.1.1.2 Value

777. The MCA forms part of the coastal landscape of the PCNP and the South Pembrokeshire Heritage Coast (**Figure 19.11**). These coastal landscape designations indicate a **high** value attached to the MCA by society.

#### 19.10.1.1.3 Susceptibility

778. The islands within this MCA are noted to have an exposed character, with rough seas exposed to westerly winds. There is a visual association between this seascape and the open seas and offshore waters to the south. Uninterrupted vistas take in an uncluttered sea skyline, which provides the backdrop to Skokholm Island, making the MCA susceptible to changes in its seascape backdrop, yet the large scale and simplicity of offshore views moderate susceptibility as does the limited association between the MCA and the Windfarm due to the considerable distance between them.

779. The key characteristics of this MCA are the islands and rugged coastline within the MCA itself which would be unchanged by the Windfarm.

780. The key susceptibility of this MCA is the relationship of Skokholm Island, with the Windfarm Site, which will form focal points when viewed from the seascape and mainland coastline, however, it is a wide, open seascape, where complexity created by islands and landforms is generally contained to the coastal edges, leaving a wide, open expanse of offshore waters to the south.

781. Parts of the seascape and its coast are noted as being remote and relatively unspoilt. Tranquillity and remoteness can be reduced in summer due to visitor levels, car parking and established recreational uses. Passing ferries to Ireland from Pembroke Dock are visible as are oil tankers and other freight ships for the terminals and the power station in Milford Haven, viewed outside the MCA and these also reduce perceived remoteness.

782. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm Site in its setting, in panoramic sea views. Although the relatively unspoilt island character is susceptible to changes arising from the introduction of modern artefacts, Skokholm Island and Dale peninsula have a strong inherent character, such that their fundamental physical, geological, cultural, and natural heritage aspects are not liable to changes arising from the Windfarm outside the MCA at distance in the offshore waters.

#### 19.10.1.2 Magnitude of impact: Construction and Decommissioning

783. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low-negligible** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of the Windfarm Site at distance, over a minimum range of 58.2km, in offshore waters to the south.

#### 19.10.1.3 Magnitude of impact: Operation and Maintenance

784. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south of this MCA, within part of the wider seascape setting. From this direction the HFoV of the WTGs would be very narrow (**Figure 19.6**).

785. The operation and maintenance of the Windfarm may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from open and exposed areas of seascape, and fragmented locations on the coastal fringe, including open high cliffs and exposed headlands on the southern parts of Skokholm Island and the Dale Peninsula. From these geographic areas with visibility, the operation and maintenance of the Windfarm may result in changes to specific aesthetic/perceptual aspects of its seascape character. The ZTVs (**Figure 19.4** and **Figure 19.5**) show that there will be limited visibility within the immediate seascape setting to the island and mainland, where distance and earth curvature would reduce the number of visible offshore WTGs so that only blades of four WTGs would be visible above the skyline.

786. The *"uninterrupted vistas"* out to sea and the *"unspoilt view from the western and southern coast"*, and *"open sea area"* will be partially changed through the



introduction of WTGs on the sea skyline outside the MCA; however, as demonstrated by Viewpoint 1 (**Figure 19.24**) the offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**), in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

787. There will be a partial loss of open seascape occupied by the WTGs and a change in the seascape composition, through the addition of elements into the simple sea/sky composition and forming a further focal point, however the Windfarm Site would be located approximately 58.2km from this MCA (at its closest point), and therefore occupy a small portion of the views and relatively small-scale within the large scale, open, expansive, and simple seascape, which moderates the magnitude of impact. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast, and Skokholm Island, by expansive areas of intervening seascape and offshore waters. The WTGs are sufficiently distant, small scale and narrow in horizontal extent, that the wide and panoramic views to the sea will be retained and existing focal points such as the island and headlands are not undermined.

788. The Windfarm Site would have little influence on the 'exposed' character of the MCA through the introduction of man-made elements into the environment; it may be perceived as relating legibly to the coastal exposure and inclement conditions that define this wildness associated with the coast. The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, these wildness attributes of the coast. Its distant location in the wider seascape context outside this MCA results in less contrasts and influence on the sense of isolation and relative wildness in this context. Although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental sense of tranquillity, exposure, and relative remoteness would not be lost.

789. On balance, the magnitude of impact is assessed as **low-negligible**.

#### 19.10.1.4 Significance of effect: Construction and Decommissioning

790. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.1.5 Significance of effect: Operation and Maintenance

791. **Minor not significant**, adverse, long term, reversible.



## 19.10.2 MCA 19: West Pembrokeshire Islands, Bars and Inshore Waters

### 19.10.2.1 Baseline and Sensitivity to Change

792. The southern extent of this MCA falls within the northern part of the study area. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 19 is considered to be **medium-high**, reflecting that the seascape has **medium-high** value and a **medium** susceptibility to the proposed change, for the reasons set out below.

#### 19.10.2.1.1 Baseline

793. The relevant 'Key Characteristics' of this MCA include:

- *" Varied offshore MCA with a large area of sea, ranging from 30-100m in depth on a gravelly sand seabed.*
- *Exposed seascape area with high wave stress, strong tidal currents and tidal rips and overfalls around rocks create hazardous waters.*
- *The inshore waters are a popular draw for recreational activity including wildlife trips, sailing and diving. Commercially the area is used for sea angling, fishing, ferries and commercial shipping.*
- *Islands form distinct features in views within the MCA. Distant views of the mainland to the east and large shipping vessels to the west.*
- *Forms a maritime backdrop to the iconic Pembrokeshire Coast National Park view from Carn Llidi to Ramsey Island. Views back to the Preselis from this MCA also form a dramatic landward setting.*
- *Open sea area with simple, consistent and unified marine character at a vast scale and a significant sense of openness, remoteness and exposure.*
- *The area's qualities are determined almost entirely by the natural forces of water, through swell and waves, and wind."*

794. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, MCA 19 includes parts of SCA 28: West open sea and SCA 29: Southern inshore waters (**Figure 19.9**).

795. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. Although the descriptions of both SCA 28 and SCA 29 make further references to the influence of the MOD firing ranges at Castlemartin, which influence the characteristics of the MCA, particularly in relation to perceptual qualities of tranquillity. The qualities of SCAs identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCAs is described as follows:

SCA 28: West open sea:

- *“Open sea area with unspoilt, simple, consistent and unified marine character at a vast scale and a significant sense of openness, tranquillity and remoteness.*
- *Forming part of the unspoilt view from the western coast with Pembrokeshire Coast Path as a sensitive receptor.*
- *Part in the Pembrokeshire Marine SAC.”*

SCA 29: Southern inshore waters:

- *“The area wraps around Skomer and Skokholm to the west forming an important part of their setting.*
- *The area forms part of the unspoilt view from the western and southern coast, including from the Pembrokeshire Coast Path.*
- *Open sea area with unspoilt, simple, consistent and unified marine character at a vast scale and a significant sense of openness and remoteness.”*

#### 19.10.2.1.2 Value

796. No part of this MCA is covered by a landscape designation. However, the MCA forms part of the offshore marine setting to the PCNP and the South Pembrokeshire Heritage Coast. These coastal landscape designations indicate a high value attached to the MCA by society on a national scale, on account of its character and qualities. On balance, the value of this MCA is **medium-high**.

#### 19.10.2.1.3 Susceptibility

797. This MCA is a large-scale area of open water, simple, with distant, empty horizons which contrast with view towards the *“dramatic”* mainland coast of the PCNP. The MCA is separated from land masses by adjacent seascapes, which would contribute to the perceptual qualities of tranquillity and exposure, as well as its sense of openness and remoteness.

798. Parts of the seascape and its coast are noted as being relatively unspoilt with a remote character. Passing ferries and commercial shipping, viewed outside the MCA would reduce perceived remoteness.

799. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm Site in its setting, in panoramic sea views. Although the relatively unspoilt seascape character is susceptible to changes arising from the introduction of modern artefacts, the drama of the PCNP coastline has a strong inherent character, such that its fundamental physical, geological, cultural, natural heritage aspects, and primacy as the landscape setting

to the MCA are not liable to changes arising from the Windfarm Site outside this seascape at distance in the offshore waters.

#### 19.10.2.2 Magnitude of impact: Construction and Decommissioning

800. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. The influence of these features would be barely perceptible in the context of the existing influence of commercial shipping within and in adjacent seascapes. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low-negligible** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of the Windfarm Site at distance, over a minimum range of 51.4km, in offshore waters to the south.

#### 19.10.2.3 Magnitude of impact: Operation and Maintenance

801. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south of this MCA, within part of the wider seascape setting. From this direction the HFoV impacted by the WTGs would be very narrow (**Figure 19.6**).

802. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from open and exposed areas of seascape. From these geographic areas with visibility, the operation and maintenance of the Windfarm Site may result in changes to specific aesthetic/perceptual aspects of its seascape character. The ZTV shows that there will be limited visibility on the northern parts of this MCA within the study area, where distance and earth curvature would reduce the number of visible offshore WTGs. **Figure 19.4** illustrates that across much of the MCA only blades of turbines would be visible with blades and hubs of two WTGs visible at a maximum range of approximately 53km.

803. The "*Open Sea area with unspoilt, simple, consistent and unified marine character*" will be partially changed through the introduction of WTGs on the sea skyline outside the MCA, however the offshore WTGs will occupy a narrow portion of the HFoV, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.

804. There will be a partial loss of open seascape occupied by the WTGs and a change in the seascape composition, through the addition of elements into the simple sea/sky composition and forming a further focal point, however the Windfarm Site will be located approximately 51.4km from this MCA (at its closest point), and the offshore WTGs would occupy a small portion of the views (**Figure 19.6**) and relatively small-scale within the large scale, open, expansive, and simple seascape, which moderates the magnitude of impact. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast by areas of intervening seascape and offshore waters. The WTGs are sufficiently distant, small scale and narrow in horizontal extent, that the wide and panoramic views to the sea will be retained and existing focal points such as the island and headlands to the north are not undermined.

805. The Windfarm Site would have little influence on the *"vast scale and a significant sense of openness, tranquillity, and remoteness"* characteristics of the MCA through the introduction of man-made elements into the environment; it may be perceived as relating legibly to the coastal exposure and inclement conditions that define this wildness associated with the coast. The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, these wildness attributes of the coast. Its distant location in the wider seascape context outside this MCA results in less contrasts and influence on the sense of remoteness in this context. Although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental sense of vast scale and the dominance of marine characteristics would not be lost.

806. On balance, the magnitude of impact is assessed as **low-negligible**.

#### 19.10.2.4 Significance of effect: Construction and Decommissioning

807. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.2.5 Significance of effect: Operation and Maintenance

808. **Minor not significant**, adverse, long term, reversible.

### 19.10.3 MCA 20: Irish Sea Open Waters

#### 19.10.3.1 Baseline and Sensitivity to Change

809. The southern extent of this MCA falls within the north-western part of the study area. The location of this MCA is shown on **Figure 19.8**. sensitivity of MCA 20 is

considered to be **medium**, reflecting that the seascape has **medium** value and a **medium** susceptibility to the proposed change, for the reasons set out below.

#### 19.10.3.1.1 Value

810. The relevant 'Key Characteristics' of this MCA include:

- *"Large area of open sea, over 100m deep.*
- *The area is used by commercial shipping with a traffic separation zone west of the Smalls.*
- *Open sea area with a simple, consistent and unified marine character at a vast scale and a significant sense of openness, tranquillity, remoteness and exposure.*
- *The area's qualities are determined almost entirely by the natural forces of water, through swell and waves, and wind."*

811. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, the boundary of MCA 20 coincides with that of SCA 44: Western offshore – very deep water (**Figure 19.9**).

812. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. The qualities of SCA 44 identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCAs is described as follows:

SCA 44: Western offshore; very deep water:

- *"A very small part is in the Pembrokeshire Marine SAC.*
- *The area forms part of the unspoilt view on the horizon from the western coast, including from the Pembrokeshire Coast Path.*
- *Open sea area with unspoilt, simple, consistent and unified marine character at a vast scale and a significant sense of openness, tranquillity, and remoteness.*
- *General lack of light pollution."*

813. No part of this MCA is covered by a landscape designation. It is located well beyond the immediate setting of any nationally designated landscapes and is separated from the PCNP, intervening MCAs within Welsh waters. Accordingly, its value is medium.

#### 19.10.3.1.2 Susceptibility

814. This MCA is a large-scale area of open offshore water, simple, and not influenced by built features which provides the distant horizon to the west, as seen from the coastline and intervening MCAs. The MCA is separated from land masses by adjacent seascapes, which would contribute to the perceptual qualities of tranquillity and exposure, as well as its sense of openness and remoteness.

815. Parts of the seascape are noted as being relatively unspoilt with a remote character. Passing ferries and commercial shipping, viewed both within and outside the MCA would reduce perceived remoteness.
816. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of Windfarm Site in its setting, in panoramic sea views. Although the relatively unspoilt seascape character is susceptible to changes arising from the introduction of modern artefacts. From the coast, the MCA will form part of the wider seascape context, with the Windfarm viewed on the sea skyline at substantial distance to the south and will not appear within the backdrop. The Windfarm Site is located over 54.9km outside the MCA, and its sense of openness, remoteness and exposure derived from the natural forces of the sea will remain.

#### 19.10.3.2 Magnitude of impact: Construction and Decommissioning

817. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. The influence of these features would be barely perceptible in the context of the existing influence of commercial shipping within and in adjacent seascapes. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of visibility of the Windfarm Site at distance, over a minimum range of 54.9km, in offshore waters to the south.

#### 19.10.3.3 Magnitude of impact: Operation and Maintenance

818. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south of this MCA, within part of the wider seascape setting.
819. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from open and exposed areas of seascape. From these geographic areas with visibility, the operation and maintenance of the Windfarm Site may result in changes to specific aesthetic/perceptual aspects of its seascape character. The ZTV shows that there will be limited visibility on the northern parts of this MCA within the study area, where distance and earth curvature would reduce the number of visible offshore WTGs. **Figure 19.5** illustrates that across the MCA only blades of turbines would be visible and across the most distant parts of the MCA only four of the WTGs would be visible.

820. The “*Open Sea area with unspoilt, simple, consistent and unified marine character*”, will be partially changed through the introduction of WTGs on the sea skyline outside the MCA, however the offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**), in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
821. There will be a partial loss of open seascape views to the south of this seascape, occupied by the WTGs, and a change in the seascape composition, through the addition of elements into the simple sea/sky composition and forming a distant focal point, however the WTGs will be located approximately 54.9km from this MCA (at its closest point), and therefore occupy a small portion of the views and relatively small-scale within the large scale, open, expansive and simple seascape, which moderates the magnitude of impact. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast.
822. The Windfarm Site would have little influence on the “*vast scale and a significant sense of openness, tranquillity and remoteness*” characteristics of the MCA through the introduction of man-made elements into the environment; it may be perceived as relating legibly to the exposure and inclement conditions that define this wildness associated with this offshore seascape. The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, these wildness attributes of the coast. Its distant location in the wider seascape context outside this MCA results in less contrasts and influence on the sense of remoteness. Although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental sense of vast scale and the dominance of marine characteristics would not be lost.
823. On balance, the magnitude of impact is assessed as **low-negligible**.

#### 19.10.3.4 Significance of effect: Construction and Decommissioning

824. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.3.5 Significance of effect: Operation and Maintenance

825. **Minor not significant**, adverse, long term, reversible.

### 19.10.4 MCA 21: Milford Haven



#### 19.10.4.1 Baseline and Sensitivity to Change

826. Only the very southern extent of this MCA falls within the northern part of the study area. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 18 is considered to be **medium-high**, reflecting that the seascape has **medium-high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

##### 19.10.4.1.1 Value

827. The relevant 'Key Characteristics' of this MCA include:

- *"The sheltered tidal estuary creates an internationally and nationally important natural harbour with mudflats, sandy inlets, marshes, creeks and bays.*
- *The ria forms a unifying theme between the two distinctly contrasting characters of the enclosed unsettled upper stretches in the east and the open developed estuary in the west*
- *Major deep sea port, Pembroke Port and Milford Docks, with extensive industrial facilities, oil refineries, the largest oil/gas/petrochemical storage facilities in the UK and power station.*
- *Historically important quays at Milford Haven and Pembroke, along with Carew Castle and tidal mill, medieval waterside settlements and many features associated with military defence.*
- *Popular recreation and sailing destination especially around Dale, although low key recreation including small boat moorings elsewhere. High numbers of walkers use the coastal path which hugs the coastline.*
- *Busy ports and commercial shipping channels to the west with tanker terminals, ferry terminal and marinas contrasting to the high levels of tranquillity within the sheltered tidal estuary to the east.*
- *Varied views within the estuary often contained and channelled by the surrounding steep hills of Pembrokeshire Coast National Park, opening up towards the wide estuary mouth.*
- *The oil refinery and associated infrastructure dominates views into the MCA, including from the surrounding seas (MCAs 18, 19, 22 and 23)."*

828. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, MCA 21 includes parts of SCA 31: Outer Milford Haven (**Figure 19.9**).

829. The SCA's key characteristics and qualities reflect the broad description of the MCA profile. The qualities of SCA identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCA is described as follows:

SCA31: Outer Milford Haven

- *“Remote, unspoilt cliffs and sheltered bays and estuaries.*
- *Popular recreational destinations such as Dale.*
- *Nature conservation interest especially around Dale.*
- *Richness of military and nautical history.*
- *Pembrokeshire Coast Path as a sensitive receptor.”*

830. The MCA forms part of the coastal landscape of the PCNP and its associative seascape setting, as well as the Marloes and Dale and South Pembrokeshire Heritage Coast. These coastal landscape designations indicate a high value attached to the MCA by society.

#### 19.10.4.1.2 Susceptibility

831. The seascape is generally of large-scale, however there are contrasts between the larger scale more open, exposed seascape at the mouth of Milford Haven compared to smaller scale, more contained areas further into the haven. There are also large-scale structures at the Liquefied Natural Gas terminal, refinery, and associated infrastructure at Pembroke Power Station to the east of the MCA, which influence its setting. There are contrasts in scale and exposure between the open and exposed sea corridor at the mouth of the Haven with more contained and sheltered bays, with their channelled views. West Angle and Dale bays are sheltered and have limited exposure to the potential changes arising from the Windfarm, whereas the mouth of the Haven is more exposed to the open seas.

832. The main susceptibility is the potential introduction of elements into the focus of framed views that are channelled out to sea between St Ann's Head and the Angle Peninsula, and the relationship to focal points such as Stack Rock and Thorn Island.

833. A number of factors reduce the susceptibility of the MCA to change, including commercial shipping and the adjacent refinery and other industrial and urban land uses, the contained ria which is enclosed by surrounding hills and plateau and limits the associations with the open seas, and the levels of lighting associated with settlement, shipping, and industry. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in the setting of the MCA in sea views experienced from the more open and exposed areas of the MCA at the outer edges of Milford Haven, including from St Ann's Head and the Angle Peninsula. The seascape has a strong inherent character, and has been changed by the introduction of large-scale, modern industrial and military uses, which reduces its susceptibility to the proposed change arising from the Windfarm Site outside the MCA at distance in the offshore waters.

#### 19.10.4.2 Magnitude of impact: Construction and Decommissioning

834. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. The influence of these features would be barely perceptible in the context of the existing influence of commercial shipping within and in adjacent seascapes. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of the Windfarm Site at distance, over a minimum range of 57.8km, in offshore waters to the south.

#### 19.10.4.3 Magnitude of impact: Operation and Maintenance

835. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south of this MCA, within part of the wider seascape setting.

836. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from open and exposed areas of seascape at the mouth of the haven, and locations on the coastal fringe, including the southern parts of the Angle and Dale Peninsulas. Due to the intervening screening provided by the landforms of the Dale and Angle Peninsulas, which enclose the haven and restrict views out to the open seas, there is no visibility of the Windfarm Site to the east of Great Castle Head. From the geographic areas with visibility, the operation and maintenance of the Windfarm Site may result in changes to specific aesthetic/perceptual aspects of its seascape character.

837. There are contrasts in scale and exposure between the open and exposed sea corridor at the mouth of the Haven with more contained and sheltered bays within the haven. The "*wide views*" out to sea from the mouth of the haven and the "*channelled and framed views out to sea*" past the headlands of St Ann's Head and Rat Island, will be partially changed through the introduction of WTGs on the sea skyline to the south, outside the MCA. In the wide views out to sea from the mouth of the haven, the WTGs will occupy a narrow portion of the HFoV from this direction (**Figure 19.6**), in which the vast majority of open sea skyline and coastline will be retained and remain unchanged. There will be a partial loss of open seascape occupied by the WTGs and a change in the seascape composition, through the

addition of elements into the simple sea/sky composition and forming a further focal point, however the Windfarm Site would be located 57.8km from these areas of the MCA and therefore the offshore WTGs would have a relatively small-scale and occupy a small portion of the views (**Figure 19.6**) within the large scale, open, expansive, and simple seascape, which moderates the magnitude of impact. **Figure 19.4** illustrates that across the MCA only blades of turbines would be visible and across the most distant parts of the MCA only four of the WTGs would be visible.

838. The offshore WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, far to the south of the mouth of Milford Haven and clearly separated from the headlands, by expansive areas of intervening seascape and offshore waters.

839. In the channelled and framed views out to sea, the WTGs will influence the character in channelled views out to sea, framed by St Ann's Head and the Angle Peninsula, partially enclosing the space between the headlands in the seascape backdrop and competing with existing focal points that define its distinctiveness. The Windfarm Site will, however, occur in the context of the oil refineries, jetties, power station and busy harbour with large vessels, tankers and ferries using the waters which influence the MCA. Although the WTGs will increase the influence of man-made elements perceived from the MCA, development influences are already tangible in the experience and contribute to the diversity of character evident around Milford Haven. The ZTVs (**Figure 19.4** and **Figure 19.5**) show that the WTGs would rarely be visible from the enclosed bays within the Haven and will not change the perception of shelter and safety experienced from within these bays, such as West Angle and Dale, which on some occasions are already set against distant views of oil refineries. The Windfarm Site is likely to influence the contrast between the more rural outer areas of Milford Haven with the Inner harbours, dominated by large scale energy and port facilities and urban development.

840. The magnitude of impact is assessed as **low-negligible**.

#### 19.10.4.4 Significance of effect: Construction and Decommissioning

841. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.4.5 Significance of effect: Operation and Maintenance

842. **Minor not significant**, adverse, long term, reversible.

## 19.10.5 MCA 22: South Pembrokeshire Coastal and Inshore Waters

### 19.10.5.1 Baseline and Sensitivity to Change

843. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 22 is considered to be **high**, reflecting that the seascape has **high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.10.5.1.1 Value

844. The relevant 'Key Characteristics' of this MCA include:

- *"Diverse, rugged coast forming the southern edge of Pembrokeshire Coast National Park, with rocky sections, steep cliffs, arches and stacks interspersed with small coves, scalloped bays and sandy beaches.*
- *Large area of sea, mainly 30-60m deep on gravelly sand bed with shallower waters over sand on St Gowan Shoals to east (10-30m depth).*
- *Offshore waters are used by ferries, commercial shipping and fishing boats.*
- *MOD practice ranges strongly influence the MCA with large areas restricted at Manorbier and Castlemartin, associated with several wartime aircraft losses.*
- *Milford Haven Harbour limits extend out into the west of the MCA.*
- *Popular with walkers using the Pembrokeshire Coast Path and network of footpaths with good access to beaches. The area is also popular with climbers and kayakers.*
- *Wide, unspoilt views out to sea and along the coastline from headlands and cliff tops, as well as from sections of the Pembrokeshire Coast Path, including views to Caldey Island, as well as Lundy Island and the North Devon coast.*
- *Very tranquil, remote and often wild coastline when the firing ranges are not operating. Long stretches of coastline have little or no settlement.*
- *Offshore open sea area with simple, consistent and unified marine character at a vast scale and a significant sense of openness, remoteness and exposure."*

845. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, MCA 22 includes parts of SCA 29: Southern inshore waters, SCA 34: Freshwater West, SCA 35: Castlemartin coastal waters, and SCA 36: Stackpole coastal waters (**Figure 19.9**).

846. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. The qualities of SCAs identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCAs is described as follows:

SCA 29: Southern inshore waters:

- *“The area wraps around Skomer and Skokholm to the west forming an important part of their setting.*
- *The area forms part of the unspoilt view from the western and southern coast, including from the Pembrokeshire Coast Path.*
- *Open sea area with unspoilt, simple, consistent and unified marine character at a vast scale and a significant sense of openness and remoteness.”*
  
- SCA 34: Freshwater West:
  - *“Remote, unspoilt sweep of beaches and dune system with craggy cliffs.*
  - *Wide views across bay and to focal points such as St Ann's Head.*
  - *Tranquillity when no firing on ranges.*
  - *Important recreational destination.*
  - *Pembrokeshire Coast Path as a sensitive receptor.”*

SCA 35: Castlemartin coastal waters:

- *“Remote, wild, exposed coastline.*
- *Spectacular indented cliffs with numerous features such as arches, stacks and caves.*
- *Significant nature conservation and archaeological interest.*
- *Openness and sustained sea views, including views on clear day to Lundy Island.*
- *Pembrokeshire Coast Path is a sensitive receptor.”*

SCA 36: Stackpole coastal waters:

- *“Steep indented coastline with cliffs and coves forming a natural coastal edge.*
- *Rural pastoral character of the hinterland and dunes, with very limited built form.*
- *Pembrokeshire Coast Path as a sensitive receptor.*
- *Nature conservation interest of coast, grassland and dunes.*
- *Special relationship between Bosherton lakes inland with Broad Haven beach.*
- *Distinctive, historically important Stackpole Warren dune system.*
- *Wide, unspoilt views from the headlands to open sea and along the coast and channelled views such as from Broad Haven beach to Church Rock.*
- *Feeling of tranquillity in places especially out of season, away from the Castlemartin range.”*

847. The MCA forms part of the coastal landscape of the PCNP and its associative seascape setting, as well as the Marloes and Dale and South Pembrokeshire Heritage Coast. These coastal landscape designations indicate a **high** value attached to the MCA by society.



#### 19.10.5.1.2 Susceptibility

848. The MCA is large-scale which includes a variety of coastal environments, from low sweeping bays and extensive beaches, to elevated clifftops and headlands, and dramatic geological features including the Elegug Stacks and the Green Bridge of Wales. Consequently, views also vary, to the south, the southerly orientation of the coastline is wide, while to the west and east views are partially framed by headlands and by the edges of bays. There are strong contrasts in context between the sand dunes, the exposed beach of Freshwater West and the rugged cliff-top coastlines to the east around Castlemartin and Stackpole. The beach and cliffs afford direct views out to the sea skyline which are liable to be influenced by development in the sea. It is a wide, large-scale, and simple seascape, in which complexity is avoided and there is no specific directional or framed vista. Although, on clear days, long views south are noted to Lundy Island and the north Devon coast.
849. A number of factors reduce the susceptibility to the proposed change, particularly the presence of the MOD firing ranges, the use of the seascape for military firing, lack of access to the coastline around Linney Head, and the large-scale, simplicity of the coastal waters and south facing orientation of the coast which reduces its association with the Windfarm Site. The seascape is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm Site in the setting of the MCA in panoramic sea views, experienced from the open and exposed areas of the MCA. Although the relatively open, exposed, and remote character is susceptible to changes arising from the introduction of modern artefacts, the diversity and contrast along this part of the PCNP coast has a strong inherent character, such that its fundamental physical, geological, cultural, and natural heritage aspects are not liable to changes arising from the Windfarm Site outside the seascape at distance in the offshore waters.

#### 19.10.5.2 Magnitude of impact: Construction and Decommissioning

850. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. The influence of these features would be barely perceptible in the context of the existing influence of commercial shipping within and in adjacent seascapes. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of the Windfarm Site at distance, over a minimum range of 49.9km, in offshore waters to the south.



### 19.10.5.3 Magnitude of impact: Operation and Maintenance

851. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south of this MCA, within part of the wider seascape setting.
852. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The ZTV shows that there will be visibility of the offshore WTGs from the majority of the open seascape, with restricted visibility only occurring at a local level from the southern part of the Angle Peninsula, within the dune systems at Broomhill Burrows, Kilpaison Burrows and Brownslade Burrows, and from occasional areas of the enclosed cliff top landforms. Areas of the sea closest to the coast would have visibility of WTG blades only.
853. Areas of the coast between Linney Head, Elegug Stacks, and St. Govan's Head are within the ZTV, they are within the Castlemartin military firing range, and therefore frequently out of bounds to the general public. More fragmented theoretical visibility occurs further east, around St. Govan's Head and Stackpole Head, with the headland landforms screening visibility from the bays they enclose. There will be no change to perceived characteristics of these parts of the SCA which are outside the ZTV.
854. The closest part of the Windfarm Site is located approximately 42.9km outside MCA 22; therefore, the Windfarm will occur in its wider seascape setting and result in no direct changes to the physical characteristics of the MCA. There will also be zero change to many of the main physical characteristics of the SCA, including the fundamental character of the low jagged cliffs of the Angle Peninsula, the physical character of the beach and dunes at Freshwater West, the vertical limestone cliffs, arches and stacks, and the land use and landscape pattern, all of which will remain unchanged and continue to define the distinct character. There will also be zero changes to the sub-sea characteristics that are not part of the perceived character and zero change to the sensory experience of exposure.
855. The "*panoramic views*" from St. Govan Head and "*very wide sea views*" from other areas, between Govan Head and Elegug Stacks, along the Pembrokeshire Coast Path, will be partially changed through the introduction of WTGs on the sea skyline outside the SCA in the backdrop to the south. Southerly views across the arches, stacks out to sea and long views to Lundy Island and Devon, on clear days, will not be impacted as the Windfarm Site is located outside this field of view, to the west. There will be a slight change through the addition of elements into the simple sea/sky composition, in westerly views along the cliffs; however, as demonstrated by Viewpoint 1 (**Figure**

19.24) the WTGs will be located 55.1km from Elegug Stacks and will therefore appear small in scale and occupy a small HFoV from the coast and within the large scale, open, expansive and simple seascape (**Figure 19.6**), which moderates the magnitude of impact. The WTGs will occupy a narrow portion of the HFoV, in which the vast majority of open sea skyline and coastline will be retained and remain unchanged. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast by expansive areas of intervening seascape and the sensitive views to the focal points of headlands, islands, and geological formations, seen closer inshore and along the coastline.

856. Through the introduction of man-made elements into the distant seascape setting, the Windfarm Site may be perceived as contrasting with the "*feeling of wildness*" and "*exposure*" created at the sea edges and cliff tops of the SCA. It may also be perceived, however, as relating legibly to the coastal exposure and inclement conditions that define this sense of wildness associated with the coast. The WTGs readily relate to and convey in their aesthetic and kinetic form, the exposure of the seascape. Its distant location in the wider seascape context results in less contrast and influence on the sense of exposure and relative wildness in this context, such that the fundamental sense of exposure and feeling of wildness would not be lost. The sense of remoteness and tranquillity in the landscape is also influenced by the periodic noise of gunfire and vehicle movement from the Castlemartin military firing range, which is discordant and intrusive when active.

857. The addition of fixed man-made structures in the seascape setting of the MCA may potentially influence the perceived remoteness by reducing the sense of having a relative lack of human influence, however the degree of change is moderated by its distant location outside and oblique to the immediate seascape context of Castlemartin, and by the presence of other man-made elements and influences, particularly the military firing range. Much of the land area of MCA and its coastal exclusion zone, are used for the testing and firing of military weapons.

858. On balance, the magnitude of impact is assessed as **low-negligible**.

#### 19.10.5.4 Significance of effect: Construction and Decommissioning

859. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.5.5 Significance of effect: Operation and Maintenance

860. **Minor not significant**, adverse, long term, reversible.

## 19.10.6 MCA 23: South Pembrokeshire Open Waters

### 19.10.6.1 Baseline and Sensitivity to Change

861. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 23: South Pembrokeshire Open Waters is considered to be **medium**, reflecting that the view has **medium** value and a **medium** susceptibility to the proposed change, for the reasons set out below.

#### 19.10.6.1.1 Value

862. The relevant 'Key Characteristics' of this MCA include:

- *"Large area of sea, 30-100m deep on gravelly sand seabed.*
- *Inter-visibility with the southern Pembrokeshire coastline to the north and east, with the MCA itself forming the setting to views from the Pembrokeshire Coast Path along the edge of MCA 22.*
- *The outer open waters forms part of the busy sea route of the Bristol Channel linking south Wales with the English south west coast.*
- *Open sea area with a simple, consistent and unified marine character at a vast scale and a significant sense of openness, remoteness and exposure.*
- *The area's qualities are determined almost entirely by the natural forces of water, through swell and waves, and wind."*

863. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, MCA 23 includes parts of SCA 30: Southern offshore waters (**Figure 19.9**).

864. The SCAs key characteristics and qualities reflect the broad description of the MCA profile, although the description of SCA 30 makes further references to the influence of the MOD firing ranges at Castlemartin, which influences the characteristics of the MCA, particularly in relation to perceptual qualities of tranquillity. The qualities of SCAs identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCAs is described as follows:

SCA 30: Southern offshore waters:

- *"Small part in the Pembrokeshire Marine SAC.*
- *Land would be apparent to the east and forms part of the unspoilt view from the southern coast, including from the Pembrokeshire Coast Path.*
- *Open sea area with unspoilt, simple, consistent and unified marine character at a vast scale and a significant sense of openness, tranquillity and remoteness."*

865. No part of this MCA is covered by a landscape designation. It is separated from the PCNP by intervening SCAs. However, it is described as forming part of the setting to the south Pembrokeshire coast, particularly in views from the Pembrokeshire Coast Path.

#### 19.10.6.1.2 Susceptibility

866. The MCA would be susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in panoramic sea views experienced from open and exposed areas of seascape. This includes the role of the seascape as part of the marine backdrop setting to the PCNP coasts of Pembrokeshire in Wales.

867. The MCA is a large-scale area of open water, simple, with a unified marine character. Parts of the seascape are noted as being relatively tranquil, unspoilt with a remote character. Passing ferries and commercial shipping, viewed outside the MCA would reduce perceived remoteness.

868. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm in its wider setting, in panoramic sea views. Although the relatively unspoilt seascape character is susceptible to changes arising from the introduction of modern artefacts, the drama of the PCNP coastline has a strong inherent character, such that its fundamental physical, geological, cultural, and natural heritage aspects are not liable to changes arising from the Windfarm Site at distance in the offshore waters.

869. A number of factors reduce the susceptibility to the proposed change, including the MOD firing ranges nearby, the presence of shipping in offshore waters within and around the MCA, and the large scale and simplicity of the seascape.

#### 19.10.6.2 Magnitude of impact: Construction and Decommissioning

870. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. The influence of these features would be barely perceptible in the context of the existing influence of commercial shipping within and in adjacent seascapes. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of the Windfarm Site at distance, over a minimum range of 31.7km, in offshore waters to the south.

### 19.10.6.3 Magnitude of impact: Operation and Maintenance

871. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south of this MCA, within part of the wider seascape setting. The closest part of the Windfarm Site is located approximately 31.7km outside MCA 23; therefore, the Windfarm Site will occur in its wider seascape setting and result in no direct changes to the physical characteristics of the MCA.
872. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The ZTV shows that there will be visibility of the offshore WTGs from the majority of the open seascape. **Figure 19.4** illustrates that across the more distant parts of the MCA only blades of turbines would be visible above the sea horizon.
873. The Windfarm Site may be considered to contrast with the characteristics of extensive areas of open water and distant empty horizons since it would introduce visible elements that would be apparent in views through their vertical form, compared to the horizontal emphasis of the undeveloped seascape and would change the seascape composition, through the addition of elements into the simple sea/sky composition and forming a focal point in views to the south beyond this seascape which forms part of the wider marine backdrop to the Pembrokeshire coasts. The offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**), in which the vast majority of open sea skyline and coastline that form its wider context will be retained and remain unchanged. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast by expansive areas of intervening seascape and the sensitive views to the focal points of headlands, islands, and geological formations, seen along the coastline.
874. Through the introduction of floating man-made elements into the distant seascape setting, the Windfarm Site may be perceived as contrasting with the perceptual qualities of tranquillity, remoteness, and exposure. It may also be perceived, however, as relating legibly to the coastal exposure and inclement conditions that define this sense of wildness associated with the offshore seascape. The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, the exposure of the seascape. Its distant location in the wider seascape context results in less contrast and influence on the sense of exposure and relative wildness in this context, such that the fundamental sense of exposure and feeling of wildness would not be lost. The sense of remoteness and tranquillity in the landscape is also influenced by the periodic noise of gunfire from the Castlemartin military firing range, which is

discordant and intrusive when active, and by shipping within the busy commercial routes that pass through and to the south of the MCA.

875. The addition of fixed man-made structures in the seascape setting of the MCA may potentially influence the perceived remoteness by reducing the sense of having a relative lack of human influence, however the degree of change is moderated by its distant location outside the immediate seascape context

876. The magnitude of impact is assessed as **low**.

#### 19.10.6.4 Significance of effect: Construction and Decommissioning

877. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.6.5 Significance of effect: Operation and Maintenance

878. **Minor not significant**, adverse, long term, reversible.

### 19.10.7 MCA 28: Bristol Channel (Wales)

#### 19.10.7.1 Baseline and Sensitivity to Change

879. The westernmost extent of this MCA falls within the eastern part of the study area. The location of this MCA is shown on **Figure 19.8**. The sensitivity of MCA 28 is considered to be **medium**, reflecting that the seascape has **medium** value and a **medium** susceptibility to the proposed change, for the reasons set out below.

##### 19.10.7.1.1 Value

880. The relevant 'Key Characteristics' of this MCA include:

- *"Open sea with water depths ranging between 20 and 60 metres.*
- *Long-standing busy transport and trade route serving the major ports of South Wales and South West England, with thousands of ship movements per day.*
- *Leisure sailing by larger boats and commercial craft also takes place within the MCA.*
- *Sea with simple, open characteristics at a vast scale dominated by swell, waves and winds with a sense of remoteness.*
- *The seascape's open character affords strong inter-visibility between the South Wales and North Devon coasts, including the Gower AONB, Exmoor National Park, North Devon AONB and Lundy Island."*

881. At the local level, the seascape is described by the PCNPSCA (2013). Within the study area, the boundary of MCA 20 coincides with that of SCA 43: Bristol Channel offshore (**Figure 19.9**).

882. The SCAs key characteristics and qualities reflect the broad description of the MCA profile. The qualities of SCA 43 identified in the PCNPSCA (2013) as contributing to the sensitivity of the SCAs is described as follows:

SCA 43: Bristol Channel offshore:

- *“Simple, open, wild and remote character with views of South Wales coast and Lundy.*
- *Forms part of the open setting for Carmarthen Bay overlooked by the Pembrokeshire Coast National Park and the Gower AONB contributing to the sense of remoteness and wildness in these areas.*  
*Pembrokeshire and Wales Coast Path as a sensitive receptor overlooking the area at a distance.*
- *Lack of light pollution.”*

883. No part of this MCA is covered by a landscape designation. It is separated from the Welsh coast by intervening SCAs. However, it is described as forming part of the setting to the PCNP in views from the Pembrokeshire Coast Path.

#### 19.10.7.1.2 Susceptibility

884. This MCA is a large-scale area of open offshore water, with a simple composition, and has a unified marine character which provides the distant horizon seen from coastline and intervening MCAs, in which views to Lundy are appreciated. The MCA is separated from land masses by adjacent seascapes, which would contribute to the perceptual qualities of tranquillity and exposure, as well as its sense of openness and remoteness.

885. Parts of the seascape are noted as being relatively unspoilt with a remote character. Passing ferries and commercial shipping within this busy stretch of the Bristol Channel, viewed both within and outside the MCA, would reduce perceived remoteness.

886. The MCA is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm Site in its setting, in panoramic sea views. Although the relatively unspoilt seascape character is susceptible to changes arising from the introduction of modern artefacts, the fundamental physical, geological, cultural, and natural heritage aspects of the PCNP are not liable to changes arising from the Windfarm Site outside this seascape at distance in the offshore waters.



#### 19.10.7.2 Magnitude of impact: Construction and Decommissioning

887. No part of the Windfarm Site will be located within this MCA. Activity from vessel movements would be located far outside of this seascape during construction. The influence of these features would be barely perceptible in the context of the existing influence of commercial shipping within and in adjacent seascapes. Existence and visibility of the WTG and OSP structures over 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the MCA, arising from the influence of visibility of the Windfarm Site at distance, over a minimum range of 50.0km, in offshore waters to the south-west.

#### 19.10.7.3 Magnitude of impact: Operation and Maintenance

888. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south-west of this MCA, within part of the wider seascape setting.

889. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the MCA, as apparent to people in views from parts of the MCA with visibility (**Figure 19.13**). The main geographic area of the MCA that is within the ZTV, from which changes may occur, will be from open and exposed areas of seascape. From these geographic areas with visibility, the operation and maintenance of the Windfarm Site may result in changes to specific aesthetic/perceptual aspects of its seascape character.

890. The "*Sea with simple, open characteristics*", will be partially changed through the introduction of WTGs on the sea skyline outside the MCA; however, the WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**), in which the vast majority of open sea skyline to the west, and all views to the Welsh coastline to the north, will be retained and remain unchanged.

891. There will be a partial loss of open seascape views to the west of this seascape, occupied by the WTGs, and a change in the seascape composition, through the addition of elements into the simple sea/sky composition and forming a distant focal point, however the Windfarm Site would be located approximately 50.0km from this MCA (at its closest point), and therefore occupy a small portion of the views and relatively small-scale within the large scale, open, expansive and simple seascape, which moderates the magnitude of impact. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast to the

north. **Figure 19.4** illustrates that across the majority of the MCA only blades of turbines would be visible.

892. The Windfarm Site would have little influence on the “*vast scale dominated by swell, waves and winds with a sense of remoteness*” characteristics of the MCA through the introduction of man-made elements into the environment; it may be perceived as relating legibly to the exposure and inclement conditions that define this wildness associated with this offshore seascape. The offshore WTGs readily relate to and convey in their aesthetic and kinetic form, these wildness attributes of the coast. Its distant location in the wider seascape context outside this MCA results in less contrasts and influence on the sense of isolation and relative wildness in this context. Although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental sense of vast scale and the dominance of marine characteristics would not be lost.

893. On balance, the magnitude of impact is assessed as **low-negligible**.

#### 19.10.7.4 Significance of effect: Construction and Decommissioning

894. **Minor not significant** effect during construction and decommissioning, adverse, short-term, and temporary.

#### 19.10.7.5 Significance of effect: Operation and Maintenance

895. **Minor not significant**, adverse, long term, reversible.

## 19.11 Potential Landscape Character Effects – England

### 19.11.1 LCT 6: Lundy Island

#### 19.11.1.1 Baseline and Sensitivity to Change

896. Lundy Island is an iconic landmass in the middle of the Bristol Channel. It is described at the Local level within the North Devon & Torridge Local Councils (2010) JLCA, where it is classified as LCT 6: Offshore Islands. Also, at the County level as Devon Landscape Character Area (DLCA) 38 – Lundy. The character of the island is described in the North Devon and Exmoor (2015) NDESCA where it is classified as SCA 15: Lundy. Both the landscape and seascape character assessments have been used to inform the baseline and assessment of potential landscape character effects on Lundy Island.

897. The location of Lundy Island is shown on **Figure 19.10**. The sensitivity of LCT 6: Lundy Island is considered to be **medium-high**, reflecting that the landscape has

**medium-high** value and a **medium-high** susceptibility to the proposed change, for the reasons set out below.

#### 19.11.1.1.1 Baseline

898. Lundy Island lies to the east of the study area, off the coastline of north Devon.
899. The island is a flat-topped plateau, surrounded by high sea cliffs reaching to over 100 m. The west coast is exposed to the Atlantic, resulting in a *“rugged, exposed coastline,”* while the eastern side is noted as *“more sheltered with vegetated slopes and secluded rocky coves.”* The scale and mass of the island forms an *“important seascape feature”* which is a valued characteristic in views from large parts of the north Devon coast.
900. Broadly, the northern half of the island is characterised by unenclosed heath and grassland. Parts of the central and southern half of the island includes farmland enclosed in rectilinear parcels within low stone walls. There is an absence of tree cover across the island although the landscape description notes vegetated slopes with stunted trees and low-growing shrubs to the east and south-east.
901. Because of the elevated plateau landform and generally open landcover across a large extent of the island, in clear conditions it may be possible to gain long views to the south Wales and north Devon coasts. In these views the lighthouse at Hartland Point is identified as a distinctive landmark feature on the horizon. The moving blades of the Fullabrook onshore windfarm (Devon) are also noted to be visible in the distance in clear conditions.
902. The island is described as being *“at the mercy of the elements and defined by the ever-present influence of the sea.”* This exposure to the elements, as well as its remote and undeveloped character is noted to provide visitors to the island who arrive by boat and helicopter with a range of perceptual qualities that include a *“challenging and exhilarating wilderness experience.”* It is also described as a *“sanctuary and refuge from the modern world with rare true qualities of peace, tranquillity and a sense of being close to nature.”* Perceptions of tranquillity and seclusion are partially influenced by the presence of tourists (up to 20,000 per year noted in the 2010 JLCA) and the Lundy helicopter, albeit the latter is low in frequency and duration.
903. The island is designated as a Dark Sky Discovery Site, where views of stars and the Milky Way are visible in clear dark night skies. The dark sky qualities of the island contribute to the intangible perception of *“mysterious maritime qualities emphasised by the bright beams of the two lighthouses sweeping across dark night skies.”* Potential effects on the dark sky qualities of this LCT from visible aviation lighting are discussed in **Section 19.8.**

904. Lundy's church tower and 'Old Light' lighthouse are prominent features on the plateau. The small settlement and buildings on the island are clustered to the south, served by a new access road that links to the landing bay for the SS Oldenburg. Across the majority of the island there is no vehicular access. Public access across the island is possible through informal paths across the plateau and coastal cliffs and open access land.
905. The island is valued for its range of experiences and activities that can be enjoyed by visitors, which include birdwatching, walking, Lundy 'letterboxing' (weatherproof boxes are hidden around the island with clues to their whereabouts to encourage exploration), climbing, diving, kayaking, paddle-boarding, warden-led guided walks, and snorkel trips.

#### 19.11.1.1.2 Value

906. The island and its surrounding coastal waters lie within the Lundy Heritage Coast. Overall, the value of LCT 6: Lundy Island is **medium-high**.

#### 19.11.1.1.3 Susceptibility

907. There would be zero physical change to the characteristics of LCT 6: Lundy Island. The landscape character of Lundy Island is only susceptible to changes in perceived character / perceptual qualities because of the potential introduction of the Windfarm Site in the offshore seascape setting of the LCT as part of its wider context
908. There is a strong association between LCT 6: Lundy Island and the open seas and offshore waters that surround it. The island forms a key focus in views from the mainland coast of north Devon to the south, and in clear conditions it can be seen from distant parts of the North Cornwall and south Wales coastlines where it is visible in relative isolation. The prominence of the island as a focal point in this visual relationship is therefore a key characteristic that is susceptible to change arising from the introduction of floating structures in the seascape; however, within the open seascape the focal point of Lundy Island is experienced between the coastal edges of England and Wales, so that the open expanse of the Atlantic Ocean offshore waters to the west is separate from it; moderating susceptibility to the proposed development.
909. The long, panoramic views from Lundy Island to the South Wales and north Devon coasts, including the "*distinctive landmark feature*" of the lighthouse at Hartland Point are also susceptible to change arising from the Windfarm Site; however, the location of the Windfarm Site in the distant offshore seascape to the west, within the wide, open expanse of the Atlantic Ocean offshore waters, serves to moderate the

susceptibility to the proposed change of views to the mainland coasts and lighthouse at Hartland Point as these would not be impacted.

910. The perceptual qualities of Lundy Island include the island being "*at the mercy of the elements and ever-present influence of the sea, which can heighten the sense of a challenging, wilderness experience*". This is particularly the case from the western parts of the island, which take the full force of the Atlantic. The force of the wind and elements would be conveyed by the form and function of the offshore WTGs. The remoteness of the island, together with the relative lack of development, and that access to the majority of the island is only possible by foot, contributes to perceptions of tranquillity and seclusion and a sense of being "*away from the modern world.*" Yet, tranquillity, remoteness, and a sense of being "*away from the modern world*" are reduced by sight of Lundy's church tower and old lighthouse which form prominent vertical elements which are a visible marker of settlement on the island, and by tourism particularly in summer months when the SS Oldenburg runs scheduled sailings to Lundy Island at least three times a week between March and the end of October<sup>6</sup>. Further, in clear conditions, in distant views to the mainland coast of north Devon, the sight of man-made, modern structures includes the Hartland Lighthouse and Fullabrook onshore windfarm, and the movement of shipping in the Bristol Channel, reducing perceived remoteness, and susceptibility to the proposed change arising from the Windfarm Site.
911. LCT 6: Lundy Island is only susceptible to changes in perceived character/perceptual qualities because of the potential introduction of the Windfarm Site in the setting of the island, in panoramic sea views experienced from the open and exposed areas of the west coast. The visual characteristics of the island appreciated in its seascape setting, and long views gained from Lundy Island, are susceptible to changes arising from the introduction of the Windfarm Site, as to are the perceptual qualities of tranquillity, remoteness, and a sense of being "*away from the modern world.*" However, the fundamental physical, geological, cultural, and natural heritage aspects of Lundy Island are not liable to changes arising from the Windfarm Site outside the LCT at distance in the offshore waters of the Atlantic. Overall, the susceptibility is **medium-high**.

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<sup>6</sup> <https://www.landmarktrust.org.uk/lundyisland/day-trips/> Accessed November 2022

#### 19.11.1.2 Magnitude of impact: Construction and Decommissioning

912. No part of the Windfarm Site will be located within this LCT. Activity from vessel movements associated with the Windfarm Site would be located far outside of this seascape during construction. The existence and visibility of the WTG and OSP structures 8 months and one year, respectively, of the construction period, or dismantled over a lesser timescale, results in a **low** magnitude of impact. This occurs due to indirect change to the visual aspects of perceived character of the LCT, arising at distance, over a minimum range of 43.7km, in offshore waters to the west.

#### 19.11.1.3 Magnitude of impact: Operation and Maintenance

913. The Offshore Project would introduce six tall, widely spaced, moving WTGs and an OSP into distant offshore waters to the south-west of this LCT, within part of the wider seascape setting.

914. The operation and maintenance of the Windfarm Site may only result in changes to the visual aspects of perceived character of the LCT as apparent to people in views from parts of Lundy Island with visibility (**Figure 19.13** and **Figure 19.14**). The main geographic area of Lundy Island that is within the ZTV, from which changes may occur, will be from open and exposed areas along the central and western parts of the island. From these geographic areas with visibility, the operation and maintenance of the WTGs and OSP within the Windfarm Site may result in changes to specific visual/perceptual aspects of its character.

915. The importance of Lundy Island as an seascape feature and focal point in views from the north Devon coast will be partially changed through the introduction of WTGs and OSP on the sea skyline outside the LCT; however, as shown in Viewpoint 2 (**Figure 19.25**), Viewpoint 3 (**Figure 19.26**), Viewpoint 4 (**Figure 19.27**), Viewpoint 5 (**Figure 19.28**), Viewpoint 8 (**Figure 19.31**), Viewpoint 9 (**Figure 19.32**), and Viewpoint 10 (**Figure 19.33**), from the north Devon and Cornwall coasts within the study area the offshore WTGs and OSP will occupy a narrow portion of the HFoV (**Figure 19.6**), and would be sufficiently separated from Lundy Island such that they would often appear in successive views, separated by a wide extent of open sea skyline. Viewpoint 1 (**Figure 19.24**) demonstrates that in views from the closest parts of the Welsh coastline to the north, Lundy Island would be visible in a wide, open sea skyline, with the Windfarm Site seen in successive views to the west.

916. Viewpoint 6 (**Figure 19.29**) shows the predicted change to views from Lundy Island. There will be a partial loss of open seascape views to the west of Lundy Island, occupied by the WTGs, and a change in the seascape composition, through the



addition of elements into the simple sea/sky composition and forming a distant focal point, however the WTGs will be located approximately 43.7km from this LCT (at its closest point), and therefore occupy a small portion of the views and relatively small-scale within the large scale, open, expansive and simple seascape, which moderates the magnitude of impact. The WTGs will be seen on and beyond the horizon, viewed as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape, clearly separated from the mainland coast to the north.

917. The Windfarm Site would have little influence on the perception of the island being at the "*mercy of the elements*" and the "*ever-present influence of the sea*" through the introduction of the offshore WTGs and it may be perceived as relating legibly to the exposure and inclement conditions that define this quality. The WTGs may be considered to relate to and convey in their aesthetic and kinetic form, the attributes of wind and seascape; although it may compete with the sense of openness and exposure, adding a perceived limit to part of the offshore view, the fundamental dominance of these characteristics would not be lost.
918. The Windfarm Site has the potential to influence perceptions of tranquillity, remoteness, and a sense of being away from the modern world. The sense of remoteness within this LCT occurs to the north and western seaward edges of the island, away from the settlement to the south, which is also where views of the settled north Devon coast are most widely appreciated. The addition of fixed man-made structures in the seascape setting of the LCT may potentially influence the perceived remoteness by reducing the sense of having a relative lack of human influence, however the degree of change is moderated by its distant location well outside the immediate seascape context, the narrow field of view occupied by the WTGs as part of the wide panoramic seascape and by the presence of a number of other man-made elements that are visible from the LCT which already influence its perceived remoteness, including built form on Lundy Island, and in clear conditions distant views of Hartland Lighthouse, commercial shipping, passenger ferries, and onshore WTGs on the mainland north Devon coast.
919. Landscape character effects are not derived purely as a result of visibility of something that is apparent in views in a single direction from the LCT but are also, in the main, comprised of the pattern of the elements within them, which makes them distinct and recognisable (GLVIA 3, p.157).
920. In this instance it is the inherent pattern of elements in the landscape in question that constitute its key characteristics and where these are strongly defined, as is the case in this LCT, external (visual) influences are less likely to result in a significant effects on landscape character.



921. The magnitude of impact is assessed as **low**.

#### 19.11.1.4 Significance of effect: Construction and Decommissioning

922. **Moderate-minor not significant**, adverse, short-term, and temporary. The Windfarm Site will result in no significant effects to the perceived character of LCT 6: Lundy Island.

#### 19.11.1.5 Significance of effect: Operation and Maintenance

923. **Moderate-minor not significant**, adverse, long term, reversible. To have a significant effect on landscape character within an LCT the visibility of a development beyond the boundary of the geographically defined area would have to occur to such a degree that it would become a defining feature of that landscape which is otherwise characterised by the "*distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse*" as set out in GLVIA3 at p.157.

## 19.12 Potential Landscape Designation and Defined Area Effects – England

### 19.12.1 North Devon Coast Area of Outstanding Natural Beauty (NDCAONB)

#### 19.12.1.1 Baseline and Sensitivity to Change

924. The baseline landscape character of the NDCAONB in the study area is defined by the following LCTs identified in the North Devon & Torrington Local Councils, Devon County Council and Natural England (2010) Joint Landscape Character Assessment for North Devon & Torrington, the location of which are shown on **Figure 19.10**:

- 1B: Open Coastal Plateaux
- 3H: Secluded Valleys
- 1F: Farmed Lowland Moorland and Culm Grassland
- 4D: Coastal Slopes and Combes
- 4H: Cliffs
- 5B: Coastal Undulating Farmland.

925. The high inland plateau landscape of the AONB within the study area encompasses farmed lowland moorland and culm grassland of LCT 1F to the east, which merges within the expansive, coastal open plateau of LCT 1B which occupies much of the landscape to the west of the A39. These areas of exposed land are cut by coastal slopes and combes (LCT 4D); narrow, steep-sided valley landforms that stretch inland

from the coast. Also, by the secluded valley of the Abbey River (LCT 3H). The mainland boundary is formed by steep rock or vegetated cliffs (4H), including spectacular geological formations and rugged coastal landforms. The published assessments note the pressure of climate change on the physical aspects of the landscape, notably the future force for change as a result of sea level rise and its impact on accelerating coastal erosion processes.

926. From the inland farmed lowland moorland and culm grassland plateaux there are open, elevated long views across to inland areas of Dartmoor and Exmoor, and in western areas out to sea and along the Hartland peninsula in which Lundy Island is noted as a particular focus. Views from the secluded valleys are contained and inward looking, other than from the top of the valley sides. The characteristics of the coastal slopes and combes include "*Spectacular views to the sea and dramatic coastal cliffs afforded through gaps in tree cover, and as the combes open out towards the coast.*" And from the cliffs at the mainland edge, extensive and dramatic views reach out to sea (often to Lundy), along the coastline and inland over ridges.
927. Levels of tranquillity and remoteness are noted to increase towards the coast. The influence of recreational, commercial, and industrial land uses and main roads dilute perceptions of tranquillity within the farmland to the east. However, across the coastal open plateau settlement is dispersed, and away from roads it is noted to have very high levels of tranquillity and remoteness, with dark night skies. Across the secluded valleys and coastal slopes and combes the characteristics include high levels of tranquillity, often through the sounds of nature or sea being perceptible. At the coastal edge, the cliffs are described as having a "*wild*" and remote character with high levels of tranquillity, although interrupted by localised factors such as noise intrusion from the Lundy helicopter station on the Hartland coast and near to local roads.
928. Remoteness and views from this landscape are noted as being influenced by distant development, as well as tourist-related development across the open coastal landscape. In this generally open landscape, views of vertical structures stand out on the skyline, notably telecommunications masts and the GCHQ radar station north of Bude, which sits high on the cliff tops to the south. Despite the seclusion gained within the landscape, the pressure of tourism, particularly during summer, is noted to impact on tranquillity and remoteness.
929. An assessment of the magnitude of impact and residual effects arising from the operation and maintenance of the Windfarm on the defined special qualities of the NDCAONB is set out in respect of each special quality that has potential to be impacted, as identified in **Table 19.16**. This assessment of Special Qualities is

informed by the preceding assessments of representative viewpoints and visual receptors in **Section 19.7.1**, in which the Special Qualities are considered. The following assessment of Special Qualities supplements those undertaken in the preceding viewpoint assessments, directly addressing the defined Special Qualities quality set out in the North Devon Coast AONB Management Plan 2019-2024.

930. The effects of the Windfarm Site on the Hartland Heritage Coast is considered as integral to the assessment of the NDCAONB set out this assessment of Special Qualities.
931. The value of the NDCAONB is assessed as **high** (recognised through its designation) and the sensitivity to changes arising from the Windfarm Site is generally **high**. Although there are pockets of the NDCAONB landscape where the baseline conditions are such that the value of particular features or aesthetic dimensions are reduced. While the inherent sensitivity is high, there is some variation in the susceptibility of the different areas/LCTs within the NDCAONB to the specific nature of changes associated with the Windfarm since the assessment of susceptibility to change is tailored to this aspect of the Offshore Project. These assessments of sensitivity are factored into the following assessments of each Special Quality.

#### 19.12.1.2 Special Quality 1 – Distinctive Coastal Scenery

932. Special Quality 1 'Distinctive Coastal Scenery' is described in **Table 19.16**. This Special Quality broadly relates to the open, vast, and undeveloped seascape that provides the setting to the NDCAONB. It also includes the sense of remoteness that can be gained from parts of the coast that lie away from settlement and development, where the exposure to nature becomes heightened, whether through the exposure to inclement weather, or feelings of tranquillity and wildness that come from the relative lack of influence from man-made features. In particular, this Special Quality notes the focus of attention on the dramatic coastal landforms within the NDCAONB
933. The western part of the NDCAONB, around the Hartland Peninsula, is located within the SLVIA study area (**Figure 19.11**). Parts of the AONB to the east would lie beyond the 60km study area, which is considered to be the threshold for potentially significant effects.
934. The construction and decommissioning, and operation and maintenance of the Windfarm Site will result in zero change and not significant effects on the physical characteristics of the NDCAONB, including the "*Atlantic storm waves...twisted strata...exposed rocky cliffs...sprays of surf*" and "*Coastal landforms [which] provide classic examples of erosion and deposition*" which are characteristic features of this landscape, particularly from the cliff landscapes to the west.

935. The Windfarm will, however, result in some changes to the views of the sea. The appearance of the Windfarm amid the undeveloped seascape, and the impact this would have on an appreciation of nature and a perception of timelessness, is the key matter for consideration. The ZTVs (**Figure 19.18** and **Figure 19.9**).
936. ) and the assessment of the relevant MCAs between Higher Sharpnose Point and Windbury Point (MCA 44 and MCA 42) (**Section 19.9**) indicate that the effect of the Windfarm Site will be experienced from relatively long sections of the coastline to the south of Hartland Point, although the offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**), in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
937. The coast is relatively remote, with few roads. The SWCP is the primary means by which the majority of people would most readily appreciate the interaction between the land and sea that is an important component of this Special Quality. There will be visibility from the exposed parts of the western coastline, which may afford prolonged and open views of the sea from this route (**Figure 19.16** and **Figure 19.17**), in which the Windfarm would be appreciated far offshore to the west, perpendicular to the coast. The visibility of the Windfarm will not be a continuous experience from the SWCP, as there will be short sections in combs and valley landforms that afford little or no visibility; however, in the main, views are open and elevated from the cliffs and western extent of the Culm plateau. Nonetheless, the findings of the assessment on the SWCP within the NDCAONB (**Section 19.7.12** and **19.7.13**) find that receptors would not be significantly effected.
938. The viewpoint assessments undertaken in **Section 19.7.1** from representative locations at Viewpoint 2 (**Figure 19.25**) and Viewpoint 10 (**Figure 19.33**) from parts of the western coastline of the NDCAONB (on the SWCP) with views of the Windfarm Site, indicate that the features that contribute to the 'Distinctive Coastal Scenery', including the "*seemingly infinite expanse of ocean*" will not be significantly effected. The offshore WTGs are sufficiently distant, small scale and narrow in lateral extent, that the panoramic and wide-open views to the sea are retained and will not notably change this aspect of the Special Qualities, which will continue to be definitive the visual amenity experienced. However, the introduction of floating, man-made structures into the seascape may reduce the sense of "*raw nature devoid of human influence*" seen offshore and "*sense of wilderness*" gained within this relatively remote section of coastline. The degree of change is moderated by the distant location of the Windfarm Site, well outside the immediate seascape context, and by the presence of a number of other man-made elements that are visible from the coastline which already influence its perceived remoteness, including the GCHQ radar

station north of Bude, the Hartland radar tower, lighthouse and coastguard station at Hartland Point, tourism development along the coast, and the more distant influence of settlement at Bude to the south. Offshore, in clear conditions, it is also possible to gain distant views to lighthouses and built form on Lundy Island to the north, and commercial shipping across the vast seascape. From more distant parts of the NDCAONB, inland, the influence of the Windfarm Site would be reduced, as shown on the wireline from Bursdon Moor (see **Appendix 19.C**).

939. In respect of all areas of the NDCAONB within the study area, the Windfarm Site is located at long or very long distance, at a minimum range of 52.7km, resulting in no direct effects to the coast, with only indirect changes to the perceived seascape setting of the coast, through the addition of horizon development on the sea skyline, being relatively small in scale and occupying a small HFoV within the large scale, open, expansive and simple seascape, which moderates the magnitude of impact on the 'Distinctive Coastal Scenery' experienced.
940. On balance, factoring in these considerations, and acknowledging the frequency over which it might be experienced (see **Section 19.4.5** and **Figure 19.20**), the impact during construction and decommissioning and the operation and maintenance of the Windfarm Site on this Special Quality is assessed as **low** magnitude. Resulting in **moderate-minor not significant** adverse level of effect. The 'Distinctive Coastal Scenery' will fundamentally remain present and continue to be experienced in the context of the Windfarm Site.

#### 19.12.1.3 Special Quality 2 – A Landscape and Seascape of High Visual Quality

941. Special Quality 2 'A Landscape and Seascape of High Visual Quality' is described in **Table 19.16**. This Special Quality relates to the nature and availability of views gained from the NDCAONB, including panoramic and elevated views across rolling countryside, framed sea views from combes, and wide and coastal vistas to Lundy Island framed by the distant Welsh coast. It also places emphasis on the long views along the coast across the Taw-Torridge estuary and inland to undeveloped skylines and downland.
942. The western part of the NDCAONB, around the Hartland Peninsula, is located within the SLVIA study area (**Figure 19.1**). Parts of the AONB to the east, including Inner Bideford Bay and the Taw-Torridge estuary, would lie beyond the 60km study area, which is considered to be the threshold for potentially significant effects.
943. The construction and decommissioning, and operation and maintenance of the Windfarm will result in zero change and not significant effects on the inland countryside which *"forms an important backdrop to the coast and is a defining*

*element to the visual quality of the AONB providing a variety of open views."* The location of the Windfarm offshore, far to the west of the NDCAONB means that there would be very limited opportunity for the offshore WTGs to appear in the "*views [north]...framed by intimate distant views of the Welsh coast*".

944. Regarding "*the coastal vistas across to Lundy are wide and empty*" within the study area the Hartland peninsula coastline is aligned broadly north-south, with Lundy Island appearing in views to the north and north-west. In these views, as represented by Viewpoint 2 (**Figure 19.25**) and Viewpoint 10 (**Figure 19.33**), the Windfarm Site would appear in a different sector of the view to the west, therefore while it would be visible in successive views it would not introduce any built elements into the specific coastal views gained in this part of the NDCAONB towards Lundy Island.
945. The Windfarm will, however, result in some changes to the views of the sea from this part of the NDCAONB, which is the key matter to be considered. The assessments of the relevant MCAs, between Higher Sharpnose Point and Windbury Point (MCA 44 and MCA 42) (**Section 19.9**) and the assessment of the SWCP (**Section 19.7.12** and **19.7.13**) indicate that the impact of the Windfarm will be experienced from relatively long sections of the coastline to the south of Hartland Point. There will be visibility from the exposed parts of the western coastline, which may afford constant views of the sea from elevated and open locations, as well as in framed views from the more intimatecombe landscapes, albeit these would be less frequently experienced, in which the Windfarm Site would be appreciated far offshore to the west. Because of the orientation of this coastline, broadly north-south, and the location of the Windfarm Site far offshore to the west, the "*long views along the coast across the estuary and inland to the undeveloped skyline and downland*" would be unchanged, with the Windfarm Site seen in successive views away from the coastline and out to sea.
946. The viewpoint assessments undertaken in Section **19.7.1** from representative locations at Viewpoint 2 (**Figure 19.25**) and Viewpoint 10 (**Figure 19.33**) from parts of the western coastline of the NDCAONB with views of the Windfarm Site, indicate that the WTGs are sufficiently distant, small scale and narrow in lateral extent (**Figure 19.6**), that the availability of the panoramic and wide-open views, as well as framed views, to the sea are retained and the perceived change to the composition of these views will not notably change this aesthetic aspect of the landscape and seascape.
947. The effects of the Windfarm on views from the NDCAONB has been assessed in detail in **Section 19.7.1**, which has found changes of no greater than low magnitude on views from viewpoints and the SWCP within the designated area. In respect of all



areas of the NDCAONB within the study area, the Windfarm Site is located at long or very long distance, resulting in no direct effects to the coast, with only indirect changes to the perceived seascape setting of the coast, through the addition of horizon development on the sea skyline, being relatively small in scale and occupying a small HFoV within the large scale, open, expansive and simple seascape, which moderates the magnitude of impact on the 'Landscape and Seascape of High Visual Quality' experienced.

948. On balance, factoring in these considerations, the impact of the Windfarm Site on this Special Quality is assessed as **low** magnitude. Resulting in **moderate-minor not significant** adverse level of effect. The Special Quality will fundamentally remain present and continue to be experienced.
949. Overall, the potential impacts on the Special Qualities for which the NDCAONB has been designated have been taken into consideration and significant adverse effects on the designated landscape have been avoided. The distinctive coastal scenery of the landscape will remain, and significant effects on the landscape and seascape of high quality are avoided due to the distance of the Windfarm Site far outside the NDCAONB. The Windfarm Site will not significantly effect seascape character, landscape character, quality, or diversity, including the Special Qualities of the NDCAONB.

### 19.12.2 Cornwall Area of Outstanding Natural Beauty (CAONB)

950. An assessment of the magnitude of impact and residual effects arising from the operation and maintenance of the Windfarm on the defined Special Qualities of the AONB is set out in respect of each section of the CAONB that has potential to be impacted, as identified in **Table 19.17**. This assessment of Special Qualities is informed by the preceding assessments of representative viewpoints and visual receptors (**Section 19.7.1**). Relevant LCAs within the CAONB are identified in the description of the baseline for each local section.
951. The following assessment of Special Qualities supplements those undertaken in the preceding viewpoint assessments, directly addressing the defined Special Qualities set out in the Cornwall AONB Management Plan 2022-2027.
952. The effects of the Windfarm on the Hartland (Cornwall) Heritage Coast and Pentire to Widemouth Heritage Coast are considered as integral to the assessment of the CAONB set out in this assessment of Special Qualities.
953. The value of the CAONB is **high** (recognised through its designation) and the sensitivity to changes arising from the Windfarm is generally **high**. Although there



are pockets of the CAONB landscape where the baseline conditions are such that the value of particular features or aesthetic dimensions are reduced, the CAONB is, as a whole, of high value. While the inherent sensitivity is high, there is some variation in the susceptibility of the different areas/LCTs within the CAONB to the specific nature of changes associated with the Windfarm since the assessment is of susceptibility of the CAONB to the proposed development. The assessments of sensitivity are factored into the following assessments of the Special Qualities of each local section of the CAONB.

#### 19.12.2.1 CAONB Section 01: Hartland (Marsland to Menapoint Church)

##### 19.12.2.2 Baseline and Sensitivity to Change

954. The location of this section of the CAONB is shown on **Figure 19.11**. It extends from the boundary with Devon to the north, to just above Bude to the south.
955. The baseline landscape character of the CAONB in the study area is defined by the following LCTs, shown on **Figure 19.10**:
- CA37: Western Culm Plateau
  - CA38: Bude Basin.
956. The majority of this part of the CAONB, from the boundary with Devon in the north, to Stibb in the south, is characterised by the western Culm plateau, CA37. Further south, as far as Menachurch, the landscape transitions to the Bude Basin, CA38.
957. The inland landform of this part of the CAONB is defined by the high inland plateau, which ends at dramatic high cliffs along the coastal edge. The elevated coastline contains numerous unusual rock formations and "*curious*" headlands and unstable cliff slopes which are noted to give a "*particularly geological character*." The plateau is a simple landscape, predominantly in use as improved grassland / pasture, with woodland cover mostly confined to the steep valleys that dissect the plateau. The contrast between the intricacy of geological features and the simplicity of the inland landscape is a key characteristic of the landscape character of this part of the CAONB. Further south, the elevated plateau meets the northern fringes of the Bude basin, where the landform gradually loses elevation to the south, beyond the COANB boundary, to a straight coastline of low, unstable cliffs and long sandy beaches.
958. The landform characteristics within the central and northern parts of the CAONB afford the opportunity for varied "*dramatic*" views. From elevated locations and ridgelines across the plateau, wide views can be gained across the surrounding landscape, including to "*significant*" landmarks which are noted as the Kilkhampton

Church and the "*distinctive and contrasting*" GCHQ radar station to the north of Bude. From the high cliffs, there are vistas across the coastal heaths, dark cliffs, and inland valleys. To the south of the Hartland section of the CAONB, the settled lowland exerts greater influence on views, including tourism influences and the expansion of settlement at Bude which is described as detracting from the aesthetic and sensory qualities of the landscape.

959. The construction and decommissioning, and operation and maintenance of the Windfarm will result in zero change and not significant effects on the physical characteristics of Section 01: Hartland of the CAONB, including the "*sheer cliffs...rock stratum of folded and faulted ridges...[and] shores...punctuated occasionally by sand covers and beaches at the mouths of stream valleys*" and "*the dramatic coastal cliffs and unusual rock formations which together with its ancient history, provides an interesting and unique landscape.*"
960. The Windfarm will, however, result in some changes to the "*breathhtaking and extensive*" views from this part of the CAONB, which is the key matter to be considered. The assessment of the adjoining seascape MCA 44 (**Section 19.9.4**), and the assessment of the SWCP (**Section 19.7.12** and **19.7.13**), indicate that the effect of the Windfarm will be experienced from relatively long sections of the CAONB, although the offshore WTGs will occupy a narrow portion of the HFoV (**Figure 19.6**), in which the vast majority of open sea skyline and coastline will be retained and remain unchanged.
961. The coast is relatively remote, sparsely populated, and with few roads. The SWCP is the primary means by which the majority of people would most readily appreciate this local section of the CAONB. There will be visibility from the exposed parts of the western coastline, which may afford prolonged and open views of the sea from this route (**Figure 19.16** and **Figure 19.17**), in which the Windfarm would be appreciated far offshore to the west, perpendicular to the coast. The visibility of the Windfarm Site will not be a continuous experience from the SWCP, as there will be short sections in combs and valley landforms that afford little or no visibility; however, in the main, views are open and elevated from the cliffs and western extent of the Culm plateau. Nonetheless, the findings of the assessment on the SWCP within the CAONB (**Section 19.7.13**) find that receptors would not be significantly effected.
962. The assessment of Viewpoint 3 (**Figure 19.26**) undertaken in **Section 19.7.1** from the western coastline of Section 01 of the NDCAONB with views of the Windfarm Site indicates that the offshore WTGs are sufficiently distant, small scale and narrow in lateral extent, that the availability of the "*views along the coastline [which] are breathtaking and extensive*" will not notably change this aspect of the Special

Qualities. Because of the orientation of this coastline, broadly north-south, and the location of the Windfarm Site far offshore to the west, the "*views southwards towards Bude*" would be unchanged, whilst the views "*on a clear day to Lundy Island...seen out to the north-west*" would also remain, with the Windfarm Site seen in successive views away from the coastline and out to sea in distant offshore waters to the west.

963. In respect of all parts of Section 01 of the CAONB within the study area, the Windfarm is located at long or very long distance, resulting in no direct effects to the coast, with only indirect changes to the perceived seascape setting of the coast, through the addition of horizon development on the sea skyline, being relatively small in scale and occupying a small HFoV within the large scale, open, expansive, and simple seascape, which moderates the magnitude of impact.

964. The ZTVs (**Figure 19.5** and **Figure 19.6**) show that visibility of WTGs would be limited in areas set back from the immediate coast with large areas of the CAONB having no theoretical visibility at all. In actuality, visibility would be further reduced inland by features such as vegetation, notably hedges, and buildings. This would be experienced particularly from locations where people may be travelling inland such as along minor roads which are characteristically lined with high hedges on embankments.

965. On balance, factoring in these considerations, the impact of the Windfarm Site on this Special Quality is assessed as **low** magnitude. Resulting in **moderate-minor not significant** adverse level of effect. The Special Qualities of Section 01: Hartland (Marsland to Menapoint Church) will fundamentally remain present and continue to be experienced in the context of the Windfarm Site.

#### 19.12.2.3 CAONB Section 02: Pentire Point to Widemouth

#### 19.12.2.4 Baseline and Sensitivity to Change

966. The location of this section of the CAONB is shown on **Figure 19.11**. It extends from Widemouth to the north, to Pentire Point to the south.

967. The baseline landscape character of the CAONB in the study area is defined by the following LCTs, shown on **Figure 19.10**:

- CA34: Camel Estuary
- CA35: Kellan Head to Millook Haven Coast
- CA36: Delabole Plateau
- CA37: Western Culm Plateau
- CA38: Bude Basin.

968. The majority of the coastal edge within this part of the COANB is defined by CA35: Kellan Head to Millook Haven Coast. The Delabole Plateau (CA36) provides the inland setting to the coastline within the study area. At the northern extent of this section of the CAONB, the landscape transitions to parts of CA37 Western Culm Plateau and CA38 Bude Basin; at the southern extent, the landscape transitions to CA34: Camel Estuary.
969. The coastal landscape of CA35 contains the highest cliffs in Cornwall at 240 m AOD at its north-eastern extent and some of the most indented and complex with cliffs, promontories, inlets, coves, islands, and stacks, and small incised valleys that run at right angles to the coast, all of which are some of the defining features and characteristics of this section of the COANB. The coastline is backclothed by the elevated, undulating Delabole Plateau, which forms the sweeping inland skyline ridge. To the north of this section of the CAONB, the Delabole Plateau extends to the coast at Tresparrett Down, where the landform begins to fall away from the Culm Plateau to Bude Basin. To the south-west the cliffs are around 80 m AOD, before dropping to meet the sea at Hayle Bay at the mouth of the Camel Estuary.
970. Land use across much of this part of the CAONB is dominated by improved grassland / pasture, with some arable to the south. Exposure to the sea and the elevated landform means that tree and hedgerow growth is limited. This results in a landscape of open hillsides and cliffs, with *"breathtaking"* views available from CA35: Kellan Head to Millook Haven Coast and the *"dramatic vistas"* from the high cliffs of CA37: Western Culm Plateau. Inland, the visual qualities of the Delabole Plateau landscape are noted as being influenced by onshore windfarms, dairy factory and forestry, which combine to create an *"unsettled feeling of a slightly degraded landscape,"* whilst to the north the aesthetic and sensory characteristics of the coastal lowland landscape of CA38 Bude Basin is described as being *"spoilt by tourism development and by expansion of Bude"*.
971. The operation and maintenance of the Windfarm will result in zero change and not significant effects on the physical 'key landscape characteristic' of Section 02: the coastline. This includes the *"craggy...dramatic contorted cliffs and folded slates, shales, and volcanic rocks with some sandstone...interesting coastal features such as rocky stacks, arches, headlands, caves and blowholes interspersed with rocky coves and a few sandy beaches."* Nor will it impact the *"undulating coastal plateau...incised with steep sided secluded valleys and streams.."* The Windfarm would result in zero change to the perceptual characteristic of the *"microclimate of the sheltered valleys...in sharp contrast to the open farmland exposed to the strong sea winds on the coastal plateau.."*

972. The assessment of Viewpoint 5 (**Figure 19.28**), Viewpoint 8 (**Figure 19.31**), and Viewpoint 9 (**Figure 19.32**), undertaken in **Section 19.7.1** from the coastline of Section 02: Pentire Point to Widemouth of the NDCAONB with views of the Windfarm, demonstrate that the interest provided by geological features, will not be significantly effected as a result of views of the Windfarm, which will be clearly separated from the coast by large areas of intervening seascape such that the perceived Special Qualities will not notably change and will continue to be definitive to the visual amenity experienced.

973. On balance, factoring in these considerations, the impact of the Windfarm on the Special Qualities of CAONB Section 02: Pentire Point to Widemouth is assessed as **low** magnitude. Resulting in **moderate-minor not significant** level of effect. The Special Qualities of this local section of the CAONB will fundamentally remain present and continue to be experienced.

#### 19.12.2.5 CAONB Section 04: Carnewas to Stepper Point

#### 19.12.2.6 Baseline and Sensitivity to Change

974. The location of this section of the CAONB is shown on **Figure 19.11**. It extends from Constantine Bay to the west, to Harbour Cove to the east.

975. The baseline landscape character of the CAONB in the study area is defined by the following LCTs, shown on **Figure 19.10**:

- CA19: Trevoze Head and Coastal Plateau
- CA34: Camel Estuary.

976. The majority of this local section of the CAONB within the study area is characterised by CA19: Trevoze Head and Coastal Plateau. The western side of the Camel Estuary, to the east of this section of the COANB, falls within CA34: Camel Estuary.

977. The exposed, coastal landscape is described as having a "*variety of interest reflecting its local geology in landform and vernacular architecture.*" The large-scale cliffs and coastal plateau include the prominent headlands of Trevoze Head and Stepper Point, separated by a complex series of bays and gentle coves along the north-facing coast. The variety in CA19 is complemented by the transition to low cliffs, dunes, beaches, and the gently sloping and undulating valley sides to the Camel estuary in CA34 to the east.

978. This part of the CAONB is described as open and exposed with very few trees. Land use along the coast and inland includes leisure and tourism facilities, golf

courses, holiday villages, and caravan sites, with improved grassland and pasture and some arable with patches of rough grassland. Large settlements are present on the valley sides of the Camel estuary, including Polzeath, Padstow, and Rock. This section of the COANB is popular with visitors, which influences perceptual characteristics of tranquillity and wildness. However, the north-facing coast and headlands are noted to experience the *“full force of the Atlantic”* which contributes somewhat to a sense of *“wild nature”*.

979. The description of views from CA19 note the *“magnificent...panoramic views inland and along the coast”* gained from Trevoze Head and Stepper Point, and of the estuary landscape of CA34 to the east in which *“long sweeping views are seen against the green, simple, rolling rural backcloth of the valley sides”*.

980. The operation and maintenance of the Windfarm will result in zero change and not significant effects on the physical ‘key landscape characteristic’ of Section 04: the varied coastal scenery. This includes the *“hard greenstones, which form the elevated headlands as seen at Trevoze Head and Stepper Point. The more easily eroded slates and shales back the bays and coves between the headlands as can be seen at Harlyn Bay, Trevone, Treyarnon and Mother Ivey’s Bay... extensive coastal sand dunes at Constantine Bay. At Stepper Point...further sand dunes at Tregirls Beach, forming the western side of the expansive mouth of the Camel Estuary...contrast to the imposing and iconic cliffs at Bedruthan Steps with its craggy rock stacks”*

981. The perceptual quality of *“peaceful and wild nature”* is reflected by the *“modest”* character of Harlyn Bay, which contrasts to the open, exposed headlands and busy tourism and recreational activity found across this part of the CAONB. The addition of floating man-made structures in the wider seascape setting of these areas of the CAONB may potentially influence the perceived remoteness by reducing the sense of having a relative lack of human influence, however the degree of change is moderated by its distant location well outside the immediate seascape context, and by the presence of a number of other man-made elements that are visible along this section coastline, and already influence is perceived peacefulness and wild nature, including settlement, tourism development, recreational development, and the animation of boats along the Camel estuary.

982. The assessment of Viewpoint 9 (**Figure 19.32**), which lies in Section 02 of the CAONB, but in close proximity to Carnewas to Stepper Point, indicates that the features that contribute to the coastline, including the interest provided by geological features, will not be significantly effected as a result of views of the Windfarm Site, which will be clearly separated from the coast by large areas of intervening seascape



such that the perceived Special Qualities will not notably change and will continue to be definitive to the visual amenity experienced.

983. On balance, factoring in these considerations, the impact of the Windfarm on the Special Qualities of CAONB Section 04: Carnewas to Stepper Point is assessed as **low-negligible** magnitude. Resulting in **minor not significant** adverse level of effect. The Special Qualities of the CAONB will fundamentally remain present and continue to be experienced in the context.

984. Overall, the potential impacts on the Special Qualities for which the CAONB has been designated have been taken into consideration and significant adverse effects on the designated landscape have been avoided. The distinctive coastal scenery, and the aesthetic and perceptual characteristics of the landscape will remain, and significant effects on the views gained from Section 01: Hartland (Marstrand to Menapoint Church), Section 02: Pentire Point to Widemouth, and Section 04: Carnewas to Stepper Point of coastline are avoided due to the distance of the Windfarm Site far outside the CAONB. The Windfarm will not significantly effect the seascape character, landscape character, quality, or diversity, including the Special Qualities of the CAONB.

## 19.13 Potential Landscape Designation and Defined Area Effects – Wales

### 19.13.1 Pembrokeshire Coast National Park (PCNP)

#### 19.13.1.1 Baseline and Sensitivity to Change

985. The baseline landscape character of the PCNP within the study area has been defined using the landward extent of the SCAs identified in the 2013 Pembrokeshire Seascape Character Assessment, since the inland boundaries of SCAs include land which has a strong visual relationship with the sea/tidal waters and coastal landscape character types such as dunes or cliffs. The location of relevant SCAs are shown on **Figure 19.9**, and includes:

- SCA 26: Skokholm and Gateholm coastal waters
- SCA 31: Outer Milford Haven
- SCA 32: Inner Milford Haven
- SCA 34: Freshwater West
- SCA 35: Castlemartin coastal waters
- SCA 36: Stackpole coastal waters.



986. Within the study area, the PCNP includes the remote island of Skokholm and the coastal island of Gateholm, which are characterised as part of the south-west facing, rocky, indented eroding coast and western half of the Dale peninsula (SCA 26). The landform of these areas is noted to comprise distinctive cliffs and rock formations with cliffs reaching around 50 m. Skokholm is a flat-topped island, while Gateholm has craggy cliffs. The Dale peninsula is a gently undulating plateau. Landcover on the Dale peninsula includes both pasture and arable agriculture, with a prevailing rectilinear field pattern. Skokholm's landcover includes coastal grasslands, whilst that of Gateholm is predominantly rough grassland. The aesthetic, perceptual and experiential qualities of Skokholm noted in the SCA description are defined by its isolated, wild, and highly exposed character, which is emphasised by the disturbed waters, tidal race, and rocky shores. Similarly, the Dale peninsula is characterised as bleak, and its west-facing orientation exposes it to the crashing of waves in rough seas. Across this part of the PCNP, it is noted that there is a high degree of naturalness, remoteness and tranquillity along the sea edges and islands. However, human influences are notable through commercial ships entering Milford Haven to the south and east and the busy coastal cruising routes linking Milford with Skomer, recreational offshore watercraft for angling is described as popular around Skokholm, though there are only a small number of visitors to the island itself, and similarly kayaking activity occurs around Gateholm closer to the mainland. A notable feature is Skokholm's Trinity House lighthouse.
987. To the east of SCA 26, the landform encompasses steep sandstone cliffs and small indented bays at St. Ann's Head and parts of the Angle Peninsula, to the west and east of Milford Haven, respectively. A series of low hills enclose the Haven to the south of Angle, stretching to the west-facing Freshwater West, and round to Linney Head. In parts of SCA 34 where the hills meet the coast, they are noted to form irregular, steep cliffs with fallen rocks at the back of beaches. Around Freshwater West are extensive, sweeping beaches and areas of dunes. Further east, around Castlemartin (SCA 35) the coastal landform is characterised by rocky headlands along a relatively straight coast with steep vertical cliffs and spectacular erosional features, 'Elegug Stacks' (Stack Rocks) and the sea arch at the 'Green Bridge of Wales'. The coast at Castlemartin is backed by an undulating plateau further inland. At the easternmost extent of the PCNP within the study area, is the rocky headland from S. Govan's Head to Stackpole Quay (SCA 36), which is described as being bounded by steep to vertical coastal cliffs. The headlands fall away to bays at the mouth of the valley at Broad Haven, which is noted for its sandy shores and high dunes. To the north of Broad Haven is Stackpole Warren, which comprises a plateau of wind-blown sand on the edge of high limestone sea cliffs.

988. On eastern parts of the Dale peninsula the landcover is mixed farmland of arable and pasture with low cut hedgebanks and fencing in medium-sized semi-regular fields. Around SCA 31 and SCA 32, cliff areas comprise a mosaic of rough pasture and scrub. Along the Angle peninsula coast to Freshwater West (SCA 34), varied landcover is noted to include fens, reedbeds, purple moorgrass and rush pastures, and grassland. Across Castlemartin, landcover encompasses semi-natural habitats including dry heathland, grassland, neutral grassland, lowland heathland, cliffs, rocky and sandy shores. To the east, within SCA 36, coastal grassland extends onto Stackpole Head and along the cliff edges to the north and south. Behind this there are pastoral fields with low field boundaries with trees and scrub limited to the more sheltered valley sides.
989. The combination of landform and landcover characteristics of this coastal part of the PCNP often gives rise to wide views. To the west, within SCA 26, large-scale, wide panoramic views are noted to be possible from many locations. While at Freshwater West wide, open views and exposure are gained from higher ground and dune tops, framed by the north and east edges of the bay, with long views noted to St. Ann's Head and beyond to Skokholm in the west. From landward parts of SCA 35 and SCA 36, the character descriptions note panoramic views from the coastal plateau at Castlemartin and St. Govan's Head, affording views along the coast, and with very wide, exposed and "*uninterrupted and unspoilt*" sea views to the south, which in clear conditions can encompass views to Lundy Island and the north Devon coast. Around St. Ann's headland and Rat Island, from inner parts of the Haven (SCA 21) and Broad Haven (SCA 36), views can be framed by landforms. In parts of the PCNP closer to Milford Haven, within SCA 31 and SCA 32, certain views inland are set against the distant refineries seen inland. Structures at St. Govan's Head are noted as detractors in views from SCA 36. Commercial shipping bound for Milford Haven is a common feature in views from this part of the PCNP, providing a transient focus to seaward-facing views.
990. Regarding human influence on the landscape character, Milford Haven is a common cultural influence on this part of the PCNP. It is described as "*the fourth busiest waterway in the British Isles.*" Consequently, commercial shipping activity, recreational watercraft, the lighthouse at St. Ann's Head and commercial navigational lights, marks and buoys characterise views from the coastal landscape, noted particularly in SCA 31 and SCA 32. Inland, the Port of Milford, and specifically the tall refinery chimneys and structures and the power station stacks are visible from long distances. The character description notes the influence of these features are added to by onshore wind turbines and storage tanks and at night the lighting on the tall chimneys. This is noted to create a strong contrast between rural, natural, and

tranquil areas of the coast, and those of the inner harbours of the Haven influenced by these developed features. Further east, within eastern parts of Freshwater West (SCA 34) and the coast at Castlemartin (SCA 35), landscape character is influenced by the extensive MOD firing range, with the periodic noise of gunfire noted as being discordant and intrusive; although when absent a sense of wildness and remoteness is enhanced – particularly given the absence of settlement and public access to this part of the coast. On the easternmost parts of the PCNP (SCA 36), east of Manorbier - beyond the intrusion of the firing ranges - human influence is mainly through recreational activity, including walking, climbing, kayaking, sailing cruising, and commercial fishing offshore, with more tranquil areas found away from tourist facilities such as car parks and beaches.

991. An assessment of the magnitude of impact and residual effects arising from the construction and decommissioning, operation and maintenance of the Windfarm on the defined special qualities of the PCNP is set out in respect of each Special Quality that which is susceptible to change from the introduction of the Offshore Project, as identified in **Table 19.18**. This assessment of Special Qualities is informed by the preceding assessments of representative viewpoints and visual receptors (in **Section 19.7.1**) and seascape receptors (**Section 19.10**). In these sections, the effects on Special Qualities evident from representative Viewpoint 1: Stack Rocks, and the PCNP are assessed, as well as the residual effects on the perceived qualities where relevant to MCAs. The following assessment of Special Qualities supplements these assessments, directly addressing the defined Special Qualities in the citation for each special quality set out in the Background Paper: Special Qualities of PCNP (PCNPA, 2019).
992. The effects of the Windfarm Site on the Marloes and Dale Heritage Coasts are considered as integral to the assessment of the PCNP set out this assessment of Special Qualities.
993. The value of the PCNP is **high** (recognised through its designation as a National Park) and the sensitivity to changes arising from the Windfarm is generally **high**. While the inherent sensitivity is high, there is some variation in the susceptibility of the different MCAs within the PCNP to the specific nature of changes associated with the Windfarm Site since the assessment of susceptibility to change is tailored to the Windfarm Site. The assessments of sensitivity are factored into the following assessments of each PCNP Special Quality.

### 19.13.1.2 Special Quality 1 - Coastal Splendour

994. Special Quality 1 'Coastal Splendour' is described in **Table 19.18**. It broadly relates to the splendour of the PCNP coastline, its dramatic scenery, and rugged, unspoilt beauty, which provide a scenic quality that was recognised in its designation as a National Park.
995. **Figure 19.11**, **Figure 19.18** and **Figure 19.19** show the extent of the PCNP within the 60km study area and the geographic extent of theoretical visibility of the offshore WTGs. Parts of the PCNP located outside the SLVIA study area, where theoretical visibility will be very distant, or areas of the PCNP within 60km of the Windfarm with zero theoretical visibility, will result in zero change to the coastal splendour and its Special Qualities will not be impacted.
996. The 'southern coast' of the PCNP is the relevant section of coastline within the SLVIA study area (**Figure 19.11**), from the Angle Peninsula in the west, Freshwater West, Castlemartin, and as far as St Govan's Head and Stackpole in the east.
997. The Windfarm Site will not result in any direct changes to the geology of the *"sheer cliffs punctuated by sheltered coves, stacks, arches, swallow holes and blow holes, etched out of the cliff face"* that underpins its Special Qualities. The Windfarm Site will, however, result in some changes to the perceived character of the *"breathtaking landscape along this coast"* that results in the special quality of coastal splendour.
998. From St. Ann's Head and the Angle Peninsula, the wide sea views to the south will be partially changed through the introduction of the offshore WTGs on the sea skyline competing with existing focal points and influencing the contrast between the more rural landscape inland and open expanse of seascape to the south. However, the ZTV (**Figure 19.4** and **Figure 19.5**) shows that visibility of WTGs would be very limited in areas set back from the immediate coast with large areas of the PCNP having no theoretical visibility at all. From Freshwater West, the wide and partially framed views to the south edges of the bay, will be partially changed through the addition of the Windfarm Site into the simple sea/sky composition, clearly separated from the mainland coast by expansive areas of intervening seascape and the long views west to St Ann's Head and beyond to Skokholm will be retained. From Castlemartin, the very wide sea views between Govan Head and Elegug Stacks will be partially changed through the introduction of WTGs on the sea skyline in the backdrop to the south, from this south facing coast. The WTGs would, however, occupy a very narrow horizontal extent in such views, as shown in **Figure 19.6**. Southerly views across the cliffs, arches, stacks out to sea (the *"breathtaking landscape"*) and long views to Lundy Island and Devon to the south-east, on clear days, will not be impacted by the

Windfarm, since it would be located perpendicular to the coast, and seen in successive views separate from these natural focal points.

999. In respect of all areas of this South Pembrokeshire coast, the Windfarm Site is located at long or very long distance from the *"breathtaking landscape along this coast"*, resulting in no direct effects to the coast, with only indirect changes to the perceived seascape setting of the coast, through the addition of horizon development on the sea skyline, being relatively small in scale and occupying a small HFoV (**Figure 19.6**) within the large scale, open, expansive and simple seascape, which moderates the magnitude of impact on the 'coastal splendour' experienced.

1000. On balance, factoring in all of these considerations and the geographic areas impacted, the impact of the Windfarm on the 'coastal splendour' special quality of the PCNP displayed through the *"constant sight of the sea"* and *"breathtaking landscape"* is assessed as **low-negligible** magnitude and **moderate-minor not significant** adverse level of effect. The 'coastal splendour' will fundamentally remain present and continue to be experienced in the context of the Windfarm Site.

#### 19.13.1.3 Special Quality 3 - Diversity of Landscape

1001. Special Quality 3 'Diversity of Landscape' is described in **Table 19.18**. It relates to the diversity between the *"coastal nature of much of the National Park"* and the *"rural National Park"*, in which the *"varied landforms"* are *"overlaid by millennia of activity by man"* and *"impart a rich texture to the open landscape"* and consist of *"farmland landscape and traditional built forms"*, which *"contribute strongly to the sense of place"*.

1002. The Windfarm is located far offshore and will not result in any direct changes to the landforms or land use that underpins this Special Quality and creates its diversity of landscapes. There will also be no direct changes to the diversity of landscapes of the PCNP, expressed through its hedgebanks, field pattern, small woodlands and built forms, which will all fundamentally remain definitive to its character and diversity, regardless of the presence of Windfarm Site. The ZTV (**Figure 19.4** and **Figure 19.5**) shows that visibility of WTGs would be very limited in areas set back from the immediate coast with large areas of the PCNP having no theoretical visibility at all. The physical features of the PCNP's diverse landscapes will not be changed, however there may be changes to specific aesthetic/perceptual aspects of the *"coastal nature"* of the PCNP evident in views offshore. These are visual qualities, relating to the diversity in views (visual diversity), and are not related to *"landscape fabric"* of the PCNP. The special qualities which relate to the identified residual effects are those

where the indicator relates to, or is supported by, an aspect concerning the visual contribution made by seascape to the diversity of the PCNP.

1003. Residual effects on such visual diversity tend to be concentrated only in areas where the diversity of landscape is appreciated, from viewpoints where both the "*rural National Park*" and the "*coastal National Park*" can be seen, in juxtaposition. This often excludes seascapes at the immediate coastal edge, which afford direct views from the coastline to the open sea, in which the rural National Park further inland from the coast, is often not apparent. Since so little of the PCNP is visible from parts of the National Park within the study area, and indeed large parts fall within the infrequently accessible MOD firing ranges at Castlemartin, the opportunity to experience this diversity from a single location is very limited.

1004. The pattern and diversity of the PCNP landscape experienced in such views would not change, however the Windfarm will add a new, additional element in the wider seascape setting of the coastal edge of the PCNP. Although the introduction of modern, man-made artefacts could be construed as being contrary to the rural farmland, traditional buildings, and pattern of the onshore landscape within the study area, it could also be perceived as adding to the diversity of the setting, forming a contemporary response to modern energy needs within the wider activities of man that have influenced the landscape over time. From elevated locations inland, the Windfarm would form an association with existing WTG influence, since in the wider context outside of and to the north of the PCNP, other WTGs, energy generation and transmission infrastructure around Milford Haven are already present in the landscape, rather than an entirely new influence.

1005. On balance, factoring in these considerations and the geographic areas impacted, the impact of the Windfarm Site on the 'diversity of landscape' of the PCNP is assessed as **low** magnitude and **moderate-minor not significant** effect. The 'diversity of landscape' will fundamentally remain present and continue to be experienced in the context of the Windfarm Site. The introduction of the Windfarm Site would therefore not result in a significant adverse effect the 'diversity of landscape' of the PCNP but instead is likely to further the diversity of influences and elements, in the marine setting of the PCNP.

#### 19.13.1.4 Special Quality 8 - Islands

1006. Special Quality 8 'Islands' is described in **Table 19.18**. Only the southernmost extent of Skokholm Island falls just within the SLVIA study area, **Figure 19.11**. The "*spectacle of the islands*" off the PCNP coast arise due to their dramatic volcanic geology, the success of the islands breeding bird colonies, their historical and



archaeological significance, and the resulting *"sense of place and feeling of remoteness"*, with *"outstanding visual and landscape scenery"*.

1007. The Windfarm Site is located far offshore. There will be no direct changes to the physical landscapes of the islands, which will remain definitive to its character and spectacle. However, there may be changes to specific aesthetic/perceptual aspects of the seascape setting of the islands and their scenery, in views of the islands from the mainland coast, and in views from the islands to the open seas and offshore waters. These are visual qualities, relating to the visual scenery, and the resulting perceptions of sense of place. In the vicinity of Skokholm Island, **Figure 19.4** illustrates that the Windfarm visibility would be extremely limited with only WTG blades visible from the seascape around the Island.

1008. There will be some changes to the composition of the seascape arising in these views from the mainland as a result of the Windfarm, as identified in the assessment of views and visual receptors in **Section 19.7.1** which has identified and assessed in detail, Viewpoint 1 (**Figure 19.24**).

1009. Although the addition of man-made elements in its wider seascape context may potentially influence the perceived remoteness of the islands, the WTGs have a form that relates rationally to the exposure of the islands and due to the long-distance, small scale and narrow lateral extent (**Figure 19.6**) the sense of place and feeling of remoteness of the islands will continue to endure in the presence of the distant WTGs.

1010. On balance, factoring in these considerations and the geographic areas impacted, the impact of the Windfarm Site on the 'spectacle of the islands' of the PCNP is assessed as **low** magnitude and **moderate-minor not significant** adverse. The spectacle of islands, their sense of place and feeling of remoteness will fundamentally remain present and continue to be experienced. The Windfarm Site would therefore not result in a significant adverse effect the outstanding visual and landscape scenery of the islands of the PCNP. The panoramic views of the seascape from the coast and islands, its rugged, unspoilt qualities, islands, and steep, jagged rock formations will remain evocative, with a strong sense of place and discernible time depth.

#### 19.13.1.5 Special Quality 10 - Space to Breathe

1011. Special Quality 10 'Space to Breathe' is described in **Table 19.18**. This Special Quality relates to the opportunities to access the *"clean environment"*, with *"relatively undeveloped areas"*, to experience *"a sense of exhilaration and liberty, or moments for quiet reflection or enjoyment of the stunning views"*. These opportunities are noted as being possible, even though the nearest settlements are relatively close.



1012. The Windfarm will result in zero change to the clean environment, the sense of exhilaration and liberty, or moments for quiet reflection available within the PCNP that are identified as forming the basis of this Special Quality. It will also result in zero changes to opportunities to access the PCNP from nearby settlements. The operation and maintenance of the Windfarm may only result in changes to the perceived character of "*relatively undeveloped areas*", as a result of changes to the "*enjoyment of stunning views*" experienced from certain seascapes of the PCNP, that are both relatively undeveloped and within the ZTV (**Figure 19.4** and **Figure 19.5**).
1013. The effects of the Windfarm Site on views from the PCNP has been assessed in **Section 19.7.1**, which has found changes of no greater than low magnitude on. The offshore WTGs are sufficiently distant, small scale and narrow in lateral extent (see also **Figure 19.6**), that the wide, open views of the sea are retained and remain largely undeveloped, such that people's enjoyment of the stunning views will continue regardless of the presence of the Windfarm.
1014. Through the introduction of man-made elements into the distant seascape setting, the Windfarm may be perceived as contrasting with the "*sense of spaciousness*" created at the sea edges and cliff tops of the PCNP, and by the extensive beaches, large waves, strong winds and jagged, angular cliffs. The distant location in the wider seascape context, as 'horizon development' outside the immediate seascape setting of the PCNP, results in less contrasts and influence on the sense of spaciousness. Although it may compete with the sense of space in views, adding a perceived limit to part of the offshore view, the fundamental sense of spaciousness would not be lost.
1015. On balance, factoring in these considerations, the impact of the Windfarm on the 'space to breathe' of the PCNP, particularly its "*relatively undeveloped areas*" and "*enjoyment of stunning views*", is assessed as **low** magnitude and **moderate-minor not significant** adverse. The 'space to breathe' will fundamentally remain present and continue to be experienced in the context of the Windfarm Site.

#### 19.13.1.6 Special Quality 11 - Remoteness, Tranquillity and Wildness

1016. Special Quality 11 'Remoteness, Tranquillity and Wildness' is described in **Table 19.18**. The defined special quality (PCNPA, 2019) refers specifically to the "*sense of remoteness and tranquillity can be found at the exposed and relatively isolated stretches of Freshwater West, evoked by the wind swept undulating sand dunes*"; however, it is evident from the assessment of MCAs in **Section 19.10** that tranquillity

is experienced to varying degrees from coastal parts of the PCNP within the study area.

1017. The assessments of effects on the perceived remoteness, tranquillity, and wildness of these MCAs (**Section 19.10**) has found that visibility of the Windfarm may be perceived as contrasting with the perceived remoteness and wildness of parts of these seascapes of the PCNP, through the introduction of man-made elements into the environment, however it may also be perceived as relating legibly to the coastal exposure and inclement conditions and their dynamism through its aesthetic and kinetic form.
1018. The Windfarm also has potential to influence the perceived remoteness along the coast, including its "*remote and unspoilt*" character. Inland areas of the PCNP away from the immediate coastal are subject to greater human influences, in the form of farmland, settlement and visitor facilities. The sense of remoteness within the study area occurs primarily in parts of the Freshwater West and Castlemartin coastlines. Freshwater West and Castlemartin coastlines are only accessible via the Pembrokeshire Coast Path. The addition of fixed man-made structures in the wider seascape setting of these areas of the PCNP may potentially influence the perceived remoteness by reducing the sense of having a relative lack of human influence, however the degree of change is moderated by its distant location well outside the immediate seascape context.
1019. The Windfarm may also impact the visual aspects of tranquillity, relating to what is seen by people and whether its visible elements detract from the perception of such tranquillity (rather than on the aural aspects of tranquillity, which will not be changed). Many of the visual aspects of tranquillity relate to the perception of natural landscapes, such as trees, woodland, streams, rivers, lakes, and geological features. The Windfarm Site will have no effect on these tranquillity indicators and may only influence the perception of 'the sea' and the perceived tranquillity it provides in the experience of the PCNP coastline. Simply seeing the offshore WTGs on the sea horizon outside the PCNP would not be sufficient to negate opportunities to experience tranquillity. All other visual aspects of tranquillity of the natural environment which contribute to the experiences of tranquillity within the PCNP would continue to prevail and moderate the influence of the WTGs, which would often be viewed in the context of exposed and wild, rather than tranquil, seas.
1020. On balance, factoring in these considerations and the geographic areas impacted, the impact of the Windfarm Site on the perceived remoteness, tranquillity, and wildness of the PCNP is assessed as **low-negligible** magnitude and **moderate-**

**minor not significant** adverse. The remoteness, tranquillity and wildness will fundamentally remain present and continue to be experienced.

#### 19.13.1.7 Night-time Special Qualities

1021. Part of the appreciation of the PCNP defined in Special Quality 11 is the ability to experience the *“big skies of the evening and the radiance of the stars on a clear night”*. The Background Paper: Special Qualities of PCNP report (PCNPA, 2018) identifies that *“Part of the special appreciation of the National Park is the ability to absorb not only the tranquillity and sense of calm during the day, but the big skies of the evening and the radiance of the stars on a clear night. Areas with substantial night-time light pollution within the National Park, are centred upon the main settlements of Tenby and Saundersfoot and St Davids, although moderate night-time light pollution is identified for the southern slopes of the Preseli Hills and the hinterland for Tenby and Saundersfoot. One particularly unique aspect is the lack of light pollution of the night sky. It is wonderful to get such a clear view of the ‘greatest show on earth’ this may be another aspect of the Park which is worth promoting.”* Effects on the night-time Special Qualities of the PCNP are considered in **Section 19.8**.

#### 19.13.1.8 Special Quality 12 - Diversity and Combination of Special Qualities

1022. Special Quality 12 'Diversity and Combination of Special Qualities' is described in **Table 19.18**. It is not an individual Special Quality but is referred to as *“the combination of special qualities”* and *“the variety and distribution”* of special qualities *“within a relatively small area”* of the PCNP helping to *“create its uniqueness”*.

1023. The assessment has identified that the Windfarm will result in zero change and no effects on many of the PCNPs special qualities, including its diverse geology (2), distinctive settlement pattern (4) and access to the PCNP (9). A number of special qualities are also scoped out of the SLVIA in relation to the Pembrokeshire Coast National Park including Rich Archaeology (5) and Cultural Heritage (6); and Richness of Habitats and Biodiversity (7).

1024. Those Special Qualities that are assessed in more detail above regarding 'coastal splendour', 'diversity of landscape', 'islands', 'space to breathe' and 'remoteness, tranquillity and wildness' have been assessed as being subject to low-negligible levels of change and not significant effects as a result of the introduction of the Windfarm Site. The visual aspects of the perceived qualities of the PCNP have been assessed, as they convey the *“sights of the sea”* qualities referred to in Special Quality 12 and have been found to be of low magnitude and not significant. Other qualities referred to as contributing to the diversity and combination of special qualities, including the

*"sounds of the sea, the rolling landscapes, wooded valleys and upland plateaus of the PCNP" and the "distinctive combination of colour, contrast and change" will not be impacted by the Windfarm Site.*

1025. The potential impacts on the Special Qualities for which the PCNP has been designated have been taken into consideration and significant adverse effects on the designated landscape of the PCNP have been avoided. The sense of remoteness and tranquillity will not be lost, the pattern and diversity of the landscape will remain, and significant effects on undeveloped coastline are avoided due to the distance of the Windfarm Site outside the PCNP.

## 19.14 Potential cumulative effects

### 19.14.1 Methodology

1026. The overarching approach to cumulative effect assessment (CEA) is set out in **Chapter 6: EIA Methodology**. Only projects which are reasonably well described and sufficiently advanced to provide information on which to base a meaningful and robust assessment have been included in the CEA. Projects which are sufficiently implemented during the site characterisation for the Offshore Project have been considered as part of the baseline for the EIA. Where possible OWL has sought to agree with stakeholders the use of as-built project parameter information (if available) as opposed to consented parameters to reduce over-precaution in the cumulative assessment.

1027. The Cumulative Effects Assessment (CEA) considers the impact associated with the White Cross Offshore Windfarm together with other relevant plans, projects, and activities. Cumulative effects are therefore the additional or combined effect of the Windfarm Site in combination with the effects from a number of different projects, on the same receptor or resource.

1028. GLVIA3 (Landscape Institute and IEMA 2013, p120) defines cumulative landscape and visual effects as those that *"result from additional changes to the landscape and visual amenity caused by the proposal in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future."*

1029. NatureScot's guidance, Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot 2012) is widely used across the UK to inform the specific assessment of the cumulative effects of windfarms. Both GLVIA3 and

NatureScot's guidance provide the basis for the methodology for the cumulative SLVIA undertaken in the SLVIA. The NatureScot (2012) guidance defines:

1030. *"Cumulative effects as the additional changes caused by a Proposed Development in conjunction with other similar developments or as the combined effect of a set of developments taken together"* (NatureScot, 2012, p.4).
1031. Cumulative landscape effects are those effects that *"can impact on either the physical fabric or character of the landscape, or any special values attached to it"* (NatureScot, 2012, p.10); and
1032. *"Cumulative visual effects are those effects that can be caused by combined visibility, which occurs where the observer is able to see two or more developments from one viewpoint and / or sequential effects which occur when the observer has to move to another viewpoint to see different developments"* (NatureScot, 2012, p11).
1033. In line with NatureScot guidance and GLVIA3, cumulative effects are assessed in this SLVIA as the additional changes caused by the Windfarm Site in conjunction with other similar developments (not the totality of the cumulative effect). The CEA assesses the cumulative effect of the Windfarm Site with other projects (**Table 19.23**) against the baseline for SLVIA receptors (**Section 19.4**), with the assessment of significance apportioning the amount of the effect that is attributable to White Cross Offshore Windfarm. The addition of the Windfarm Site to the baseline character/view is assessed, and information provided on *"how the effects of the applicant's proposal would combine and interact with the effects of other development"* (PINS, 2019).
1034. Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises because of this change that is assessed in the CEA, such as through design discordance or proliferation of multiple developments impacting characteristics or new geographic areas, and ultimately if character changes occur because of multiple developments becoming a prevailing characteristic of the seascape or view.

#### 19.14.2 Tiered approach to CEA

1035. In accordance with NatureScot guidance and GLVIA3 (para 7.13), existing projects and those which are under construction (**Table 19.23**) are included in the SLVIA baseline; however, there are no relevant schemes in the SLVIA study area.

1036. A further assessment of the additional cumulative seascape, landscape, and visual effects of the Windfarm Site with other potential future projects is undertaken in the Cumulative Effects Assessment (CEA) in **Section 19.14.4**.

1037. In undertaking this CEA for the Windfarm Site, it is important to bear in mind that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative effects alongside the Windfarm Site. Therefore, a tiered approach has been adopted as described in **Chapter 6: EIA Methodology** and in accordance with PINS (2019) Advice Note Seventeen: Cumulative Effects Assessment. This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the projects' parameters. The tiered approach which will be utilised within the CEA employs the following tiers:

- Tier 1 assessment:
  - Projects that are under construction
  - Permitted applications, not yet implemented
  - Submitted applications, not yet determined.
- Tier 2 assessment:
  - Projects on the Planning Inspectorate's Programme of Projects, where a scoping report has been submitted
- Tier 3 assessment:
  - Projects on the Planning Inspectorate's Programme of Projects, where a scoping report has not been submitted.

### 19.14.3 Other plans, projects, and activities

1038. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of an overall screening exercise of a cumulative long-list of projects (see **Chapter 6: EIA Methodology**). Those included in the overall short list for the CEA have then been subject to a screening exercise specific to potential cumulative effects on seascape, landscape, and visual receptors. Each project or plan has been considered on a case by case basis for screening in or out of this chapter's CEA based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved. Projects screened into the CEA with potential for cumulative effects interactions for seascape, landscape, and visual receptors, are mapped in the cumulative search area base plan compiled within the 60km SLVIA study area (**Figure 19.1**). The specific projects scoped into the CEA for seascape, landscape, and visual receptors, are set out in **Table 19.23**.

*Table 19.23 Summary of projects considered for the CEA in relation to the SLVIA*

Project	Status	Project Realistic worst-case scenario	Distance to the Windfarm Site (km)	Confidence in data	Overlap with the Offshore Project?	Included in CEA?
<b>Tier 1 - Projects that are under construction; permitted applications, not yet implemented; and submitted applications, not yet determined</b>						
<b>Erebus Offshore Windfarm</b>	Application stage (submitted but not yet determined)	Six to ten WTGs up to 270 m blade tip height (242 m rotor diameter) offshore substation, offshore and onshore export cables, onshore substation, and connection infrastructure into the National Grid.	33.2	High	Project's construction and operational phases have potential to overlap with construction phase (2024-2026) and operational phase (2027)	Considered as part of the Tier 1 CEA in <b>Section 19.14.4.1.</b>
<b>Tier 2 - Projects on the Planning Inspectorate's Programme of Projects, where a scoping report has been submitted</b>						
<b>The Llŷr Projects</b>	Scoping submitted	Two sites, Consisting of 8 WTGs of up to 280 m blade tip height (255 m rotor diameter). Each project-grouping of turbines will have inter-array cables connecting to a central offshore substation (one offshore substation for each project). Each project will have up to two offshore export cables to landfall.	16.3 (Llŷr 1) and 16.8 (Llŷr 2)	Moderate-low	Project's construction and operational phases have potential to overlap with construction phase (2025-2026) and operational phase (2027)	Considered as part of the Tier 2 CEA in <b>Section 19.14.4.2.</b>



Project	Status	Project Realistic worst-case scenario	Distance to the Windfarm Site (km)	Confidence in data	Overlap with the Offshore Project?	Included in CEA?
<b>Valorous Offshore Windfarm</b>	Scoping Submitted	Between 18 and 31 Wind Turbine Generators (WTGs) x 270 m blade tip height (240 m rotor diameter), of total capacity up to 300 MW, as well as the associated floating semi-submersible platforms and mooring infrastructure. A single offshore substation. Inter-array cables and offshore export cables to landfall. Onshore cabling between landfall and the grid connection; and Onshore substation close to the grid connection point.	19.1km	Moderate-low	Unknown	Considered as part of the Tier 2 CEA in <b>Section 19.14.4.2.</b>
<b>Tier 3 - Projects on the Planning Inspectorate's Programme of Projects, where a scoping report has not been submitted</b>						
<b>South Pembrokeshire Demonstration Zone</b>	Pre-Scoping	The scheme is intended to provide a multiple point offshore substation / control building with a single onshore connection to the Pembrokeshire Grid Supply Point, supporting demonstration / pre commercial floating offshore wind and marine development projects.	15km	Low	Unknown	Considered but not assessed further in CEA as no information on project available.

## 19.14.4 Assessment of cumulative effects

### 19.14.4.1 Tier 1

#### 19.14.4.1.1 Introduction

1039. The Tier 1 assessment considers all permitted and submitted applications that are not yet implemented within the SLVIA study area, as listed in **Table 19.23** and shown in **Figure 19.1**.
1040. There is only one Tier 1 project within the SLVIA study area with potential for cumulative effect with the Windfarm Site on seascape, landscape, and visual receptors. Erebus offshore windfarm is subject to a submitted application that is not yet determined. The realistic worst-case scenario consists of six to ten WTGs up to 270 m blade tip height (242 m rotor diameter). The Erebus offshore windfarm array area is located 33.2km from the Windfarm Site and 34.7km from the closest point of the Wales mainland coast.
1041. The preliminary assessment in **Table 19.23** has identified that there is potential for the operational phase of Erebus offshore windfarm to overlap with the White Cross Offshore windfarm operation and maintenance phase and potential for the construction phases to overlap between 2024 – 2026, leading to potential cumulative effects on seascape, landscape, and visual receptors.
1042. The effects identified are considered as being possible to arise only if Erebus offshore windfarm receives planning consent and becomes operational, however it is the case that application stage projects may not ultimately be built in the form that they are submitted, or may not be built at all, introducing some uncertainty that effects assessed in the Tier 1 assessment may not arise at all or in full.
1043. The Tier 1 CEA considers the additional cumulative effect of the Windfarm Site with Erebus offshore windfarm, with the assessment of significance apportioning the amount of the effect that is attributable to the Windfarm Site.
1044. The potential for cumulative effects arising in the Tier 1 assessment on views and visual amenity, and perceived effects on seascape and landscape character, is informed by the assessments undertaken in the assessment of potential impacts in **Section 19.7**. The potential cumulative effects arising with Erebus offshore windfarm are a subset of those considered for the Offshore Project alone. This is because some of the potential impacts identified and assessed for the Windfarm Site, are of low or negligible magnitude, or localised geographic extent and temporary in nature and therefore have limited potential to interact significantly with changes associated with other projects.

1045. The contribution of the Windfarm Site to the Tier 1 cumulative effect with Erebus offshore windfarm on views/visual amenity, seascape and landscape character is described in relation to cumulative effects on Wales with reference to representative viewpoints on this coastline, and the cumulative wireline visualisations presented in **Figure 19.24** to **Figure 19.33**.

1046. The extent of the 50km study area defined for the Erebus offshore windfarm did not include Lundy Island. The Erebus offshore windfarm is located at a minimum range of approximately 67.7km from Lundy Island. The potential impacts on character and visual amenity identified and assessed for the Windfarm Site on Lundy Island are of low magnitude. On that basis, it is considered that at such range the cumulative interactions would not have the potential to result in significant change on the landscape and visual amenity at Lundy Island and are not assessed further.

#### 19.14.4.1.2 Wales

1047. The potential impacts identified and assessed for the Windfarm Site alone on receptors in Wales (where Erebus offshore windfarm has most potential to effect) are of low magnitude and not significant (as assessed in **Section 19.7**). It is considered that these potential impacts have limited potential to interact with changes associated with Erebus offshore windfarm. This is primarily due to the distance of the Windfarm Site off the South Wales coast, approximately 54.6km.

1048. The Erebus offshore windfarm cumulative ZTV in **Figure 19.23** shows the potential geographic extent of combined theoretical visibility of the Windfarm Site with Erebus offshore windfarm. This ZTV shows that from the seascape within Welsh waters there would be extensive combined visibility of both Erebus offshore windfarm and the Offshore Project from the majority of the Welsh MCAs within the study area, seen offshore in distant views to the south. In respect of views from the landscape along the coast, the ZTV indicates that the combined visibility of both schemes would, generally, be appreciated from the same geographic extent as for the Windfarm Site in isolation, which within the study area is the south facing coastal margin of Pembrokeshire and the very southern extent of Skokholm Island. The visibility, and influence, of Erebus offshore windfarm would be greater from the west-facing bay at Freshwater West, and from elevated ridgelines inland of the coast across the Castlemartin peninsula. Because of its location further to the east, the Windfarm Site would have greater influence on areas of seascape to the east of St. Govan's Head, which screens Erebus.

#### *Cumulative Visual Effects*

1049. The Erebus offshore windfarm cumulative ZTV in **Figure 19.23** shows the potential geographic extent of combined theoretical visibility of the Windfarm Site

with Erebus offshore windfarm. This ZTV shows wide combined visibility of both Erebus offshore windfarm and the Offshore Project from parts of the South Pembrokeshire coastline within the study area. It demonstrates that the influence of Erebus offshore windfarm would be established from parts of Wales at closer range than the Offshore Project in the Tier 1 scenario. The approach to the CEA considers SLVIA viewpoints that fall within 60km of the Tier 1 cumulative schemes; Viewpoint 1: Stack Rocks (**Figure 19.24**) and Viewpoint 7: Rosslare to Cherbourg ferry route (**Figure 19.30**).

1050. Erebus offshore windfarm is shown in the wireline visualisations from Viewpoint 1: Stack Rocks, (**Figure 19.24**), within the PCNP.

1051. The cumulative wireline illustrates that there would be potential for the WTGs within the Windfarm Site to be visible in combination with Erebus offshore windfarm, located to the west in the same part of the offshore views so that they would be visually separated by open sea but seen simultaneously from this location. The Windfarm Site will form a visually recessive distant element at a range between 55.1km and 67.1km. Erebus offshore windfarm will be at closer proximity (between approximately 42.5km and 49.4km offshore) and consequently would have a slightly larger vertical scale in these representative views from the PCNP coast, contributing more to the cumulative effect, with the Windfarm Site comfortably spaced to the east, such that it appears as another, very distant, and separate, offshore windfarm. The WTGs within the Windfarm Site will appear more distant and recessive, introducing elements that would be characteristic in the receiving view with a similar form and which will appear slightly smaller in apparent scale due to their longer distance from this viewpoint.

1052. The contribution of the Windfarm Site to the cumulative effect with Erebus offshore windfarm on views and visual amenity experienced from the Wales coastline within the SLVIA study area is assessed as being of **low to negligible** magnitude and even for receptors of high sensitivity at the coast or the PCNP, its resulting contribution to the cumulative effect on views and perceived character of the seascape off the South Pembrokeshire coast is assessed as being **moderate-minor not significant** adverse, reducing for receptors of lower sensitivity to change and with greater distance.

1053. Regarding Viewpoint 7: Rosslare to Cherbourg Ferry (**Figure 19.30**), a **low** magnitude of impact and **minor not significant**, adverse, contribution to the cumulative effect with Erebus offshore windfarm will occur. The addition of the Windfarm Site will introduce a separate offshore windfarm influence on the wide expanse of sea skyline appreciated by those undertaking this sailing. Although the

Windfarm Site will appear in a new part of the view, to the east, which is currently free of windfarm influence, the offshore WTGs will be seen over a distance between 48.8km and 52.9km. Erebus offshore windfarm would be located a minimum range of 47.3km. The offshore WTGs within the Windfarm Site and Erebus offshore windfarm would appear as small-scale features seen beyond the horizon, with the addition of the Windfarm Site occupying a small horizontal extent (**Figure 19.6**) within the wide and open view.

#### *Cumulative Seascape Effects*

1054. In respect of cumulative seascape effects, the ZTV (**Figure 19.4**) indicates that the combined visibility of both schemes would, generally, be appreciated from the same geographic extent of Welsh MCAs as for the Offshore Project in isolation which within the study area is the open inshore waters of the Pembrokeshire coast and offshore waters to the south. From parts of the associative coastline there would be combined visibility from the south facing coastal margin of Pembrokeshire and the very southern extent of Skokholm Island. The visibility, and influence, of Erebus offshore windfarm would be greater from the west-facing bay at Freshwater West, and from elevated ridgelines inland of the coast across the Castlemartin peninsula. Because of its location further to the east of Erebus offshore windfarm, the Offshore Project would have greater influence on areas of seascape to the east of St. Govan's Head landform, which screens Erebus offshore windfarm.

*Table 19.19.24 Cumulative Assessment of MCAs (Tier 1 Scenario)*

MCA	Distance to Windfarm Site	Distance to Erebus Offshore Windfarm array area	Cumulative Assessment
<b>MCA 18: West Pembrokeshire Coastal Waters and Islands</b>	58.2km	28.2km	The Erebus offshore windfarm will be infrequently visible at moderate distance. The Windfarm Site would be perceived at very long range further to the south, separated from Erebus offshore windfarm by a substantial extent of intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the high sensitivity of this MCA, the cumulative effect <b>moderate-minor not significant</b> adverse.
<b>MCA 19: West Pembrokeshire Islands, Bars and Inshore Waters</b>	51.4km	14.2km	The Erebus offshore windfarm will be infrequently visible at relatively close range. The Windfarm Site would be perceived at very long range further to the south, separated from Erebus offshore windfarm by a substantial extent of intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the medium-high sensitivity of this MCA, the total cumulative effect <b>moderate-minor not significant</b> adverse.
<b>MCA 20: Irish Sea Open Waters</b>	54.9km	14.4km	The Erebus offshore windfarm will be infrequently visible at relatively close range. The Windfarm Site would be perceived at very long range further to the south, appearing behind, or separated from, Erebus offshore windfarm by a substantial extent of intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the medium sensitivity of this MCA, the total cumulative effect <b>minor not significant</b> adverse.
<b>MCA 21: Milford Haven</b>	57.8km	33.9km	The Erebus offshore windfarm will be infrequently visible at long distance. The Windfarm Site would be perceived at very long range further to the south, separated from Erebus offshore windfarm by a substantial extent of

MCA	Distance to Windfarm Site	Distance to Erebus Offshore Windfarm array area	Cumulative Assessment
			intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the medium-high sensitivity of this MCA, the total cumulative effect <b>moderate-minor not significant</b> adverse.
<b>MCA 22: South Pembrokeshire Coastal and Inshore Waters</b>	42.9km	29.1km	The Erebus offshore windfarm will be infrequently visible at long distance. The Windfarm Site would be perceived at very long range further to the south, separated from Erebus offshore windfarm by a substantial extent of intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the high sensitivity of this MCA, the total cumulative effect <b>moderate-minor not significant</b> adverse.
<b>MCA 23: South Pembrokeshire Open Waters</b>	31.7km	2.3km	The Erebus offshore windfarm will be visible to the south of the MCA at close proximity. The Windfarm Site would be perceived at long range further to the south, separated from Erebus offshore windfarm by a substantial extent of intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the medium sensitivity of this MCA, the total cumulative effect <b>minor not significant</b> adverse.
<b>MCA 28: Bristol Channel Approaches</b>	50.0km	56.3km	The Erebus offshore windfarm will be infrequently visible at a very long distance. The Windfarm Site would be perceived at very long range further to the south, separated from Erebus offshore windfarm by a substantial extent of intervening open seascape, such that it would appear infrequently as an isolated small scale feature in offshore waters. The cumulative magnitude of impact resulting from the addition of the Windfarm Site to the Tier 1 baseline is assessed as <b>low</b> and taking into account the medium sensitivity of this MCA, the total cumulative effect <b>minor not significant</b> adverse.



1055. The addition of the Windfarm Site in the Tier 1 scenario will result in some increase in the influence of man-made elements perceived from MCAs identified in **Table 19.19.24** (shown on **Figure 19.8**) which would experience wide combined visibility; however, this will occur in the context of the influence that would arise from Erebus offshore windfarm, in offshore waters, which would modify the seascape character. The offshore WTGs of the Offshore Project would, therefore, not be discordant with the energy influences present in the application stage baseline of the MCAs. The addition of the Windfarm Site will result in some increase in the cumulative influence of offshore renewables as elements in the setting of these MCAs, however its influence is added out to sea beyond Erebus offshore windfarm, at very long distance, appearing small in scale in the backdrop of views out to sea. It will have a geographically contained and remote association with the Erebus offshore windfarm and will be less apparent as an addition to the cumulative situation and context of the MCAs which define the Welsh seascape. The windfarms are similar in scale and visual appearance which avoids the potential for visual discord.

1056. The offshore WTGs within the Windfarm Site will form a separate feature, clearly separated from Erebus offshore windfarm, perceived too infrequently (see **Section 19.4.5**), and at very long distance, to be perceived as a characteristic of the MCAs. The addition of the Windfarm Site will add a relatively small scale man-made feature, occupying a narrow horizontal extent (**Figure 19.6**), perceived separately to the Tier 1 influence of Erebus offshore windfarm, within the wider seascape setting of the MCAs and would not combine to change the overall existing seascape character; the Windfarm Site will not result in MCAs becoming defined by the presence of offshore wind farms/renewable energy developments.

#### *Cumulative Effects on Landscape Designations*

1057. The potential for cumulative effects on the defined Special Qualities of the PCNP in the application stage scenario is informed by the assessments undertaken in the cumulative visual and cumulative seascape assessments above and the Special Qualities assessment in **Section 19.13**. An assessment of the potential cumulative effects of the Windfarm Site with the application stage Erebus offshore windfarm on the Special Qualities of the PCNP is presented in **Table 19.25**. The six Special Qualities that were assessed in detail in the Offshore Project alone assessment for in **Section 19.13** are assessed further in this cumulative assessment, with all other Special Qualities scoped out of further assessment for the reasons set out in the preliminary assessment in **Section 19.4.3**.

*Table 19.25 Cumulative Assessment of PCNP Special Qualities (Tier 1 Scenario)*

Special Quality	Cumulative Assessment
<p><b>1. Coastal Splendour</b></p>	<p>Cumulative effects of the Windfarm Site and Erebus offshore wind farm on the 'coastal splendour' of the PCNP within the study area will be localised to the south-facing coastal edge of St. Ann's Head, Angle Peninsula, and Castlemartin, where Erebus offshore windfarm will be most visible in closer proximity to the south-west. The Windfarm Site is likely to result in a slightly increased cumulative effect where successive views occur offshore from these areas. Considering the influence of Erebus offshore windfarm, the very long distance of the Windfarm Site out to sea, in a different portion of the views to the south, which appears small in scale in the seascape backdrop experienced from localised geographic areas, the additional cumulative magnitude of impact to the coastal splendour of the PCNP arising from the Windfarm Site in the Tier 1 scenario, is assessed as <b>low</b> and the cumulative effect <b>moderate-minor not significant</b> adverse.</p>
<p><b>3. Diversity of Landscape</b></p>	<p>Cumulative effects of the Windfarm Site and Erebus offshore windfarm on the landscape diversity of the PCNP localised to the south-facing coastal edge of St. Ann's Head, Angle Peninsula, and Castlemartin, where Erebus offshore windfarm will be most visible in closer proximity to the south-west. These are areas where the diversity of landscape is appreciated, from viewpoints where both the "<i>rural National Park</i>" and the "<i>coastal National Park</i>" can be seen, in juxtaposition. This often excludes seascapes at the immediate coastal edge, which afford direct views from the coastline to the open sea, in which the rural National Park further inland from the coast, is often not apparent. The Windfarm Site, in addition to Erebus windfarm, will result in some increase in the influence of man-made elements perceived from this part of the PCNP, but contributes to the diversity of influences and elements in the distant seascape setting of this part of the PCNP. The 'diversity of landscape' will fundamentally remain present and continue to be experienced in the context of the Proposed Development and Erebus offshore windfarm. The additional cumulative magnitude of impact to this Special Quality of the PCNP arising from the Windfarm Site in the Tier 1 scenario, is assessed as</p>

Special Quality	Cumulative Assessment
	<p><b>low</b> and the cumulative effect <b>moderate-minor not significant</b> adverse.</p>
<p><b>8. Islands</b></p>	<p>Erebus offshore windfarm will have very limited influence on this Special Quality due to its long-distance, small scale and narrowness in lateral extent when viewed from the islands. The sense of place and feeling of remoteness of the islands will continue to endure in the presence of the distant WTGs, although there will be some changes to the composition of the seascape arising in views from the mainland to the islands and the addition of man-made elements in its wider seascape context may potentially influence the perceived remoteness. The Windfarm Site may contribute to some increase in the cumulative development context in the seascape setting of the islands, however it is located at very long distance offshore, is relatively small in scale and narrow in horizontal extent (<b>Figure 19.6</b>) is located in a different part of the seascape such that it would appear in successive views to the south, which limits its contribution to the cumulative effects experienced from the islands. The spectacle of islands, their sense of place and feeling of remoteness will fundamentally remain present and continue to be experienced in the context of the Windfarm Site and Erebus offshore windfarm. The panoramic views of the seascape from the coast and islands, their rugged, unspoilt qualities and steep, jagged rock formations will remain evocative, with a strong sense of place and discernible time depth. The additional cumulative magnitude of impact to this Special Quality of the PCNP arising from the Windfarm Site in the Tier 1 scenario, is assessed as <b>low</b> and the cumulative effect <b>moderate-minor not significant</b> adverse.</p>
<p><b>10. Space to Breathe</b></p>	<p>The Windfarm Site will have no cumulative effects on the 'space to breathe' qualities of the majority of the PCNP where it and the Erebus offshore wind farm are not visible. Cumulative effects are likely to be localised to the south-facing coastal edge of St. Ann's Head, Angle Peninsula, and Castlemartin, where the combined cumulative visibility of both projects will be concentrated (<b>Figure 19.23</b>). The areas impacted cumulatively will continue to afford opportunities for space to access the coast and enjoy views, with 'space to breathe,' following the introduction of Erebus offshore windfarm. The additional</p>

Special Quality	Cumulative Assessment
	<p>cumulative effects resulting from the Windfarm Site on the 'space to breathe' of the PCNP, particularly its "<i>relatively undeveloped areas</i>" and "<i>enjoyment of stunning views</i>," is assessed as <b>low</b> magnitude and <b>minor not significant</b> adverse cumulative effect. The opportunities to experience "<i>relatively undeveloped areas</i>" without cumulative effects arising from the windfarm site and Erebus Offshore windfarm will continue to be available across the wider PCNP without visibility of either cumulative scheme (<b>Figure 19.23</b>).</p>
<p><b>11. Remoteness, Tranquillity and Wildness</b></p>	<p>Cumulative effects are likely to be localised to the south-facing coastal edge of St. Ann's Head, Angle Peninsula, and Castlemartin, where the combined cumulative visibility of both projects will be concentrated (<b>Figure 19.23</b>). The areas most likely to be impacted cumulatively tend to have reduced coastal remoteness, tranquillity and wildness qualities compared to other areas of the PCNP, as they are influenced by existing shipping and MOD firing ranges. The Windfarm Site, in addition to Erebus offshore windfarm, will result in some increase in the influence of man-made elements in distant offshore waters to the south and south-west, respectively, and therefore a potential reduction in the perceived remoteness, but will also relate legibly to the coastal exposure and inclement conditions that define aspects of wildness associated with this relatively remote coast. The additional cumulative magnitude of impact to this Special Quality of the PCNP arising from the Windfarm Site in the Tier 1 scenario, is assessed as <b>low</b> and the cumulative effect <b>minor not significant</b> adverse. The remoteness, tranquillity and wildness will fundamentally remain present and continue to be experienced.</p>
<p><b>12. Diversity and Combination of Special Qualities</b></p>	<p>The Special Qualities that are assessed above regarding 'coastal splendour,' 'diversity of landscape,' 'islands,' 'space to breathe' and 'remoteness, tranquillity and wildness' have been assessed as being subject to low levels of cumulative change and not significant cumulative effects as a result of the addition of the Windfarm Site to the Tier 1 baseline. The visual aspects of the perceived qualities of the PCNP have been assessed above for Viewpoint 1 (<b>Figure 19.24</b>), as it relates the "<i>sights of the sea</i>" qualities referred to in Special Quality 12 and have also been found to be of low magnitude and effects not significant. Other qualities referred to as contributing to</p>

Special Quality	Cumulative Assessment
	<p>the diversity and combination of special qualities, including the "<i>sounds of the sea, the rolling landscapes, wooded valleys and upland plateaus of the PCNP</i>" and the "<i>distinctive combination of colour, contrast and change</i>" will not be impacted cumulatively. Overall, the additional cumulative change the diversity and combination of Special Qualities of the PCNP, is assessed as <b>low</b> magnitude and the effect <b>minor not significant</b> adverse.</p>

#### 19.14.4.2 Tier 2

##### 19.14.4.2.1 Introduction

1058. The Tier 2 CEA considers all projects with a Scoping Report submitted on the Planning Inspectorate programme of projects within the SLVIA study area as listed in **Table 19.23** and shown in **Figure 19.1**, consisting of the Llŷr Projects offshore windfarm and Valorous offshore windfarm, as well as all projects considered in Tier 1 (permitted and submitted applications that are not yet implemented).

1059. The Tier 2 CEA therefore focuses on the additional cumulative effect of the Windfarm Site with the Llŷr Projects and Valorous offshore windfarms. The proposed capacity of the two Llŷr Projects is up to 100MW per site, 200 MW in total. The capacity of Valorous offshore windfarm is up to 300MW. Separate consent applications will be submitted by Blue Gem Wind Ltd and Floventis Energy Ltd for each project. The EIA Scoping Report for the Llŷr Projects offshore windfarm was submitted to Natural Resources Wales in April 2022, and the Scoping Report for Valorous was submitted in October 2019.

1060. The Valorous Scoping boundary is approximately 155km<sup>2</sup> in area and is located in the Celtic Sea, approximately 47km south-west of the Pembrokeshire coastline.

1061. The Llŷr Projects Scoping boundary is approximately 50km<sup>2</sup> across two sites, in the Celtic Sea, approximately 38.3km from Lundy Island, and 30.5km from the Welsh coastline.

1062. Both projects consist of floating WTGs, and OSPs. The WCS of both schemes is described in **Table 19.23**. The WTGs will be lit and marked as required for aviation and navigation purposes.

#### 19.14.4.2.2 Certainty and data confidence

1063. The cumulative landscape and visual effects of scoping stage sites are not generally considered in CEAs for onshore wind farm development, in line with best practice guidance (NatureScot, 2021), which states that:

1064. *"An assessment of cumulative impacts associated with a specific development proposal should encompass the effects of the proposal in combination with:*

- *existing development, either built or under construction.*
- *approved development, awaiting implementation; and*
- *proposals awaiting determination within the planning process with design information in the public domain. Proposals and design information may be deemed to be in the public domain once an application has been lodged, and the decision-making authority has formally registered the application".*

1065. This guidance generally recommends cumulative assessment goes only as far as assessing projects where an application has been lodged, however, it does also state that *"occasionally it may be appropriate to include proposals which are in the early stages of development in an assessment, particularly where clusters of development or 'hotspots' emerge. However, a degree of pragmatism is required to enable proposals to progress to determination"*.

1066. GLVIA3 (Landscape Institute, 2013) also supports the approach of assessing projects with planning consent and those that are subject of a valid planning application, stating (7.14) that *"schemes that are at the pre-planning or scoping stage are not generally considered in the assessment of cumulative effects because of uncertainty about what will actually occur, that is, it is not 'reasonably foreseeable"*.

1067. GLVIA3 does however note, that *"there may be occasions where such schemes may be included in the assessment if the competent authority or consultation bodies consider this to be necessary. Such a request should only be made if absolutely necessary to make a realistic assessment of potential cumulative effects."*

1068. Offshore specific guidance (PINS, 2019) recommends that projects where a scoping report has been submitted are considered in the CEA within the Tier 2 assessment, while also recognising that there is a decreasing level of detail likely to be available moving from Tier 1 to Tier 3, and less certainty in terms of the whether the effects assessed in a Tier 2 CEA would materialise or occur to the level assessment in the CEA, given the uncertainty of the consent, the limited amount of information available on which to base assessments and the potential for project design envelopes to change during the application and consenting process.



1069. The final offshore array area boundary and coordinates for Valorous offshore windfarm are still to be determined following award of an option agreement from The Crown Estate. Valorous consists of between 18 and 31 WTGs, with associated floating semi-submersible platforms and a single offshore substation. The scoping layout (20 x 270m blade tip height WTGs, shown on Figure 4-4 of the Scoping Report) is assumed to be the worse-case for the assessment and has been used to generate the 'markers' shown in the wireline visualisations. The Llŷr Projects consists of two adjacent array areas, known as Llŷr 1 and Llŷr 2, each with a capacity of up to 100 MW. Each Crown Estate Lease Option area (i.e., the array areas, Llŷr 1 and Llŷr 2) cover an outline area of interest of 50km<sup>2</sup>, which will be refined through the EIA and design process. These areas represent an 'area of search,' and the footprint will be reduced as the design development progresses and with input from stakeholder consultation and Crown Estate negotiation, and as such are assumed to the worst-case for the assessment. WTG locations are not shown in the cumulative wirelines in **Figure 19.24** to **Figure 19.33** as there is no specific layout information in the Scoping Reports for these projects, however the visible extent of the offshore windfarms is indicated using a marker in the wirelines to provide some indication of their location and lateral spread in views.
1070. As per the Tier 1 CEA, the potential cumulative effects arising with Llŷr Projects and Valorous offshore wind farms are a subset of those considered for the Windfarm Site alone and is informed by the assessments undertaken in the assessment of potential impacts in **Section 19.7**, with project alone effects of low magnitude having limited potential to interact significantly with changes associated with other projects.
1071. The contribution of the Windfarm Site to the Tier 2 cumulative effect with Llŷr Projects and Valorous offshore windfarm on views/visual amenity, seascape and landscape character is described with reference to the geographic region where there is the most potential for cumulative effects to occur within the SLVIA study area with reference to representative viewpoints on these coastlines. Cumulative wirelines are shown from viewpoints located within 60km of each Tier 2 scheme, namely Viewpoint 1 (**Figure 19.24**), Viewpoint 2 (**Figure 19.25**), Viewpoint 6 (**Figure 19.29**), and Viewpoint 7 (**Figure 19.30**).
1072. The Llŷr Projects Scoping boundary is approximately 50km<sup>2</sup> across two sites, in the Celtic Sea, approximately 38.3km from Lundy Island, and 30.5km from the Welsh coastline.



#### 19.14.4.2.3 Wales

1073. Llŷr Projects offshore windfarm is sited approximately 31.4km from closest representative viewpoint in Wales in the SLVIA study area at Stack Rocks in the PCNP (Viewpoint 1, **Figure 19.24**). It has potential to contribute to cumulative effects on seascape, landscape, and visual receptors mainly from the Pembrokeshire coastline in South Wales within the SLVIA study area, where it is closer to the coast and will be viewed as an additional offshore windfarm on the sea skyline extending the lateral spread of WTGs into the open sea to the east of the Tier 1 application-stage Erebus offshore wind farm. Valorous offshore windfarm is located approximately 46.4km from the closest point of the Wales mainland coastline.
1074. Valorous offshore windfarm is sited approximately 49.2km from closest representative viewpoint in Wales, Viewpoint 1: Stack Rocks, within the PCNP (Viewpoint 1, **Figure 19.24**). Where it is closer to the coast and will be viewed as an additional offshore windfarm on the sea skyline extending the lateral spread of WTGs into the open sea to the east of the Tier 1 application-stage Erebus offshore wind farm.
1075. In Viewpoint 1: Stack Rocks (**Figure 19.24**), Project Valorous will be located at very long distance, 49.2km offshore from the viewpoint to the closest part of its array area. At such a long distance, the Project Valorous WTGs would be infrequently visible, having low contrast with the sky at such long-range and during the majority of prevailing visibility conditions they are unlikely to be seen. The Project Valorous WTGs will be located partially behind the Tier 1 Project Erebus WTGs at greater distance, but mainly results in an extension to the lateral spread of the combined array to the south, resulting in a slight increase to the developed skyline seen to the west. The Llŷr Projects will be viewed to the east of the Tier 1 Erebus scheme and overlapping and in front of the more distant Tier 2 Valorous scheme. The Llŷr Project sites would result in a noticeable increase in the extension to the lateral spread of the combined array to the east. It is the Llŷr Projects that would contribute most to the cumulative change arising in the Tier 1 scenario.
1076. The Windfarm Site will be viewed at greater distance than both the Tier 1 and Tier 2 schemes and would be visible immediately to the east of the Llŷr Projects offshore windfarm. The Windfarm would appear as an extension to the lateral spread of the combined array to the east, resulting in a slight increase to the developed skyline.
1077. Considering the above, the Windfarm Site will have a **low** magnitude of cumulative change and combined with the high sensitivity of views from this coastline result in a **moderate-minor, not significant, adverse** contribution to the cumulative effect

with Tier 2 projects on seascape, landscape, and visual receptors/views from the Pembrokeshire coast in Wales, including on the PCNP and PCP.

#### 19.14.4.2.4 Lundy Island

1078. The Valorous offshore windfarm is located 60.5km from the closest representative viewpoint on the island (Viewpoint 6, **Figure 19.29**). Due to its distance offshore and the predicted lack of material visibility of the offshore WTGs at such long range, Valorous offshore windfarm will have negligible contribution to the cumulative effect experienced from Lundy Island and is scoped out of further assessment of cumulative effects on seascape, landscape, and visual receptors. This is similar for the Erebus offshore windfarm, which is located at a minimum range of approximately 67.7km from Lundy Island and beyond the Llŷr Projects in views from Lundy Island.
1079. The Llŷr Projects offshore windfarm array areas are located between 39.9km and 51.3km from the closest representative viewpoint on the island (Viewpoint 6, **Figure 19.29**). It has potential to contribute to cumulative effects on seascape, landscape, and visual receptors from the west of the coastline in the SLVIA study area, where it is closer to the coast and will be viewed as a single offshore windfarm on the sea skyline. The WTGs within the Windfarm Site will be viewed over a greater minimum distance, over 44.6km from Lundy, extending the influence of wind energy into a portion of the view where there would be none. The Llŷr Projects offshore windfarm will be at closer proximity and consequently would have a slightly larger vertical scale in these views, contributing more to the cumulative effect, with the Windfarm Site comfortably spaced to the east, such that it appears as another, very distant, and separate, offshore windfarm. The WTGs within the Windfarm Site will appear comparatively more distant and recessive, introducing elements that would be characteristic in the receiving view with a similar form and layout and which will appear slightly smaller in apparent scale due to their longer distance from this viewpoint.
1080. The contribution of the Windfarm Site to the cumulative effect with Llŷr Projects offshore windfarm on views and visual amenity experienced from Lundy Island is assessed as being of **low** magnitude of cumulative change. Given the high sensitivity of the views and character of Lundy the resulting contribution to the cumulative effect on views and perceived character of the seascape off the west coast of Lundy is assessed as being **moderate-minor not significant adverse**, reducing further for receptors of lower sensitivity to change.

#### 19.14.4.2.5 North Devon

1081. The Llŷr Projects Array Area 1 is located approximately 56.9km from Viewpoint 2: Hartland Point (**Figure 19.25**). All remaining representative viewpoints within Devon

and Cornwall lie in excess of 60km from the closest Tier 1 and Tier 2 cumulative schemes and are therefore not considered further in the CEA.

1082. Although there is the potential for combined visibility, as shown in the cumulative wirelines (**Figure 19.25**), during infrequent periods of excellent visibility (**Section 19.4.5**), the cumulative effect of the Windfarm Site is likely to be imperceptible for the large majority of time owing to the lack of visibility of both schemes. The WTGs within the Windfarm Site would be located between 53.9km and 60.0km from this viewpoint, and therefore would appear at a similar distance and scale to those within the Lîyr Array Area 1. Although the Windfarm Site will appear in a new part of the view to the south of Lîyr Array Area 1, which is currently free of wind farm influence, the offshore WTGs will be seen over a substantial distance, and would appear as small scale features seen beyond the horizon, with the addition of the Windfarm Site occupying a small horizontal extent (**Figure 19.6**) within the wide and open seascape horizon.

1083. The contribution of the Windfarm Site to the cumulative effect with Lîyr Projects offshore windfarm on views and visual amenity and perceived seascape and landscape character of the coastline of north Devon and the Special Qualities of the NDCAONB is assessed as being of **low** magnitude of cumulative change and given the high sensitivity of the receptors this results in a **moderate-minor, not significant, adverse** cumulative level of effect.

### 19.15 Potential transboundary impacts

1084. The Scoping Report identified that there was no potential for significant transboundary effects regarding offshore seascape, landscape, and visual amenity from the Offshore Project upon the interests of other European Economic Area States and this is not discussed further.

### 19.16 Inter-relationships

1085. Inter-relationship impacts are covered as part of the assessment and consider impacts from the construction and decommissioning, operation and maintenance of the Offshore Project on the same receptor (or group). A description of the process to identify and assess these effects is presented in **Chapter 6: EIA Methodology**. The potential inter-relationship effects that could arise in relation to other topics that have been considered within this EIA. **Table 19.26** provides a summary of the principal inter-relationships and sign-posts to where those issues have been addressed in the relevant chapters.

*Table 19.26 Seascape, landscape, and visual amenity inter-relationships*

Topic and description	Related chapter	Where addressed in this chapter	Rationale
<b>Construction and Decommissioning</b>			
<b>Marine Archaeology and Cultural Heritage</b>	Chapter 16	Section 16.5	Potential for temporary, short-term, and reversible changes due to the addition of the Windfarm Site, resulting in effects on the setting of cultural heritage assets, including Registered Historic Parks and Gardens (RPGs) and Heritage Coasts.
<b>Socio-Economics, and Tourism and Recreation</b>	Chapter 23	Section 23.5	Potential for temporary, short-term, and reversible changes due to the addition of the Windfarm Site Project resulting in indirect effect to visitor and tourist use of the coast including receptors such as beaches, recreational routes, golf courses and visitor attractions.
<b>Operation and Maintenance</b>			
<b>Marine Archaeology and Cultural Heritage</b>	Chapter 16	Section 16.6	Potential for temporary, long-term, and reversible changes due to the addition of the Windfarm Site, resulting in effects on the setting of cultural heritage assets, including RPGs and Heritage Coasts.
<b>Socio-Economics, and Tourism and Recreation</b>	Chapter 23	Section 23.6	Potential for temporary, long-term, and reversible changes due to the addition of the Windfarm Site resulting in indirect effect to visitor and tourist use of the coast including receptors such as beaches, recreational routes, golf courses and visitor attractions.

## 19.17 Interactions

1086. The impacts identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic impacts as a result of that interaction. The areas of interaction between impacts are presented in **Table 19.27** and **Table 19.28**, along with an indication as to whether the interaction may give

rise to synergistic impacts. This provides a screening tool for which impacts have the potential to interact.

1087. **Table 19.29** then provides an assessment for each receptor (or receptor group) related to these impacts in two ways. Firstly, the impacts are considered within a development phase (i.e., construction, operation, maintenance, or decommissioning) to see if, for example, multiple construction impacts could combine. Secondly, a lifetime assessment is undertaken which considers the potential for impacts to effect receptors across development phases. The significance of each individual impact is determined by the sensitivity of the receptor and the magnitude of impact; the sensitivity is constant whereas the magnitude may differ. Therefore, when considering the potential for impacts to be additive it is the magnitude of impact which is important – the magnitudes of the different impacts are combined upon the same sensitivity receptor.

*Table 19.27 Interaction between impacts during construction and decommissioning*

<b>Potential impact</b>				
<b>Construction</b>	<b>Impacts on seascape character</b>	<b>Impacts on perceived landscape character</b>	<b>Impacts on special qualities of landscape designations</b>	<b>Impacts on views and visual amenity</b>
<b>Impacts on seascape character</b>		Yes	Yes	Yes
<b>Impacts on perceived landscape character</b>	Yes		Yes	Yes
<b>Impacts on special qualities of landscape designations</b>	Yes	Yes		Yes
<b>Impacts on views and visual amenity</b>	Yes	Yes	Yes	

*Table 19.28 Interaction between impacts during operation and maintenance*

<b>Potential impact</b>				
<b>Operation and maintenance</b>	Impacts on seascape character	Impacts on perceived landscape character	Impacts on special qualities of landscape designations	Impacts on views and visual amenity
<b>Impacts on seascape character</b>		Yes	Yes	Yes
<b>Impacts on perceived landscape character</b>	Yes		Yes	Yes
<b>Impacts on special qualities of landscape designations</b>	Yes	Yes		Yes
<b>Impacts on views and visual amenity</b>	Yes	Yes	Yes	



*Table 19.29 Potential interactions between impacts on offshore seascape, landscape, and visual amenity*

Highest level significance				
Receptor	Construction and decommissioning	Operation and Maintenance	Phase Assessment	Lifetime Assessment
Seascape character receptors – changes to perceived seascape character	Not significant	Not significant	<p><b>No greater than individually assessed impact</b></p> <p>Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations, and views/visual receptors), the actual receptor is the same in each case i.e., the people perceiving the effect. Therefore, these people will only perceive the effect in one way (visually) not via multiple pathways simultaneously.</p>	<p><b>No greater than individually assessed impact</b></p> <p>Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations, and views/visual receptors), the actual receptor is the same in each case i.e., the people perceiving the effect. Therefore, these people will only perceive the effect one way (visually), at one point in time, and will not experience the construction and decommissioning, operation and maintenance, phases simultaneously.</p>
	Not significant	Not significant	<p><b>No greater than individually assessed impact</b></p> <p>Although the assessment is broken down into different</p>	<p><b>No greater than individually assessed impact</b></p> <p>Although the assessment is broken down into different</p>
Landscape character receptors – changes to perceived character and	Not significant	Not significant	<p><b>No greater than individually assessed impact</b></p> <p>Although the assessment is broken down into different</p>	<p><b>No greater than individually assessed impact</b></p> <p>Although the assessment is broken down into different</p>

Highest level significance				
<b>qualities of designated landscapes</b>  <b>Visual receptors – changes to views experienced by people from specific and representative viewpoints and visual receptors</b>			receptors based upon both physical and policy definitions (seascape character, landscape character, designations, and views/visual receptors), the actual receptor is the same in each case i.e., the people perceiving the effect. Therefore, these people will only perceive the effect in one way (visually) not via multiple pathways simultaneously.	receptors based upon both physical and policy definitions (seascape character, landscape character, designations, and views/visual receptors), the actual receptor is the same in each case i.e., the people perceiving the effect. Therefore, these people will only perceive the effect one way (visually), at one point in time, and will not experience the construction and decommissioning, operation and maintenance, phases simultaneously.
	<b>Not significant</b>	<b>Not significant</b>	<b>No greater than individually assessed impact</b>  Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations, and views/visual receptors), the actual receptor is the same in each case i.e., the people perceiving the effect. Therefore, these people will only perceive the effect in one way (visually)	<b>No greater than individually assessed impact</b>  Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations, and views/visual receptors), the actual receptor is the same in each case i.e., the people perceiving the effect. Therefore, these people will only perceive the effect one way (visually), at one point in

**Highest level significance**

			not via multiple pathways simultaneously.	time, and will not experience the construction and decommissioning, operation and maintenance, phases simultaneously.
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## 19.18 Examples of existing permitted projects

1088. NPS EN-1 (draft) suggests at paragraph 5.10.21 that it may be helpful for applicants to draw attention to examples of existing permitted infrastructure they are aware of with a similar magnitude of impacts on sensitive receptors.
1089. **Table 19.30** provides an overview of development that has been permitted close to AONBs and National Parks elsewhere within the United Kingdom and the distances between the development and the nationally designated landscape as well as the scale of the WTGs. Whilst the nationally designated landscapes within the study area for the Offshore Project are at much greater distances, the height of the WCS WTGs is much greater than those that are operational at close range to these areas, although the WCS only has a small number of WTGs. However, the consented East Anglia One and East Anglia Two schemes are of equivalent scale and much closer to nationally designated landscapes than the proposed Offshore Project.
1090. Whilst other receptors may be considered sensitive e.g., people living in settlements or using long distance paths, it is considered that nationally designated landscapes provide the most relevant gauge of development impacting sensitive receptors for this SLVIA.

*Table 19.30 Examples of existing permitted offshore wind farm projects and their proximity to national landscape planning designations*

Project	Distance From Nationally Designated Landscape	Scale Of Development
<b>Scroby Sands OWF</b>	3.1km - Norfolk Coast AONB 8km – The Broads National Park	WTGs 108 m
<b>North Hoyle OWF</b>	8.7km – Clwydian Range and Dee Valley AONB	WTGs 120 m
<b>Ormonde</b>	12.6km - Lake District National Park	WTGs 163 m
<b>Rampion OWF</b>	14.4km – South Downs National Park	WTGs 140 m
<b>Rhyl Flats OWF</b>	14.8km – Clwydian Range and Dee Valley AONB 22.7km Anglesey AONB	WTG 128 m
<b>Burbo Bank Extension OWF</b>	14.6km – Clwydian Range and Dee Valley AONB	WTGs 187 m
<b>East Anglia TWO</b>	32.6km – Suffolk Coast and Heaths AONB	WTGs up to 282 m
<b>East Anglia ONE North</b>	37.7km - Suffolk Coast and Heaths AONB	WTGs up to 282 m

## 19.19 Summary

1091. This chapter has investigated the potential effects on offshore seascape, landscape, and visual amenity receptors arising from the Offshore Project. The range

of potential impacts and associated effects considered has been informed by the Scoping Opinion, consultation, and agreed through ETG meetings, as well as reference to existing policy and guidance. The impacts considered include those brought about directly as well as indirectly.

1092. The Windfarm Site is located offshore in the Celtic Sea, approximately 52km north-west of the Cornwall and Devon coastline, and approximately 43.7km from Lundy Island. The Pembrokeshire coastline lies approximately 54.7km to the north-east.
1093. Broadly, the SLVIA study area is formed by the seascape of the Celtic Sea, an area of the Atlantic Ocean where there is currently no development in the form of offshore windfarms or oil and gas installations. However, it is apparent that there is increasing interest in developing offshore wind within this area. This is likely to become more pronounced due to the need to mitigate climate change impacts through the production of renewable energy with a UK Government focus on offshore wind to meet its targets.
1094. **Table 19.31** presents a summary of the impacts assessed within this ES chapter, any commitments made, and mitigation required and the residual effects. No significant adverse impacts have been identified on the landscape, landscape planning designations, or visual amenity resource within the SLVIA study area. A moderate significant adverse effect has been identified within limited parts of MCA 51: Bristol Channel Approaches and MCA 43: Lundy and Outer Bristol Channel, during the construction and decommissioning and operation and maintenance phases of the Windfarm Site.
1095. In respect of visual effects, non-significant effects have been assessed from the 10 representative viewpoint locations, from the Pembrokeshire Coast Path (part of the Wales Coast Path), and from the South West Coast Path (part of the England Coast Path).
1096. The Windfarm Site directly impacts MCA 51: Bristol Channel Approaches and introduces elements that could partially influence its perceived seascape character, indirectly through visibility. Moderate significant effects would occur during construction and decommissioning, and operation and maintenance within approximately 20km of the Windfarm Site, reducing with distance beyond this range, to moderate-minor not significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects would occur from parts of MCA 51 beyond these ranges.
1097. Some limited significant effects on MCA 43: Lundy and Outer Bristol Channel have been assessed as occurring within the western extents of this seascape. Moderate

significant effect during construction and decommissioning at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range, to moderate-minor not significant in parts of the seascape to the east towards Lundy at approximately 35km from the Windfarm Site. Significant effects are notably avoided within the seascape area that is coincidental with SCA 15: Lundy, which is most closely associated with the island itself.

1098. Non-significant effects have been assessed for all remaining MCAs within English and Welsh waters within the study area.

1099. Non-significant effects on landscape character have been assessed for LCT 6: Lundy Island.

1100. The Pembrokeshire Coast National Park (PCNP) is located to the north of the study area. This part of the PCNP is open at its southern seaward limit. There will be no significant effects on views from the PCNP, its perceived landscape character or Special Qualities, which will be subject to, at most, low levels of change as a result of the indirect visual effect of the WTGs and OSP within the Windfarm Site. This is primarily because the Windfarm Site will be viewed at a very long distance of more than 54.7km, and with a very small lateral extent in views, such that its influence is diminished.

1101. The North Devon Coast Area of Outstanding Natural Beauty (NDCAONB) is located to the east of the study area. This coastal AONB is open at its western seaward limit. There will be no significant effects on views from the NDCAONB, its perceived landscape character or Special Qualities, which will be subject to, at most, low levels of change as a result of the indirect visual effect of the Windfarm Site. This is primarily because the Windfarm Site will be viewed at a very long distance of more than 52.7km, and with a very small lateral extent in views, such that its influence is diminished.

1102. Three 'local sections' of the Cornwall Area of Outstanding Natural Beauty (CAONB) fall within the study area; Section 01: Hartland (Marsland to Menapoint Church), Section 02: Pentire Point to Widemouth, and Section 04: Carnewas to Stepper Point. The three sections of this coastal AONB are open at their seaward limit. There will be no significant effects on views from the CAONB, its perceived landscape character or Special Qualities, which will be subject to, at most, low levels of change as a result of the indirect visual effect of the WTGs and OSP within the Windfarm Site. This is primarily because the Windfarm Site will be viewed at a very long distance of more than 52.3km, and with a very small lateral extent in views, such that its influence is diminished.

1103. It is considered that the Windfarm Site avoids compromising the purposes of the PCNP, NDCAONB, and CAONB designations, despite the fact that it may be visible from within these designated landscapes (in periods of excellent visibility) and that it may impact certain Special Qualities. Visibility of the Windfarm Site alone will not undermine the statutory purpose of these designated landscapes: harm will not be caused to their Special Qualities, or views. The natural beauty of the PCNP, NDCAONB, and COANB will remain, and opportunities will still be present for understanding and enjoyment of their Special Qualities, and the Windfarm Site will not therefore undermine the statutory purposes of their designation.
1104. No measures are available to completely mitigate the effects on views experienced by visual receptors, however measures are embedded as part of the Windfarm Site to avoid, minimise, or reduce any significant environmental effects on seascape, landscape, and visual receptors, as far as possible. The siting of the offshore WTGs and OSP of the Offshore Project at a long distance offshore forms the key embedded measure which minimises potential for significant effects experienced in coastal views.
1105. The maximum height of the WTGs has been reduced since the scoping stage and this reduces the potential effects on the seascape, landscape, and visual amenity.
1106. Given the sensitivity of the night skies within the Study area to lighting the Applicant has committed to introduce mitigation for the aviation lighting effects. It is proposed that a detection system will be mounted on the offshore WTGs, and these will detect when visibility is greater than 5km. When this is the case the aviation lights will be dimmed to 10% of the 2000 candela maximum so that the intensity of the light emitted would be 200 candela. This accords with CAA guidance.
1107. It has been assessed that there would be no significant cumulative effects as a result of the addition of the Offshore Project to a context containing operational, under construction, consented, application or scoping stage cumulative development.



*Table 19.31 Summary of potential impacts for offshore seascape, landscape, and visual amenity during construction and decommissioning, operation, and maintenance, of the Offshore Project*

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
<b>Construction and Decommissioning</b>								
<b>Impact on representative views</b>	Viewpoint 1: Stack Rocks, Pembrokeshire	High	High	High	Low	Moderate-minor not significant adverse	None	Moderate-minor not significant adverse
	Viewpoint 2: Hartland Point, on South West Coast Path (SWCP)	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 3: Vicarage Cliff, west of Morwenstow on SWCP	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 4: Compass Point, Storm Tower, south of Bude (on SWCP)	High	Medium-high	High	Low	Minor not significant adverse		Minor not significant adverse
	Viewpoint 5: Penhalt Cliff Ordnance	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	Survey Viewpoint							
	Viewpoint 6: Lundy Island	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 7: Rosslare to Cherbourg Ferry	Medium-low	Medium-low	Medium-low	Low	Minor not significant adverse		Minor not significant adverse
	Viewpoint 8: Tintagel	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 9: Pentire Head (on SWCP)	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 10: Embury Beacon	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the South West Coast Path and Pembrokeshire</b>	SWCP: Section 1: North Devon – Clovelly to Hartland Quay	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Susceptibility				Significance	Mitigation measure	Residual Effects
		Value	Susceptibility	Sensitivity	Magnitude			
<b>Coast Path national trails</b>	SWCP: Section 2: North Devon / Cornwall – Hartland Quay to Bude	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 3: Cornwall – Bude to Crackington Haven	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 4: Cornwall – Crackington Haven to Tintagel	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 5: Cornwall – Tintagel to Port Isaac	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 6: Cornwall – Port Isaac to Padstow	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 7: Cornwall – Padstow to Porthcothan	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	PCP: Section 12 Angle to Freshwater West	High	High	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	PCP: Section 13 Freshwater West to Broad Haven South	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	PCP: Section 14 Broad Haven South to Skrinkle Haven	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on Seascape Character</b>	MCA 51: Bristol Channel Approaches	Medium	Medium-high	Medium	Medium within approximately 20km of the Windfarm Site, reducing with distance to medium-low in the geographic extent of this MCA to the east towards Lundy up to approximately 35km from the Windfarm Site.	Moderate within approximately 20km of the Windfarm Site, reducing with distance beyond this range to moderate-minor not significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of MCA beyond these ranges		Moderate within approximately 20km of the Windfarm Site, reducing with distance beyond this range to moderate-minor not significant in parts of the seascape to the east

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
					All remaining parts of the MCA would experience a low magnitude of impact.			towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of MCA beyond these ranges
	MCA 43: Lundy and Outer Bristol Channel	Medium-high	Medium-high	Medium-high	Medium at the closest point of this MCA to the Windfarm Site, reducing with distance to medium-low in the western geographic extent of this MCA, west of Lundy Island, up to approximately 35km from the Windfarm Site. All remaining	Moderate significant effect during operation and maintenance at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range to moderate-minor not significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of		Moderate significant effect during operation and maintenance at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range to moderate-minor not

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
					parts of the MCA would experience a low magnitude of impact.	MCA beyond these ranges.		significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of MCA beyond these ranges.
	MCA 42: Bideford Bay and Taw Torridge Estuary	High	Medium	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	MCA 44: Hartland Point to Port Isaac Bay	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	MCA 45: Port Gaverne to St. Ives Bay	High	Medium-high	Medium-high	Low	Minor not significant adverse		Minor not significant adverse

Potential impact	Receptor	Susceptibility			Magnitude	Significance	Mitigation measure	Residual Effects
		Value	Susceptibility	Sensitivity				
<b>Impact on Seascape Character - Wales</b>	MCA 18: West Pembrokeshire Coastal Waters and Islands	High	Medium-high	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 19: West Pembrokeshire Islands, Bars and Inshore Waters	Medium-high	Medium	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 20: Irish Sea Open Waters	Medium	Medium	Medium	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 21: Milford Haven	Medium-high	Medium-high	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 22: South Pembrokeshire Coastal and Inshore Waters	High	Medium-high	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 23: South Pembrokeshire Open Waters	Medium	Medium	Medium	Low	Minor not significant adverse		Minor not significant adverse



Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	MCA 28: Bristol Channel (Wales)	Medium	Medium	Medium	Low-negligible	Minor not significant adverse		Minor not significant adverse
<b>Impact on Landscape Character</b>	LCT 6: Lundy Island	Medium-high	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the Special Qualities of the NDCAONB</b>	Special Quality 1: Distinctive Coastal Scenery	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Special Quality 2: A Landscape and Seascape of High Visual Quality	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the Special Qualities of the CAONB</b>	Section 01: Hartland (Marstrand to Menapoint Church)	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Section 02: Pentire Point to Widemouth	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	Section 04: Carnewas to Stepper Point	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the Special Qualities of the PCNP</b>	1. Coastal splendour	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	3. Diversity of Landscape	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	8. Islands	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	10. Space to breathe	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	11. Remoteness, tranquillity, and wildness	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	12. Diversity and Combination	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	of Special Qualities							
<b>Operation and Maintenance</b>								
<b>Impact on representative views</b>	Viewpoint 1: Stack Rocks, Pembrokeshire	High	High	High	Low	Moderate-minor not significant adverse	None	Moderate-minor not significant adverse
	Viewpoint 2: Hartland Point, on South West Coast Path (SWCP)	High	high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 3: Vicarage Cliff, west of Morwenstow on SWCP	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 4: Compass Point, Storm Tower, south of Bude (on SWCP)	High	Medium-high	High	Low	Minor not significant adverse		Minor not significant adverse
	Viewpoint 5: Penhalt Cliff Ordnance	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	Survey Viewpoint							
	Viewpoint 6: Lundy Island	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 7: Rosslare to Cherbourg Ferry	Medium-low	Medium-low	Medium-low	Low	Minor not significant adverse		Minor not significant adverse
	Viewpoint 8: Tintagel	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 9: Pentire Head (on SWCP)	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Viewpoint 10: Embury Beacon	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the South West Coast Path and Pembrokeshire</b>	SWCP: Section 1: North Devon – Clovelly to Hartland Quay	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
<b>Coast Path national trails</b>	SWCP: Section 2: North Devon / Cornwall – Hartland Quay to Bude	High	Medium-high	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 3: Cornwall – Bude to Crackington Haven	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 4: Cornwall – Crackington Haven to Tintagel	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 5: Cornwall – Tintagel to Port Isaac	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 6: Cornwall – Port Isaac to Padstow	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	SWCP: Section 7: Cornwall – Padstow to Porthcothan	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	PCP: Section 12 Angle to Freshwater West	High	High	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	PCP: Section 13 Freshwater West to Broad Haven South	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	PCP: Section 14 Broad Haven South to Skrinkle Haven	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on Seascape Character - England</b>	MCA 51: Bristol Channel Approaches	Medium	Medium-high	Medium	Medium within approximately 20km of the Windfarm Site, reducing with distance to medium-low in the geographic extent of this MCA to the east towards Lundy up to approximately 35km from the Windfarm Site.	Moderate within approximately 20km of the Windfarm Site, reducing with distance beyond this range to moderate-minor not significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of MCA beyond these ranges		Moderate within approximately 20km of the Windfarm Site, reducing with distance beyond this range to moderate-minor not significant in parts of the seascape to the east

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
					All remaining parts of the MCA would experience a low magnitude of impact.			towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of MCA beyond these ranges
	MCA 43: Lundy and Outer Bristol Channel	Medium-high	Medium-high	Medium-high	Medium at the closest point of this MCA to the Windfarm Site, reducing with distance to medium-low in the western geographic extent of this MCA, west of Lundy Island, up to approximately 35km from the Windfarm Site. All remaining	Moderate significant effect during operation and maintenance at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range to moderate-minor not significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of		Moderate significant effect during operation and maintenance at the closest point of the MCA at approximately 20.2km from the Windfarm Site, reducing with distance beyond this range to moderate-minor not



Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
					parts of the MCA would experience a low magnitude of impact.	MCA beyond these ranges.		significant in parts of the seascape to the east towards Lundy up to approximately 35km from the Windfarm Site. Minor not significant effects from parts of MCA beyond these ranges.
	MCA 42: Bideford Bay and Taw Torridge Estuary	High	Medium	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	MCA 44: Hartland Point to Port Isaac Bay	High	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	MCA 45: Port Gaverne to St. Ives Bay	High	Medium-high	Medium-high	Low	Minor not significant adverse		Minor not significant adverse

Potential impact	Receptor	Susceptibility				Significance	Mitigation measure	Residual Effects
		Value	Susceptibility	Sensitivity	Magnitude			
<b>Impact on Seascape Character - Wales</b>	MCA 18: West Pembrokeshire Coastal Waters and Islands	High	Medium-high	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 19: West Pembrokeshire Islands, Bars and Inshore Waters	Medium-high	Medium	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 20: Irish Sea Open Waters	Medium	Medium	Medium	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 21: Milford Haven	Medium-high	Medium-high	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 22: South Pembrokeshire Coastal and Inshore Waters	High	Medium-high	Medium-high	Low-negligible	Minor not significant adverse		Minor not significant adverse
	MCA 23: South Pembrokeshire Open Waters	Medium	Medium	Medium	Low	Minor not significant adverse		Minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	MCA 28: Bristol Channel (Wales)	Medium	Medium	Medium	Low-negligible	Minor not significant adverse		Minor not significant adverse
<b>Impact on Landscape Character</b>	LCT 6: Lundy Island	Medium-high	Medium-high	Medium-high	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the Special Qualities of the NDCAONB</b>	Special Quality 1: Distinctive Coastal Scenery	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Special Quality 2: A Landscape and Seascape of High Visual Quality	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the Special Qualities of the CAONB</b>	Section 01: Hartland (Marstrand to Menapoint Church)	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	Section 02: Pentire Point to Widemouth	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	Section 04: Carnewas to Stepper Point	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse
<b>Impact on the Special Qualities of the PCNP</b>	1. Coastal splendour	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	3. Diversity of Landscape	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	8. Islands	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	10. Space to breathe	High	High	High	Low	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	11. Remoteness, tranquillity, and wildness	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse
	12. Diversity and Combination	High	High	High	Low-negligible	Moderate-minor not significant adverse		Moderate-minor not significant adverse

Potential impact	Receptor	Value	Susceptibility	Sensitivity	Magnitude	Significance	Mitigation measure	Residual Effects
	of Special Qualities							

## 19.20 References

Blue Gem Energy Ltd. (2020). Project Valorous Environmental Impact Assessment Scoping Report.

Bureau of Ocean Energy Management (2013) Offshore Wind Turbine Visibility and Visual Impact Threshold Distance Study.

Cornwall Council (2016) Cornwall Local Plan Strategic Policies 2010-2030.

Cornwall Council (2007) Landscape Character Assessment.

Cornwall AONB (2022) The Cornwall AONB Management Plan 2022-2027.

Council for the Protection of Rural England (CPRE) (2016) England's Light Pollution and Dark Skies.

Department of Energy & Climate Change (2011a). Overarching National Policy Statement for Energy. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47854/1938-overarching-nps-for-energy-en1.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf) [Accessed March 2023].

Department of Energy & Climate Change (2011b). Overarching National Policy Statement for Renewable Energy

Infrastructure. Online. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37048/1940-nps-renewable-energy-en3.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-nps-renewable-energy-en3.pdf) [Accessed March 2023].

Devon County Council. Devon Landscape Character Areas. Available at: <https://www.devon.gov.uk/planning/planning-policies/landscape/devons-landscape-character-assessment/>

Floventis Energy Ltd. (2022) LÎyr Floating Offshore Wind Project Scoping Report.

IEMA (2015) Environmental Impact Assessment Guidance to Shaping Quality Development.

IEMA (2017) Delivering Proportionate EIA. A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice.

Landscape Institute and IEMA (2013) - Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3).

Landscape Institute (2019). Visual Representation of Development Proposals.

Landscape Institute (2021). Assessing landscape value outside national designations, Technical Guidance Note (TGN) 02/21.

Marine Management Organisation (MMO) (2019) An Approach to Seascape Sensitivity Assessment.

Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1005759/NPPF\\_July\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf). Accessed 21/09/2022. MMO (2018) Seascape Character Assessment for the South West Inshore and Offshore marine plan areas.

MMO (2018) 1134: Seascape Character Assessment for the South West Inshore and Offshore marine plan areas.

National Trails, England Coast Path - South West Route Description. Available at [Route Description - England Coast Path - South West - National Trails](#)

National Trust, North Devon Coast AONB, Exmoor, Exmoor National Park Authority, North Devon Council, Torridge Local Council and Natural England (2015) North Devon and Exmoor Seascape Character Assessment.

Natural England (2012). An Approach to Seascape Character Assessment.

Natural England (2014). An Approach to Landscape Character Assessment.

Natural England (2019). An Approach to Landscape Sensitivity Assessment

Natural Resource Wales (2015). National Seascape Assessment for Wales. NRW Evidence Report 80. 78pp, Natural Resources Wales, Bangor (Wales).

Natural Resources Wales (2019) Seascape and visual sensitivity to offshore wind farms in Wales: Strategic assessment and guidance (White, S. Michaels, S. King, H, 2019).

Natural Resources Wales (2021). Tranquillity and Place – Dark Skies. Report No: 514.

NatureScot (2017). Siting and Designing Wind farms in the Landscape, Guidance (Version 3) (herein referred to as 'NatureScot Siting and Designing').

NatureScot (2017). Visual Representation of Wind farms, Guidance (Version 2.2) (herein referred to as 'NatureScot Visual Representation').

North Devon & Torridge Local Councils, Devon County Council and Natural England (2010) Joint Landscape Character Assessment for North Devon & Torridge Locals. Prepared by Land Use Consultants.



North Devon Council and Torridge District Council (2018) North Devon and Torridge Local Plan 2011-2031.

North Devon Coast AONB (2019) AONB Management Plan 2019-2024.

PCNPA (2020) Local Development Plan 2 (Replacement) – end date 2031.

PCNPA (2011 - 2020). Pembrokeshire Coast National Park Landscape Character Assessment Supplementary Planning Guidance.

PCNPA and NRW (2013) Seascape Character Assessment.

PCNPA (2018). Pembrokeshire Coast National Park Management Plan 2020-2024.

PCNPA (2019). Pembrokeshire Coast National Park Management Plan 2015-2019 Background Paper: Special Qualities of PCNP.

PCNPA (2019). Pembrokeshire Coast National Park Management Plan (2020-2024) Background Paper: The State of the Park.

Pembrokeshire County Council, Landscape Character Assessment (Consultation Draft, 2019), Landscape Character Areas.

PCNPA, PCP route itinerary. Available at:

[Planning your walk - Pembrokeshire Coast National Park](#)

The Planning Inspectorate (2019) – Advice Note 17 Cumulative Effects Assessment.

The Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope.

Scottish Natural Heritage (NatureScot) (2012). Assessing the Cumulative Impact of Onshore Wind Energy Developments.

South West Coast Path Association, route itinerary. Available at: [52 day itinerary - South West Coast Path](#)

The Met Office, Visibility Definitions  
<https://www.metoffice.gov.uk/services/data/datapoint/code-definitions>

National Trust, (2020), Days Out (Visitor Attractions). Available at <https://www.nationaltrust.org.uk/days-out>.

Renewable UK (2013) Cumulative Effects Assessment Guidelines. Guiding Principles for Cumulative Impacts Assessment in Offshore Windfarms.

Scottish Natural Heritage (SNH) (2017) Visual Representation of Wind Farms, Guidance (Version 2.2).

Scottish Natural Heritage (2012). Assessing the Cumulative Impact of Onshore Wind Energy Developments.

UK Government (2011) UK Marine Policy Statement.

University of Newcastle (2002). Visual Assessment of Windfarms Best Practice. Scottish Natural Heritage Commissioned Report F01AA303A

White Consultants with Northumbria University (March 2020). Offshore Energy Strategic Environmental Assessment. Review and update of Seascape and Visual Buffer study for Offshore Wind farms.



# White Cross Offshore Windfarm Environmental Statement

Appendix 19.A: SLVIA  
Methodology

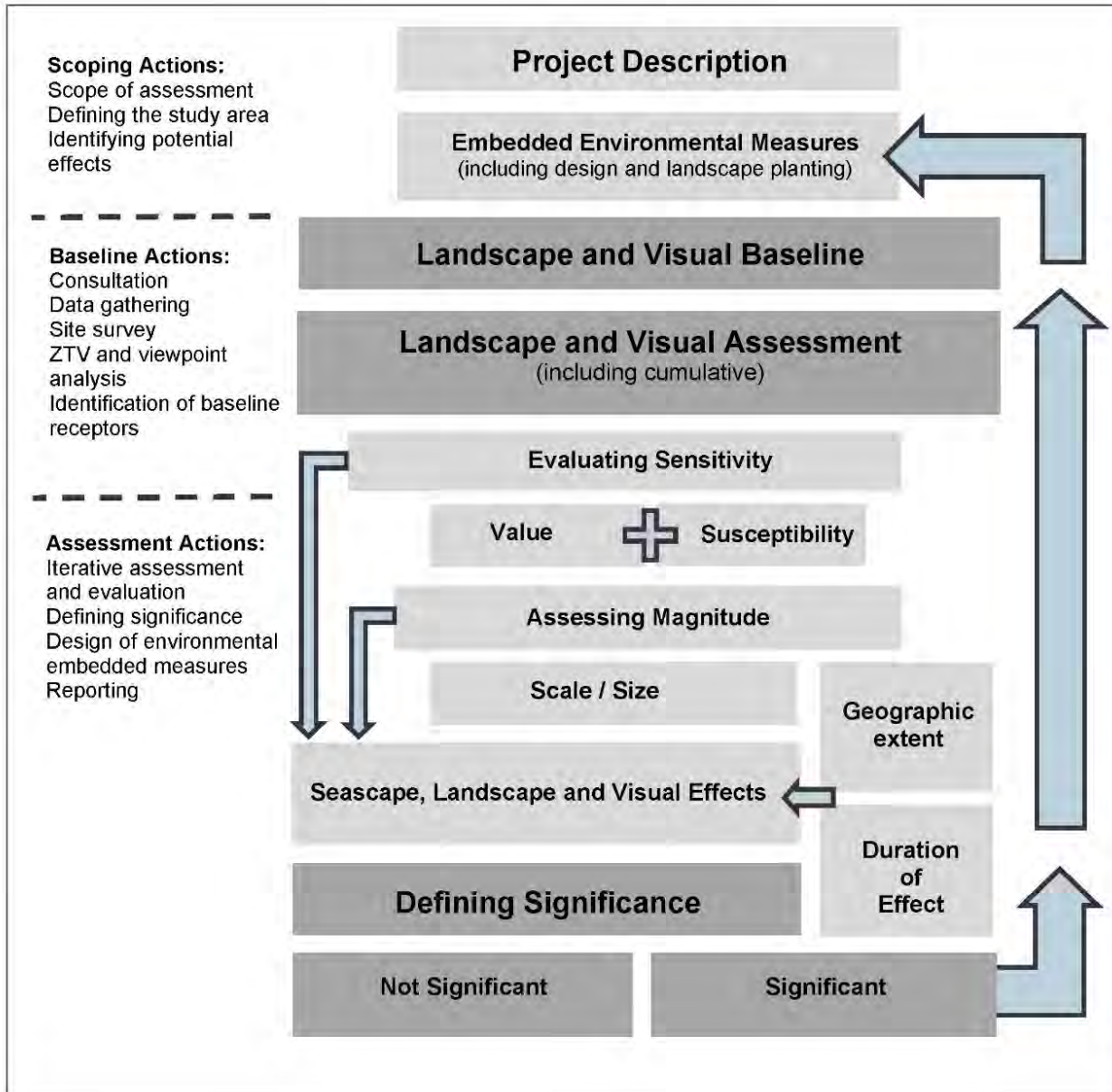


## Appendix 19.A: SLVIA Methodology

### 19.20.1 Overview

1. The assessment has been undertaken in accordance with the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3<sup>rd</sup> edition (GLVIA3), and other best practice guidance. An overview of the SLVIA methodology is provided here and illustrated, diagrammatically, in **Plate 19.A.1**.
2. The SLVIA assesses the likely effects that the construction and decommissioning, operation and maintenance, of the Offshore Project on the seascape, landscape, and visual resource, encompassing effects on seascape / landscape character, landscapes and coastal areas designated or protected for their special qualities and value, visual effects, and cumulative effects.
3. The SLVIA is based on the Project Design Envelope described in **Chapter 5: Project Description** and the realistic worst-case scenario identified as appropriate for the SLVIA as described in **Section 19.3.3**. In compliance with the Environmental Impact Assessment (EIA) Regulations (2017), the likely significant effects of a realistic 'worst case' scenario are assessed and illustrated in the SLVIA.
4. Essentially, the seascape, landscape, and visual effects (and whether they are significant) is determined by an assessment of the 'sensitivity' of each receptor, or group of receptors, and the 'magnitude of impact' that would result from the Offshore Project.
5. The evaluation of sensitivity takes account of the value and susceptibility of the receptor to the visible Offshore Project infrastructure. This is combined with an assessment of the magnitude of impact, which takes account of the size, scale, duration, geographic extent, reversibility (i.e., temporary, or permanent) of the proposed change, and whether this change is direct or indirect. By combining assessments of sensitivity and magnitude of impact, a level of seascape, landscape or visual effect can be evaluated and determined. The resulting 'level of effect' is described in terms of whether it is 'significant' or 'not significant.'

*Plate 19.A.1 Overview of approach to SLVIA*



6. The assessment has also considered the cumulative effects likely to result from the Windfarm Site and other similar proposed developments.
7. An appropriate and proportionate level of assessment has been undertaken and agreed through consultation and at the Scoping stage and during further consultation. The level of assessment may be 'simple' (requiring desk-based data analysis) or 'detailed' (requiring site surveys and investigations in addition to desk-based analysis).

8. The SLVIA unavoidably involves a combination of quantitative and qualitative assessment. Wherever possible, a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach.

#### 19.20.1.1 Interface between seascape and landscape assessment

9. The Marine Policy Statement (MPS) (UK Government, 2011) states the European Landscape Convention (ELC) definition of landscape (which includes marine areas) as *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*. It adds that in the context of the UK Marine Policy Statement, *"references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other."*
10. The majority of the SLVIA study area consists of sea. In England, seascape character *"principally applies to coastal and marine areas seaward of the low-water mark"* and landscape character *"principally applies to terrestrial areas lying to the landward side of the high-water mark"* (Natural England, 2012, p7, Box 1). Although these definitions are clear in the guidance, the importance of the interaction of sea, coastline and land as perceived by people is also highlighted in subsequent definitions of seascape in the guidance (Natural England, 2012), indicating a subtler transition between seascape and landscape than defined in the guidance.
11. In order to address this and avoid under-valuing the inter-tidal area between the mean low and high-water mark, the SLVIA assesses 'offshore' seascape effects on Marine Character Areas (MCAs) in England and Wales where they are seaward of the mean high water mark.
12. The effect on terrestrial landscape character has been assessed on landscape character areas (LCAs) for Lundy Island. LCAs and Pembrokeshire Seascape Character Assessment (PCNP, 2013) Seascape Character Areas (SCAs) that include land which has a strong visual relationship with the sea/tidal waters and coastal landscapes such as dunes or cliffs lying to the landward side of the mean low-water mark, have been used to inform the assessment of potential effects on the Special Qualities of landscape planning designations within the study area.

#### 19.20.1.2 Defining the study area

13. Details of the location of the Offshore Project and the offshore infrastructure are set out within **Chapter 5: Project Description**.

14. The Offshore Export Cables will be constructed along the sea-bed and would therefore not be visible during operation and maintenance. During the construction and decommissioning of the Offshore Export Cables the only effect on the seascape, landscape and visual resource would be the visibility of a small number of vessels out at sea, which are a common occurrence as part of the baseline character and views. It is considered that, even taking into account the designated status of the landscapes along the coastline closest to the Offshore Export Cable Corridor and at the landfall (**Figure 2.13.2**), such temporary, short duration effects are not likely to give rise to a significant effect.
15. The study area is defined by the distance over which impacts on identified receptors from all the visible offshore infrastructure (i.e., within the Windfarm Site) may occur and by the location of any receptors that may be effected by those potential impacts.
16. IEMA Guidance (IEMA, 2015 and 2017) recommends a proportionate ES focused on the significant effects and a proportionate ES topic chapter. An overly large SLVIA study area may be considered disproportionate if it makes the understanding the key impacts of the Proposed Development more difficult.
17. This is supported by LVIA Guidance produced by the Landscape Institute (GLVIA3) (Landscape Institute, 2013) (para 3.16). This guidance recommends that "*The level of detail provided should be that which is reasonably required to assess the likely significant effects*". Para 5.2 and p70 of GLVIA3 also states that "*The study area should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner*".
18. 13.2.3.4 Other wind farm specific guidance, such as NatureScot's Visual Representation of Wind Farms Guidance (NatureScot, 2017) recommends that ZTV distances are used for defining study area based on WTG height. This guidance recommends a 45km radius for WTGs greater than 150m to blade tip (para 48, p12), however it does not go beyond turbines above 150m in height. The height of current offshore WTG models has now exceeded the heights covered in this guidance. The NatureScot guidance recognises that greater distances may need to be considered for larger WTGs used offshore, as is the case for the SLVIA study area for the Proposed Development.
19. The spatial scope of the SVLIA is defined as 60km from the Offshore Project (for the purposes of the assessment, this comprises the maximum extent of the Windfarm Site), which has formed the basis of the study area described in this section and illustrated on **Figure 19.1**. This has been agreed with consultees as set out in **Table 19.12**.



20. The Windfarm Site is located offshore in the Celtic Sea, approximately 52km from the closest section of the mainland North Cornwall and Devon coastline, and approximately 43.7km from the closest land at Lundy Island. The Pembrokeshire coastline lies approximately 54.7km to the north-east of the Windfarm Site at its closest point.
21. The SLVIA study area is defined as the outer limit of the area where significant effects could occur. This has been established using professional judgement and supported by guidance, consultations with relevant stakeholders, the Zone of Theoretical Visibility (ZTVs) (**Figure 19.4** and **Figure 19.5**) and identification of potential impact pathways.
22. The influence of earth curvature begins to limit the apparent height and visual influence of the WTGs visible at long distance (such as over 60km), as the lower parts of the turbines may be partially hidden behind the apparent horizon, leaving only the upper parts visible above the skyline.
23. The variation of weather conditions influencing visibility off the English coast has also informed the SLVIA study area. Visibility analysis in the Offshore Energy SEA (White Consultants, March 2020), which considered Met Office visibility data for eight coastal stations, recorded a visual range just under 24km around 50% of the time, just under 30km 33% of the time, around 34km for 20% of the time, and 40km 10% of the time.
24. In considering the SLVIA study area, the sensitivity of the receiving seascape, landscape and visual receptors has also been reviewed, taking particular account of the landscape designations shown in **Figure 19.11**, and other principal visual receptors.
25. Potential cumulative effect interactions with other offshore wind farms have also influenced the definition of the SLVIA study area. Other potential cumulative offshore wind farms within the SLVIA study area are shown in **Figure 19.1**.
26. The SLVIA study area includes the seascapes of the Celtic Sea, an area of the Atlantic Ocean; to the north are the coastal waters off South Pembrokeshire; to the east is the Bristol Channel; to the south-east are the coastal waters off north Devon and Bideford Bay; and, to the south area the coastal waters off North Cornwall, from Hartland Point to Trevoze Head.
27. Seascape, landscape, and visual effects of the Windfarm Site outside the 60km study area are scoped out of this assessment as they are considered unlikely to be significant.

## 19.20.2 Iterative assessment and design

28. The SLVIA is part of an iterative EIA process which aims to ‘design out’ significant effects via a range of environmental measures including avoidance and designs that aim to reduce or eliminate significant effects. Design is an integrated part of the SLVIA process and environmental measures related to landscape design and management can be an important tool to mitigate significant effects. The EIA process can also call on a range of environmental and technical specialists that contribute other forms of mitigation that may also bring a range of benefits. Potentially significant seascape, landscape and visual effects and the constraints and opportunities connected with their resolution are identified through the SLVIA process. Where possible embedded environmental measures (Commitments) are incorporated into the offshore components of the Offshore Project in order to mitigate seascape, landscape and visual effects.
29. Embedded environmental measures are recorded in **Section 19.3.2.4**, **Section 19.3.2.5**, and **Section 19.3.4**, which details how the measures has been secured as well as documenting the design evolution of the Offshore Project.

### 19.20.2.1 Potential effects during construction and decommissioning

30. Potential effects on the seascape, landscape and visual resource are likely during the construction and decommissioning of the Offshore Project during the construction and decommissioning periods, including:
- Seascape effects:
    - Effects on perceived seascape character, arising as a result of the construction and decommissioning activities (including laying new offshore export cables to shore) and structures located within the Windfarm Site, which may alter the seascape character of the Windfarm site itself and the perceived character of the wider seascape through visibility of these changes.
  - Landscape effects:
    - Effects on perceived landscape character, arising as a result of the construction and decommissioning activities and structures that will be visible from the coast and may therefore impact the perceived character of the landscape.
    - Effects on the special landscape qualities and integrity of designated landscapes as a result of the above construction and decommissioning activities.
  - Visual effects:

- Effects on views and visual amenity experienced by people from principal visual receptors and representative viewpoints, arising as a result of the construction and decommissioning activities and structures, that will be visible from the coast.
- Cumulative effects:
  - Effects of construction of the WTGs and OSP of the Offshore Project that have the potential to contribute to cumulative seascape, landscape and visual effects including effects on seascape, landscape, and visual amenity due to inter-visibility with other planned developments.

#### 19.20.2.2 Potential effects during Operation and Maintenance

31. Potential effects on the seascape, landscape and visual resource are likely during the operation of the Offshore Project over its operational lifetime, including:

- Seascape effects:
  - Effects on perceived seascape character (MCAs), arising as a result of the operational WTGs, OSP and maintenance activities located within the windfarm site, which may alter the seascape character of the windfarm site itself and the perceived character of the wider seascape.
- Landscape effects:
  - Effects on perceived landscape character (LCAs and Designations), arising as a result of the operational WTGs, OSP and maintenance activities, which will be visible from the coast and may therefore impact the perceived character of the landscape. Effects on defined special qualities of designated landscapes.
- Visual effects:
  - Effects on views and visual amenity experienced by people as principal visual receptors and representative viewpoints, arising as a result of the operational WTGs, OSP and maintenance activities, marine navigation and aviation lighting.
- Cumulative effects:
  - Effects of operation of the WTGs and OSP of the Offshore Project that have the potential to contribute to cumulative seascape, landscape and visual effects including effects on seascape, landscape and visual amenity due to inter-visibility with other planned developments.

#### 19.20.3 Guidance, data sources and site surveys

32. This methodology accords with Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3). Where it diverges from specific aspects of the

guidance, in a small number of areas, reasoned professional justification for this is provided as follows.

33. GLVIA3 sets out an approach to the assessment of magnitude of impact in which three separate considerations are combined within the magnitude of impact rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. This approach is to be applied in respect of both landscape and visual receptors. It is considered that the process of combining all three considerations in one rating can distort the aim of identifying significant effects of wind farm development. For example, a high magnitude of impact, based on size or scale, may be reduced to a lower rating if it occurred in a localised geographical area and for a short duration. This might mean that a potentially significant effect could be overlooked if effects are diluted down due to their limited geographical extents and/or duration or reversibility.
34. The consideration of the size or scale of the effect, its geographical extent and its duration and reversibility are kept separate, by basing the magnitude of impact primarily on size or scale to determine where significant and non-significant effects occur, and then describing the geographical extents of these effects and their duration and reversibility separately. Duration and reversibility are stated separately in relation to the assessed effects (i.e., as short/medium/long-term and temporary/permanent) and are considered as part of drawing together conclusions about significance and combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.
35. The SLVIA assessment methodology utilises six word scales of magnitude of impact - high, medium-high, medium, medium-low, low, and negligible, which are preferred to the “maximum of five categories” suggested in GLVIA3 (3.27), as a means of clearly defining and summarising magnitude of impact judgements.
36. These are not new diversions and follow practice established on other Nationally Significant Infrastructure Projects (NSIP) such as East Anglia TWO, Norfolk Vanguard, and Thanet Extension.
37. A full list of references, providing guidance on methodology is provided in **Section 19.20**.
38. Whilst many of these guidance documents have been prepared by NatureScot for projects in Scotland, in the absence of alternative guidelines they have become best practice across the UK. The preparation of visual representations that accord with this NatureScot guidance has been agreed with consultees.

39. A list of the data sources used for this assessment is provided in **Section 19.3.5**.

#### **19.20.4 Appropriate level of assessment**

40. The assessment of whether an effect has the potential to be of likely significance has been based upon review of existing evidence base, consideration of commitments made (embedded measures), professional judgement and where relevant, recommended aspect specific methodologies and established practice. In applying this judgement, use has been made of a simple test that to be significant an effect must be of sufficient importance that it should be taken into consideration when making a development control decision.
41. The Scoping Report (White Cross Offshore Windfarm, EIA Scoping Report, January 2022) presented a scoping assessment of the likely seascape, landscape and visual effects scoped in and scoped out of the SLVIA (Table 2.31). The Scoping Opinion (MMO, May 2022) provided the opinion of the MMO as to the scope, and level of detail, of the information to be provided in the Environmental Statement. The Scoping Opinion is summarised in **Section 19.3.8**. The effects of the Offshore Project on certain seascape, landscape and visual receptors were agreed as scoped out of the SLVIA in agreement with stakeholders and are not assessed any further in the SLVIA.
42. To ensure the provision of a proportionate EIA and an ES that is focused on likely significant effects, the SLVIA assessment takes into account the considerable levels of existing environmental information available and extensive local geographical knowledge and understanding of the study area gained from ongoing site selection analysis and environmental surveys.

#### **19.20.5 Desk-based and site survey work**

43. The SLVIA undertaken as part of the ES has been informed by desk-based studies and field survey work undertaken within the SLVIA study area. The landscape, seascape and visual baseline has been derived from a desk-based review of landscape and seascape character assessments and the ZTV, to identify receptors that may be impacted by the offshore components of the Offshore Project and produce written descriptions of their key characteristics and value.
44. Interactions identified between the Offshore Project and seascape, landscape and visual receptors have been used to predict potentially significant effects arising, with measures proposed to mitigate effects, where relevant.
45. For those receptors where a detailed assessment has required, primary data acquisition has been undertaken through a series of surveys. These surveys include

micro-siting of viewpoint locations, panoramic baseline photography and visual assessment survey from all representative viewpoints. The viewpoint photography and visual assessment surveys were undertaken in September 2022 and November 2022. Sea-based offshore surveys have not been undertaken as part of the SLVIA.

### 19.20.6 Assessing seascape / landscape effects

46. Landscape Effects are defined by the Landscape Institute in GLVIA 3, paragraphs 5.1 and 5.2 as follows: *“An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern ... is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.”*
47. In accordance with GLVIA 3 the term ‘landscape’ encompasses areas of ‘townscape’ and coastal areas of ‘seascape.’ Areas of landscape and seascape are relevant to this assessment, and they are described as follows.

#### 19.20.6.1 Landscape character

48. GLVIA 3, paragraph 5.4, advises that Landscape Character Assessment should be regarded as the main source for baseline studies and identifies the following factors which combine to create areas of distinct landscape character:
- *“the elements that make up the landscape in the study area including:*
    - *physical influences – geology, soils, landform, drainage and water bodies;*
    - *landcover, including different types of vegetation and patterns and types of tree cover; and*
    - *the influence of human activity, including land use and management, the character of settlements and buildings, and pattern and type of fields and enclosure.*
  - *The aesthetic and perceptual aspects of the landscape – such as, for example, its scale, complexity, openness, tranquillity or wildness;*
  - *The overall character of the landscape in the study area, including any distinctive Landscape Character Types or Areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each distinctive, usually by identification as key characteristics of the landscape.”*

#### 19.20.6.2 Seascape character

49. GLVIA 3 paragraph 5.6, advises that where LVIA is carried out in coastal or marine locations baseline studies must take account of seascape. Seascape is defined in the UK Marine Policy Statement, (UK Government, 2011) as *“landscapes with views of*

*the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.”*

50. 53 GLVIA 3 paragraph 5.6, identifies the following different factors which together determine seascape character:

- *“coastal features;*
- *views to and from the sea;*
- *particular qualities of the open sea;*
- *the importance of dynamic changes due to weather and tides;*
- *changes in seascapes due to coastal processes;*
- *cultural associations; and*
- *contributions of coastal features to orientation and navigation at sea.”*

### **19.20.7 Seascape / landscape effects**

51. In respect of the WTGs and OSP of the Offshore Project, the potential seascape / landscape effects, occurring during the construction and decommissioning, operation and maintenance, periods of the WTGs and OSP of the Offshore Project may therefore include, but are not restricted to the following:

- changes to seascape / landscape character and qualities: seascape/landscape character may be impacted through the incremental effect on characteristic elements, landscape patterns and qualities (including perceptual characteristics) and the addition of new features, the magnitude of which is sufficient to alter the overall seascape / landscape character within a particular area;
- changes to the perceived character of designated landscapes, including the National Parks and AONBs that will impact the special landscape qualities underpinning the designation and its integrity; and
- cumulative seascape / landscape effects: where more than one development of a similar type may lead to a cumulative effect.

52. Development may have a direct effect on the seascape, however all landscape effects arising from the WTGs and OSP of the Offshore Project on landscape character will be indirect effects, which will be perceived from the wider landscape, outside the Windfarm Site and its seascape / landscape.

### **19.20.8 Evaluating seascape / landscape sensitivity to change**

#### **19.20.8.1 Overview**

53. The assessment of sensitivity takes account of the seascape / landscape value and the susceptibility of the receptor to the WTGs and OSP of the Offshore Project.



54. Seascape / landscape sensitivity often varies in response to both the type and phase of the development proposed and its location, such that sensitivity needs to be considered on a case by case basis. It should not be confused with 'inherent sensitivity' where areas of the landscape may be referred to as inherently of 'high' or 'low' sensitivity. For example, a National Park may be described as inherently of high sensitivity on account of its designation and value, although it may prove to be less susceptible (and therefore sensitive) to a particular development. The susceptibility of seascape/landscape receptors has been assessed in relation to change arising from the specific development proposed, including the specific WTGs and OSP of the Offshore Project.
55. The sensitivity of a seascape/landscape character receptor is an expression of the combination of the judgements made about the susceptibility of the receptor to the specific type of change resulting from the WTGs and OSP of the Offshore Project and the value related to that receptor.

#### 19.20.8.2 Seascape / landscape susceptibility to change

56. The susceptibility of a seascape/landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the WTGs and OSP of the Offshore Project (i.e., change relating to the specific development proposal) without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies. Some landscape/seascape receptors are better able to accommodate development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or not also include special landscape qualities that underpin designated landscapes.
57. The assessment of the susceptibility of the seascape/landscape receptor to change has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement. Indicators of landscape/seascape susceptibility to the type of development proposed (construction and decommissioning, operation and maintenance, of the WTGs and OSP of the Offshore Project) are based on the following criteria. Indicators of higher and lower susceptibility are described further in **Table 19..**
- **Natural** – form/topography/character of hinterland (relevant landscape character type), coastal edge (cliffs, rocky coasts, upper beach, dunes, intertidal etc) and tidal range.
  - **Cultural/social** – use of the sea (navigation, fishing, leisure, energy etc), coast and hinterland (settlement, industry, marine related development such as

harbours, ports, industry, agriculture etc) and historic features on the coast (forts, castles, lighthouses etc).

- **Quality/condition** – intactness (degree of completeness or fragmentation visually, presence of detractors) and state of repair (condition of natural and built features/elements).
- **Aesthetic and perceptual** – scale of sea (in relation to coastal form or offshore areas); openness/enclosure (the degree and nature of enclosure of the sea by land and framing of views); exposure (degree of shelter/exposure); aspect (relationship with the sun); seascape pattern and foci (features and element on sea surface, coast and hinterland); tranquillity (movement, man-made structures, dark skies); wildness (sense of natural character uninfluenced by man); and remoteness (perceived distance from population and human interventions).
- **Visual characteristics** – key views from land to sea, sea to land and sea to sea, including nature of views and elevation, presence of iconic features; intervisibility of area with important receptors (amount, length, extent, nature of intervisibility and distance from development); and how seascape is experienced.
- **Relationship between seascape area and adjacent coast** – contribution of seascape to the setting of an important coast/hinterland or character area; and key relationships between hinterland, coastal edge, intertidal area and sea.

### 19.20.9 Value of the seascape/landscape receptor

58. The value of a seascape/landscape character receptor is a reflection of the value that society attaches to that seascape/landscape. The assessment of the seascape/landscape value has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following range of factors. Indicators of higher and lower value are described further in **Table 19..**

- **Seascape/landscape designations** - A receptor that lies within the boundary of a recognised landscape related planning designation, or within its immediate setting, will be of increased value, depending on the level of importance of the designation which may be international, national, regional, or local. The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment, however the absence of a landscape designation and location outside the immediate setting of a designation, may be an indicator of lower value.
- **Seascape/landscape quality** - The quality of a seascape/landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have

remained intact. A seascape/landscape with high scenic quality that contributes to special qualities, with consistent, intact, well-defined, and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character, has low scenic qualities and does not contribute to special qualities.


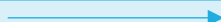
- **Seascape/landscape experience** - The experiential qualities that can be evoked by a landscape receptor can add to its value and relates to a number of factors including the perceptual responses it evokes (for example wildness, remoteness, tranquillity), the cultural associations that may exist in literature or history, or the iconic status of the seascape/landscape in its own right, the recreational value of the seascape/landscape, and the contribution of other values relating to the nature conservation or archaeology of the area.

#### 19.20.9.1 Seascape / landscape sensitivity rating

59. An overall sensitivity assessment of the seascape/landscape receptor has been made by combining the assessment of the value of the seascape/landscape character receptor and its susceptibility to change. The evaluation of seascape/landscape sensitivity has been applied for each seascape/landscape receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change. The basis for the assessments has been made clear using evidence and professional judgement in the evaluation of sensitivity for each receptor, informed by criteria that tend towards higher or lower sensitivity are set out in **Table 19**. below.

*Table 19.A.1 Seascape/ landscape sensitivity to change*

Higher sensitivity Value	Lower sensitivity
Designation: Presence of designated seascape/landscapes with national policy level protection or defined for their natural beauty. Perceived as lying within immediate seascape setting of a designation.	Seascape/landscapes without formal designation. Despoiled or degraded seascape/landscape with little or no evidence of being valued by the community. Not within seascape setting of a landscape designation.
Rarity: Rare or unique seascape/landscape character types, features or elements.	Widespread or 'common' seascape/landscape character types, features or elements.
Aesthetic/scenic qualities: Higher quality seascape/landscapes with consistent, intact and well-defined, distinctive attributes. A seascape/landscape with high scenic quality that contributes to special	Lower quality seascape/landscapes with indistinct elements or features that detract from its inherent attributes. A seascape/landscape with low scenic qualities that does not contribute to special

Higher sensitivity		Lower sensitivity	
qualities. Aesthetic / scenic or perceptual aspects of designated wildlife, ecological or cultural heritage features that contribute to seascape/landscape character.		qualities. Limited wildlife, ecological or cultural heritage features, or limited contribution to seascape/landscape character.	
Perceptual qualities: Seascape/landscape with perceptual qualities with high level of perceived wildness, high level of remoteness or high tranquillity.		Seascape/landscape with no apparent wildness, low levels of perceived remoteness or low tranquillity, often as a result of existing development influences.	
Cultural associations: Seascape/landscape with strong/rich cultural associations that contribute to scenic quality. Presence of heritage designations overlooking or within area of potential development.		Seascape/landscape with few/limited cultural associations. Absence of heritage designations overlooking or within area of potential development.	
Susceptibility			
Strength and robustness: Fragile seascape/landscape vulnerable and lacking the ability to accommodate change.		Robust landscape that is capable of reasonably accommodating change without undue adverse effects.	
Landscape scale: A smaller scale seascape/landscape, with complex, distinctive or small-scale coastal landforms.		A seascape/landscape of a suitably large enough scale to accommodate the development, with simple, broad and homogenous coastal landforms.	
Openness / enclosure: Openness may increase susceptibility if there is wider visibility, however open seascape/landscape may also be larger scale and simple which would decrease susceptibility.		Enclosed seascape/landscapes can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility	
Skyline: Distinctive undeveloped skylines with landmark features.		Developed, non-distinctive skylines without landmark features.	
Relationship with other development: Little association with other contemporary development, or strong associations occur with smaller scale or historic development.		Strong or direct association with other similar contemporary developments and seascape/landscape character influenced by development.	
Perceptual qualities: Perceptual qualities associated with particular scenic qualities, wildness or tranquillity.		Contemporary, cultivated / settled or developed landscapes with fewer perceptual qualities are likely to have a lower susceptibility.	
Seascape/landscape association: Adjacent seascape/landscape character context connected by associated character and views.		Host landscape character is separate from surrounding / adjacent seascape/landscape character with weak association.	
Sensitivity to change			
High 		Medium 	
		Low	

### 19.20.10 Seascape / landscape magnitude of impact

#### 19.20.10.1 Overview

60. The magnitude of impact effecting seascape/landscape receptors is an expression of the scale of the change that will result from the WTGs and OSP of the Offshore Project and is dependent on a number of variables regarding the size or scale of the change.

#### 19.20.10.2 Size or scale of change

61. This criterion relates to the size or scale of change to the seascape/landscape that will arise as a result of the WTGs and OSP of the Offshore Project, based on the following factors.

- **Seascape/landscape elements:** The degree to which the pattern of elements that makes up the seascape/landscape character will be altered by the WTGs and OSP of the Offshore Project, by removal or addition of elements in the seascape/landscape. The magnitude of impact will generally be higher if the features that make up the seascape/landscape character are extensively removed or altered, and/or if many new offshore elements are added to the seascape/landscape.
- **Seascape/landscape characteristics:** This relates to the extent to which the effect of the WTGs and OSP of the Offshore Project changes, physically or perceptually, the key characteristics of the seascape/landscape that may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity or irregularity, the nature of the seascape/landscape context, the grain or orientation of the seascape/landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the WTGs and OSP of the Offshore Project in relation to these key characteristics. If the WTGs and OSP of the Offshore Project are located in a seascape/landscape receptor that is already effected by other similar development, this may reduce the magnitude of impact if there is a high level of integration and the developments form a unified and cohesive feature in the seascape/landscape.
- **Seascape/landscape designation:** In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation. All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread effecting whole landscape receptors and their overall integrity.
- **Distance:** The size and scale of change is also strongly influenced by the proximity of the WTGs and OSP of the Offshore Project to the receptor and the extent to

which the development can be seen as a characterising influence on the landscape. Consequently, the scale or magnitude of impact is likely to be lower in respect of landscape receptors that are distant from the WTGs and OSP of the Offshore Project and / or screened by intervening landform, vegetation and built form to the extent that the scale of their influence on landscape receptors is small or limited. Conversely, landscapes closest to the development are likely to be most impacted. Host landscapes (where the development is located within a 'host' landscape character unit) will be directly impacted whilst adjacent areas of landscape character will be indirectly impacted.

- **Amount and nature of change:** The amount of the WTGs and OSP of the Offshore Project that will be seen. Visibility of the WTGs and OSP of the Offshore Project may range from one WTG blade tip to all of the WTGs; generally, the greater the amount of the WTGs and OSP of the Offshore Project that can be seen, the higher the scale of change. The degree to which the WTGs and OSP of the Offshore Project are perceived to be on the horizon or 'within' the seascape/landscape. Generally, the magnitude of impact is likely to be lower if the WTGs and OSP of the Offshore Project are largely perceived to be on the horizon at distance, rather than 'within' the seascape/landscape.

### 19.20.10.3 Seascape magnitude of impact rating

62. The 'magnitude' or 'degree of change' resulting from the WTGs and OSP of the Offshore Project is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' or 'Negligible'. In assessing magnitude of impact, the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e., as short / medium / long-term, and temporary / permanent). The basis for the assessment of magnitude for each receptor has been made clear using evidence and professional judgement. The levels of magnitude of impact that can occur are defined in **Table 19..**

*Table 19.A.2 Seascape/landscape magnitude of Impact*

Magnitude of impact	Description / reason
<b>High</b>	<p>A large-scale change and major loss of key seascape/landscape elements / characteristics or the addition of large scale or numerous new and uncharacteristic features or elements that will impact the seascape/landscape character and the special landscape qualities / integrity of a landscape designation.</p> <p>Directly impacting a host seascape/landscape receptor or indirectly impacting a nearby receptor.</p>



Magnitude of impact	Description / reason
<b>Medium-high</b>	Intermediate rating with combination of criteria from high or medium magnitude.
<b>Medium</b>	A medium scale change and moderate loss of some key landscape elements / characteristics or the addition of some new medium scale uncharacteristic features or elements that could partially impact the seascape/landscape character and the special landscape qualities / integrity of a landscape designation. Directly impacting a host seascape/landscape receptor or indirectly impacting a nearby receptor.
<b>Medium-low</b>	Intermediate rating with combination of criteria from medium or low magnitude.
<b>Low</b>	A small-scale change and minor loss of a few landscape elements / non key characteristics, or the addition of some new small-scale features or elements of limited characterising influence on seascape/landscape character / designations.
<b>Negligible</b>	A very small-scale change that may include the loss or addition of some landscape elements of limited characterising influence. The seascape/landscape characteristics and character will be unchanged.

### 19.20.11 Evaluating seascape/landscape effects and significance

63. The level of seascape/landscape effect is evaluated through the combination of seascape/landscape sensitivity and magnitude of impact. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in **Table 19.A.6** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the WTGs and OSP of the Offshore Project and their conclusion, has been presented in a comprehensive, clear and transparent manner.
64. Further information is also provided about the nature of the effects (whether these will be direct / indirect; temporary / permanent / reversible; beneficial / neutral / adverse or cumulative).

#### 19.20.11.1 Geographical extent

65. The geographic extent over which the seascape/landscape effects would be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead



expresses the extent of the receptor that will experience a particular magnitude of impact and therefore defines the geographical extents of the significant and non-significant effects.

66. The extent of the effects will vary depending on the specific nature of the WTGs and OSP of the Offshore Project and is principally assessed through analysis of the extent of perceived changes to the seascape/landscape character through visibility of the WTGs and OSP of the Offshore Project.
67. Landscape effects are described in terms of the geographical extent or physical area that will be impacted (and may be described as a linear or area measurement, or by features in the landscape that are impacted). This should not be confused with the scale of the development or its physical footprint. The manner in which the geographical extent of the seascape/landscape effect is described for different seascape/landscape receptors is explained as follows.
- **Seascape/landscape character:** The extent of the effects on seascape/landscape character will vary depending on the specific nature of the WTGs and OSP of the Offshore Project. This is not simply an expression of visibility or the extent of the ZTV, but also includes a specific assessment of the extent of seascape/landscape character that will be changed by the WTGs and OSP of the Offshore Project in terms of its character, key characteristics and elements.
  - **Landscape Designations:** In the case of a designated landscape, this refers to the extent the special landscape qualities of the designation are impacted and whether this can be defined in terms of area or linear measurements, or subjectively through professional judgement (with the support of an expert topic group and / or peer review) and whether the integrity of the designation is effected.

#### 19.20.11.2 Duration and reversibility

68. The duration and reversibility of seascape/landscape effects has been based on the period over which WTGs and OSP of the Offshore Project are likely to exist (during construction and decommissioning, operation and maintenance,) and the extent to which these elements would be removed (during decommissioning) and the effects reversed at the end of that period. Long-term, medium-term, and short-term seascape/landscape effects are defined as follows:
- long-term – more than 10 years (may be defined as permanent or reversible)
  - medium-term – 6 to 10 years
  - short-term – 1 to 5 years.

### 19.20.11.3 Significant seascape/landscape effects

69. A significant effect will occur where the combination of the variables results in the WTGs and OSP of the Offshore Project having a defining effect on the seascape/landscape receptor, or where changes of a lower magnitude impact a seascape/landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area or seascape/landscape character, impacting landscape elements, characteristics and / or perceptual aspects that are key to a nationally valued landscape are likely to be significant.

### 19.20.11.4 Non-significant landscape effects

70. A non-significant effect will occur where the effect of the WTGs and OSP of the Offshore Project is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly effect the special landscape quality or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or impacting lower value receptors are unlikely to be significant.

## 19.21 Assessing visual effects

71. Visual effects are concerned wholly with the effect of the WTGs and OSP of the Offshore Project on views, and the general visual amenity and are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows: *"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."*
72. Visual effects are identified for different receptors (people) who will experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:
- **Visual effect:** a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view
  - **Cumulative visual effects:** the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.
73. The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of each visual receptor (or range of sensitivities for

receptor groups) and the magnitude of impact that will be brought about by the construction and decommissioning, operation and maintenance, of the WTGs and OSP of the Offshore Project.

### **19.21.1 Zone of Theoretical Visibility**

74. Plans mapping the Zone of Theoretical Visibility (ZTV) are used to analyse the extent of theoretical visibility of the WTGs, across the Study area and to assist with viewpoint selection. The ZTV does not however, take account of the screening effects of buildings, localised landform and vegetation, unless specifically noted (see individual figures). As a result, there may be roads, tracks and footpaths within the study area which, although shown as falling within the ZTV, are screened or filtered by built form and vegetation, which will otherwise preclude visibility.
75. The ZTVs provide a starting point in the assessment process and accordingly tend towards giving a 'worst case' or greatest calculation of the theoretical visibility.

### **19.21.2 Viewpoint analysis**

76. Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the Study area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect will occur.
77. The assessment involves visiting the viewpoint location and / or viewing wirelines and photomontages prepared for each viewpoint location. The fieldwork is conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance.
78. The SLVIA therefore includes viewpoint analysis prepared for each viewpoint and presented as supporting assessment in the SLVIA. A summary table and the location of viewpoints on SLVIA figures is provided which assists in defining the direction, elevation, geographical spread, and nature of the potential visual effects and identify areas where significant effects are likely to occur. This approach seeks to provide clarity and confidence to consultees and decision makers by allowing the detailed judgements on the magnitude of visual change to be more readily scrutinised and understood.
79. The viewpoint analysis is used to assist the visual assessment of visual receptor locations reported in the ES.

### **19.21.3 Evaluating visual sensitivity to change**

### 19.21.3.1 Overview

80. In accordance with paragraphs 6.31-6.37 of GLVIA3 (Landscape Institute, 2013), the sensitivity of visual receptors has been determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the WTGs and OSP of the Offshore Project on the view and visual amenity.

### 19.21.4 Value of the view

81. The value of a view or series of views reflects the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following criteria.
- **Formal recognition** - The value of views can be formally recognised through their identification on OS or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view has been increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape.
  - **Informal recognition** - Views that are well-known at a local level and/or have particular scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature, and this can also add to their value. A viewpoint that is visited or appreciated by a large number of people will generally have greater importance than one gained by very few people.

### 19.21.5 Susceptibility to change

82. Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the WTGs and OSP of the Offshore Project. A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium-high, medium, medium-low or low and based on the following criteria.

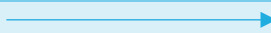

- **Nature of the viewer** - The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher sensitivity. Viewers travelling in cars or on trains will tend to have a lower sensitivity as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less sensitive to changes in views.
- **Experience of the viewer** - The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the WTGs and OSP of the Offshore Project may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position, over a long or short duration, and with high or low clarity. For example, if the principal outlook from a settlement is aligned directly towards the WTGs and OSP of the Offshore Project, the experience of the visual receptor will be altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at speed. The visual amenity experienced by the viewer varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the influence of the WTGs and OSP of the Offshore Project.

### 19.21.6 Visual sensitivity rating

83. An overall level of sensitivity has been applied for each visual receptor or view - high, medium-high, medium, medium-low or low - by combining individual assessments of the value of the view and the susceptibility of the visual receptor to change. Each visual receptor, meaning the particular person or group of people likely to be impacted at a specific viewpoint, is assessed in terms of their sensitivity. The basis for the assessments has been made clear using evidence and professional judgement in the evaluation of each receptor. Criteria that tend towards higher or lower sensitivity are set out in **Table 19.32**.

*Table 19.32 Visual sensitivity to change criteria*

Higher sensitivity Value	Lower sensitivity
Specific viewpoint identified in OS maps and / or tourist information and signage.	Viewpoint not identified in OS maps or tourist information and signage.

Higher sensitivity	Lower sensitivity
Facilities provided at viewpoint to aid the enjoyment of the view.	No facilities provided at viewpoint to aid enjoyment of the view.
View afforded protection in planning policy.	View is not afforded protection in planning policy.
View is within or overlooks a designated landscape, which implies a higher value to the visible landscape.	View is not within, nor does it overlook, a designated landscape.
View has informal recognition and well-known at a local level, as having particular scenic qualities.	View has no informal recognition and is not known as having particular scenic qualities.
View or viewpoint is recognised through references in art or literature.	View or viewpoint is not recognised in references in art or literature.
Susceptibility to change	
Viewer who is likely or liable to be influenced by the WTGs and OSP of the Offshore Project.	Viewer who is unlikely or not liable to be influenced by the WTGs and OSP of the Offshore Project.
Viewers such as walkers, or tourists, whose main attention and interest are on their surroundings.	Viewers whose main attention is not focused on their surroundings, such as people at work, or specific forms of recreation.
Residents that gain static, long-term views of the WTGs and OSP of the Offshore Project in their principal outlook.	Viewers who are transient and dynamic, such as those travelling in cars or on trains, where the view is of short duration.
Viewpoint is visited or used by a large number of people.	View is visited or gained by very few people.
A view that is focused in a specific directional vista, with notable features of interest in a particular part of the view.	Open views with no specific point of interest, or specific directional vista away from direction of the WTGs and OSP of the Offshore Project.
Viewers where the experience is of a high level of visual amenity at the location due to its overall pleasantness as an attractive visual setting or backdrop to activities.	The visual amenity experienced at the location by viewers is less pleasant or attractive than might otherwise be the case.
Sensitivity to change	
<b>High</b> 	<b>Medium</b> 
<b>Low</b>	

## 19.21.7 Visual magnitude of impact

### 19.21.7.1 Overview

84. The visual magnitude of impact is an expression of the scale of the change that will result from the WTGs and OSP of the Offshore Project and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced. A separate assessment is also made of the duration and reversibility of visual effects.

## 19.21.8 Size or scale of change

85. An assessment has been made about the size or scale of change in the view that is likely to be experienced as a result of the WTGs and OSP of the Offshore Project, based on the following criteria:

- **Distance:** the distance between the visual receptor/viewpoint and the WTGs and OSP of the Offshore Project. Generally, the greater the distance, the lower the magnitude of impact, as the WTGs and OSP of the Offshore Project will constitute a smaller scale component of the view.
- **Size:** the amount and size of the WTGs and OSP of the Offshore Project that will be seen. Visibility may range from small or partial visibility of the WTGs and OSP of the Offshore Project, to all of the offshore elements being visible. Generally, the larger and greater number of the WTGs and OSP of the Offshore Project that appear in the view, the higher the magnitude of impact. This is also related to the degree to which the WTGs and OSP of the Offshore Project may be wholly or partly screened by landform, vegetation (seasonal) and / or built form. Conversely open views are likely to reveal more of the WTGs and OSP of the Offshore Project, particularly where this is a key characteristic of the landscape.
- **Scale:** the scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition. The scale of the WTGs and OSP of the Offshore Project may appear larger or smaller relative to the scale of the receiving seascape/landscape.
- **Field of view:** the vertical / horizontal field of view (FoV) and the proportion of the view that is impacted by the WTGs and OSP of the Offshore Project. Generally, the more of the proportion of a view that is changed, the higher the magnitude of impact will be. If the WTGs and OSP of the Offshore Project extend across the whole of the open part of the outlook, the magnitude of impact will generally be higher as the full view will be changed. Conversely, if the WTGs and OSP of the Offshore Project cover just a narrow part of an open, expansive, and wide view, the magnitude of impact is likely to be reduced as they will not impact the whole open part of the outlook. This can in part be described objectively by reference to the horizontal / vertical FoV impacted, relative to the extent and proportion of the available view.
- **Contrast:** the character and context within which the WTGs and OSP of the Offshore Project will be seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Contrasts and changes may arise particularly as a result of the rotation movement of the WTG blades, as a characteristic that gives rise to effects. Developments which contrast or appear



incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of impact.

- **Consistency of image:** the consistency of image of the WTGs and OSP of the Offshore Project in relation to other developments. The magnitude of impact of WTGs and OSP of the Offshore Project is likely to be lower if its WTG height, arrangement, and layout design are broadly similar to other developments in the seascape, in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- **Skyline / background:** Whether the WTGs and OSP of the Offshore Project will be viewed against the skyline or a background seascape may influence the level of contrast and magnitude. If the WTGs and OSP of the Offshore Project add to an already developed skyline the magnitude of impact will tend to be lower.
- **Number:** generally, the greater the number of separate WTGs and OSP of the Offshore Project seen simultaneously or sequentially, the higher the magnitude of impact. Further effects will occur in the case of separate developments and their spatial relationship to each other will influence the magnitude of impact. For example, development that appears as an extension to an existing development will tend to result in a lower magnitude of impact than a separate, new development.
- **Nature of visibility:** the nature of visibility is a further factor for consideration. The WTGs and OSP of the Offshore Project may be subject to various phases of development change and the manner in which the WTGs and OSP of the Offshore Project may be viewed could be intermittent or continuous and / or seasonally, due to periodic management or leaf fall.

### 19.21.9 Visual magnitude of impact rating

86. The 'magnitude' or 'degree of change' resulting from the WTGs and OSP of the Offshore Project is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' and 'Negligible' as defined in **Table 19.A.419.33**. In assessing the magnitude of impact the assessment has focused on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e., as short / medium / long-term, and temporary / permanent). The basis for the assessment of magnitude for each receptor has been made clear using evidence and professional judgement. Examples of criteria that tend towards higher or lower magnitude of impact that can occur on views and visual receptors are set out in **Table 19.A.419.33**.

*Table 19.A.419.33 Visual magnitude of impact ratings*

Magnitude of impact rating	Definition	Description / reason
<b>High</b>	The WTGs and OSP of the Offshore Project will result in a high level of alteration to the baseline view, forming the prevailing influence and/or introducing elements that are substantially uncharacteristic in the existing view. The addition of the WTGs and OSP of the Offshore Project will result in a high change, loss, or addition to the baseline view.	<ul style="list-style-type: none"> <li>• Size and Scale: A large, prominent and/or prevailing change to the view.</li> <li>Number: Involving the loss/addition of a large number of features / elements.</li> <li>• Distance: Typically appearing closer to the viewer in the fore to middle ground.</li> <li>• FoV: Impacting a large vertical angle and wide horizontal FoV.</li> <li>• Nature of Visibility: Multiple phase development, continuously and sequentially visible.</li> <li>• Contrast: Strong degree of contrast with surroundings with little or no screening.</li> <li>• Skyline: Visible on the skyline as a new feature.</li> <li>• Consistency of Image: Contrasting with other developments, lacking in visual rationale.</li> </ul>
<b>Medium-high</b>	Intermediate rating with combination of	criteria from high or medium magnitude of impact category.
<b>Medium</b>	The WTGs and OSP of the Offshore Project will result in a medium level of alteration to the baseline view, forming a readily apparent influence and/or introducing elements that are potentially uncharacteristic in the existing view. The addition of the WTGs and OSP of the Offshore Project will result in a medium change, loss, or addition to the baseline view.	<p>Size and Scale: A moderate, readily apparent and/or noticeable change to the view.</p> <ul style="list-style-type: none"> <li>• Number: Involving the loss/addition of a number of features / elements.</li> <li>• Distance: Typically appearing in the middle ground.</li> <li>• FoV: Impacting a medium vertical angle and moderate horizontal FoV.</li> <li>• Nature of Visibility: Multiple phase development, intermittently and sequentially visible.</li> <li>• Contrast: Contrast with surroundings and may benefit from some screening.</li> <li>• Skyline: Visible on the skyline along with other features.</li> <li>• Consistency of Image: Different from other developments, some visual rationale.</li> </ul>

Magnitude of impact rating	Definition	Description / reason
<b>Medium-low</b>	Intermediate rating with combination of criteria from high or medium magnitude of impact category.	
<b>Low</b>	The WTGs and OSP of the Offshore Project will result in a low level of alteration to the baseline view, providing a slightly apparent influence and/or introducing elements that are characteristic in the existing view. The addition of the WTGs and OSP of the Offshore Project will result in a low change, loss, or addition to the baseline view.	<ul style="list-style-type: none"> <li>• Size and Scale: A small, slightly apparent and/or perceptible change.</li> <li>• Number: Involving the loss/addition of a small number of features / elements.</li> <li>• Distance: Typically appearing in the background.</li> <li>• FoV: Impacting a small vertical angle and narrow horizontal FoV.</li> <li>• Nature of Visibility: Simple, single development, intermittently and infrequently visible.</li> <li>• Contrast: Some parity / 'fits' with surroundings and may benefit from screening.</li> <li>• Skyline: Partly visible on a developed skyline or not visible on the skyline.</li> <li>• Consistency of Image: Similar to other developments with visual rationale, appearing reasonably well accommodated within its surroundings.</li> </ul>
<b>Negligible</b>	The WTGs and OSP of the Offshore Project will result in a negligible alteration to the existing view. If visible it may form a barely discernible influence and/or introduce elements that are substantially characteristic in the baseline view. The addition of the WTGs and OSP of the Offshore Project will result in negligible incremental change, loss, or addition to the baseline view.	<ul style="list-style-type: none"> <li>• Size and Scale: A negligible, barely discernible and/or inconspicuous change.</li> <li>• Number: Involving the loss/addition of a small number of features / elements.</li> <li>• Distance: Typically appearing in the far distance.</li> <li>• FoV: Impacting a very small vertical and narrowest horizontal FoV.</li> <li>• Nature of Visibility: Simple, single development, intermittently and infrequently visible.</li> <li>• Contrast: Blends with surroundings and / or is well screened.</li> <li>• Skyline: Partly visible on a developed skyline or not visible on the skyline.</li> </ul>

Magnitude of impact rating	Definition	Description / reason
		<ul style="list-style-type: none"> <li>• Consistency of Image: Similar from other developments with strong visual rationale, appearing well accommodated within its surroundings.</li> </ul>

## 19.21.10 Evaluating visual effects and significance

### 19.21.10.1 Overview

87. The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of impact. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in **Table 19.A.6** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the WTGs and OSP of the Offshore Project and their conclusion, have been presented in a comprehensive, clear and transparent manner.
88. Further information is also provided about the nature of the effects (whether these will be direct / indirect; temporary / permanent / reversible; beneficial / neutral / adverse or cumulative).

### 19.21.11 Geographical extent

89. The geographic extent over which the visual impacts will be experienced has also been assessed. This is distinct from the size or scale of effect and is described in terms of the physical area or location over which it will be experienced (described as a linear or area measurement). The extent of the effects will vary according to the specific nature of the WTGs and OSP of the Offshore Project and is principally assessed through a combination of ZTV, field survey and viewpoint analysis of the extent of visibility likely to be experienced by visual receptors. The geographical extent of visual effects is described as per the following examples.
90. The geographical extent can be described as an area measurement or proportion of the total area of the receptor impacted. For example, effects on people within a particular area such as a golf course or area of common land can be illustrated via a 'representative viewpoint' that represents a similar visual effect, likely to be experienced by larger numbers of people within that area. The geographical extent

of that visual effect can be expressed as approximately '5 hectares' or '10%' of an area of common land or defined recreational area.

91. The geographical extent can be described as a linear measurement (m or km) according to the length of route impacted. For example, effects on people travelling on a route through the landscape such as a road or footpath can be illustrated via a 'representative viewpoint' that represents a similar visual effect, likely to be experienced by larger numbers of people along that route. The geographical extent of that visual effect can be expressed as approximately '2km' or '10%' of the total length of the route.
92. The geographical extent of a visual effect experienced from a specific viewpoint may be limited to that location alone. An example of a 'specific viewpoint' is a public viewpoint recommended in tourist literature such as a well visited hill summit. An example of an 'illustrative viewpoint' is a particular location within a built up or well vegetated area where an uncharacteristically open or restricted view exists.

#### **19.21.12 Duration and reversibility**

93. The duration and reversibility of visual effects are based on the period over which the WTGs and OSP of the Offshore Project are likely to exist (during construction and decommissioning, operation and maintenance,) and the extent to which the WTGs and OSP of the Offshore Project will be removed (during decommissioning), with effects reversed at the end of that period.
94. Long-term, medium-term and short-term visual effects are defined as follows:
  - long-term - more than 10 years (may be defined as permanent or reversible)
  - medium-term - 6 to 10 years
  - short-term - 1 to 5 years.

#### **19.21.13 Significant visual effects**

95. A significant effect is more likely to occur where a combination of the variables results in the WTGs and OSP of the Offshore Project having a defining effect on the view or visual amenity or where changes impact a visual receptor that is of high sensitivity.

#### **19.21.14 Non-significant visual effects**

96. A non-significant effect is more likely to occur where a combination of the variables results in the WTGs and OSP of the Offshore Project having a non-defining effect on the view or visual amenity or where changes impact a visual receptor that is of low sensitivity.

### 19.21.15 Weather conditions

97. The assessment of visual effects is undertaken in clear weather with good to excellent visibility. This means that the viewpoint assessment represents a maximum effect assessment of the likely visual effects. The same viewpoint may be experienced under less optimal viewing conditions resulting in a significant effect appearing as non-significant, due to the change in the variable weather conditions. Due to the conditions of the assessment the reverse (a non-significant effect appearing as significant) is unlikely to occur.

### 19.22 Assessing night-time effects of lighting

98. The assessment of night-time visual effects is based on the description of proposed WTG lighting set out in **Section 19.3.3** and the relevant ICAO/CAA regulations and standards, including Air Navigation Order 2016: Civil Aviation (CAA, 2016), along with the embedded mitigation.

99. The effect of the visible lights will be dependent on a range of factors, including the intensity of lights used, the clarity of atmospheric visibility and the degree of negative/positive vertical angle of view from the light to the receptor.

100. The approach that is applied in the assessment considers the potential effects of medium-intensity 2,000 cd lights in clear visibility. It should be noted however, that this is an unlikely worst case scenario as medium intensity lights are only likely to be operated at their maximum 2,000 cd during periods of poor visibility.

101. A further assessment of the likely residual effects is therefore made factoring in embedded mitigation, i.e., that the 2,000cd aviation lights will be dimmed to 10% of their value (200 cd) if meteorological conditions permit (when visibility is greater than 5km).

102. The visibility frequency data from the Met Office indicates that visibility is greater than 5km for over 95 % of the time. Whilst visibility out at sea is likely to be more frequently less than 5km than such land-based measurements suggest, due to generally greater levels of moisture in the air over the sea, which tends to reduce visibility compared to the air directly over land. This data indicates that the aviation lights would infrequently be displayed at 2000 candela.

103. In the particular circumstances when visibility at night out at sea is restricted to within 5km this would occur as a result of moisture levels, including fog. When this is the case the ability of the light to travel is likely to be reduced substantially so that it is not considered to be possible for the lights to be visible at 2,000 candela from the closest landmass to the Windfarm Site, i.e., approximately 43.7km at Lundy Island

with other coastal areas, where dark skies are considered important, substantially more distant (over 52.3km).

104. It should be noted that the WTGs would also include infra-red lighting on the WTG hubs, which would not be visible to the human eye. Details of the lighting would be agreed with the MoD. The focus of the night-time visual assessment in this assessment is on the visible lighting requirements of the Windfarm.
105. The study area for the visual assessment of WTG lighting is shown in **Figure 19.3** and is coincident with the 60km SLVIA Study area, however, it is particularly focused on the closest area of land at Lundy Island, approximately 43.7km away.
106. The assessment of the lighting is intended to determine the likely effects on the visual resource i.e., it is an assessment of the visual effects of aviation lighting on views experienced by people at night. The assessment of WTG lighting does not consider effects of aviation lighting on landscape or seascape character (i.e., landscape or seascape effects).
107. ICAO indicates a requirement for no lighting to be switched on until 'Night' has been reached, as measured at 50 cd/m<sup>2</sup> or darker. It does not require aviation lights to be on during 'twilight', when landscape character may be discerned. The aviation and marine navigational lights may be seen for a short time during the twilight period when some recognition of landscape features/ profiles/ shapes and patterns may be possible. It is considered however, that level of recognition does not amount to an ability to appreciate in any detail landscape character differences and subtleties, nor does it provide sufficient natural light conditions to undertake a landscape character assessment.
108. The proposed aviation lighting will not have significant effects on the perception of landscape or seascape character, which is not readily perceived at night in darkness, particularly in rural areas. The matter of visible aviation and marine navigation lighting assessment is wholly a visual concern and the assessment presented focusses on that premise. Effects on the views from Lundy Island and the coastal areas of the PCNP, NDCAONB and CAONB within the Study area are considered and take into account the seascapes that form part of their setting.

### **19.22.1 Significance criteria for night-time effects**

109. The nature of the daytime and night-time effects from visible aviation and marine navigation lighting are clearly very different, in that during day light hours visibility of moving WTG blades gives rise to effects that are very different to the pinpoint effects



of lighting at night. It is considered therefore, that the same criteria should not be used to assess these differences in daytime and night-time effect.

110. In relation to the sensitivity of visual receptors, this is defined through the application of professional judgement in relation to the interaction between the 'value' of the view experienced by the visual receptor and the 'susceptibility' of the visual receptor (or 'viewer', not the view) to the particular form of change likely to result from the Offshore Project.
111. The factors weighed in reaching a decision on 'value' of the view are not all applicable at night-time, in the same way they may be during the day. It is not appropriate, for example, to attribute value to views at night when the detail of the view, or of elements that add value to it within a landscape, cannot readily be discerned. Furthermore, the popularity of a viewpoint during the day may be completely different to its use at night. Value factors assessed for day-time viewpoints may therefore be of less relevance to the value judgement for night-time viewpoints, which is factored into the following assessments.
112. The aviation lights are not located within a Dark Sky Reserve or a nationally designated landscape where dark skies are considered to be part of the identified Special Qualities. However, the aviation lights may be visible from the viewpoints within these areas, so heightened value to views may be ascribed in respect of viewing locations where one objective is to observe the night sky, however other value factors assessed for day-time viewpoints may be of less relevance to the value judgement.
113. In reaching a view on the significance of the likely visual effects from the visible aviation lighting, it is relevant to consider what parts of the landscape - where darkness qualities are well displayed - are likely to be impacted by visibility of the aviation lights and, in turn, to understand what people might be doing in these areas at night to be susceptible to visibility of aviation lights. Descriptions of 'susceptibility' provided for daytime viewpoints and receptors in **Section 19.7.1** to **19.7.11** are considered appropriate for the purposes of establishing receptor sensitivity at night-time, however the susceptibility of people experiencing night-time views will depend on the degree to which their perception is effected by existing baseline lighting (e.g., from nearby light-houses). In brightly lit areas, or when travelling on roads from where sequential experience of lighting may be experienced, the susceptibility of receptors is likely to be lower than from within areas where the baseline contains no or limited existing lighting. The converse would also be true and is relevant to the views from dark sky discovery sites and appreciation of the night skies of the PCNP, NDCAONB, and CAONB where existing light levels tend to be relatively low.

114. In relation to the other key component in determining significance of effect, the magnitude of impact, reference to 'loss of important features' and 'composition of the view' are not readily discernible or relevant at night and, on this basis, a distinct set of criteria to explain the magnitude of impact at night, as a consequence of the appearance of visible aviation lights, is set out in **Table 19.34**.

*Table 19.34 Magnitude of impact criteria for night-time visual effects*

Level of magnitude	Definition of magnitude
<b>High</b>	Addition of aviation lighting results in large scale of change/ large intrusion to the existing night-time baseline conditions/ darkness in the view, due to a full and/ or close range view of visible aviation lighting and/ or a high degree of contrast/ low degree of integration with level of baseline lighting in the view. Results in obtrusive light which compromises or diminishes the view of the night sky.
<b>Medium</b>	Addition of aviation lighting results in moderate scale of change/ moderate intrusion to the existing night-time baseline conditions/ darkness in the view, due to partial and/ or middle distance view of visible aviation lighting and/ or moderate level of contrast/ integration with level of baseline lighting in the view. Results in light that may partially compromise or diminish the view of the night sky, but which is not considered obtrusive.
<b>Low</b>	Addition of aviation and marine navigation lighting results in small scale of change/ minor intrusion to the existing night-time baseline conditions/ darkness in the view, due to limited and/ or distant view of aviation lighting and/ or low degree of contrast/ high degree of integration with level of baseline lighting in the view. Results in light that does not compromise or diminish the view of the night sky, nor is it considered obtrusive.
<b>Negligible</b>	Addition of aviation and marine navigation lighting results in a largely indiscernible change/ negligible intrusion to the existing night-time baseline conditions/ darkness in the view, due to glimpsed view of lighting and/ or slight degree of contrast/ very high degree of integration with level of baseline lighting in the view. Results in light that does not compromise or diminish the view of the night sky, nor is it considered obtrusive.

115. The significance of effects of aviation and marine navigation lighting is assessed through a combination of the sensitivity of the visual receptor and the magnitude of impact that would result from the visible aviation lighting, taking into account the considerations described above, and informed by the matrix in **Table 19.4**, which gives an understanding of the threshold at which significant effects may arise.

116. A significant effect occurs where the aviation and marine navigation lighting would provide a defining influence on a view or visual receptor. A not significant effect would

occur where the effect of the aviation and marine navigation lighting is not material, and the baseline characteristics of the view or visual receptor continue to provide the definitive influence. In this instance the aviation lighting may have an influence, but this influence would not be definitive.

117. In determining significance, particular attention is paid to the potential for 'Obtrusive Light' i.e., whether the lighting impedes a particular view of the night sky; creates sky glow, glare, or light intrusion (ILP, 2011) in a prominent, incongruous, or intrusive way.

## 19.23 Assessing cumulative seascape, landscape and visual effects

### 19.23.1 Approach to additional or combined cumulative effects

118. The overarching approach to Cumulative Effects Assessment (CEA) is set out in **Chapter 6: EIA Methodology**. Only projects which are reasonably well described and sufficiently advanced to provide information on which to base a meaningful and robust assessment have been included in the CEA. Projects which are sufficiently implemented during the site characterisation for the Offshore Project have been considered as part of the baseline for the EIA. Where possible OWL has sought to agree with stakeholders the use of as-built project parameter information (if available) as opposed to consented parameters to reduce over-precaution in the cumulative assessment.
119. The Cumulative Effects Assessment (CEA) considers the impact associated with the White Cross Offshore Windfarm together with other relevant plans, projects, and activities. Cumulative effects are therefore the additional or combined effect of the WTGs and OSP of the Offshore Project in combination with the effects from a number of different projects, on the same receptor or resource.
120. GLVIA3 (Landscape Institute and IEMA 2013, p120) defines cumulative landscape and visual effects as those that "*result from additional changes to the landscape and visual amenity caused by the proposal in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.*"
121. NatureScot's guidance, *Assessing the Cumulative Impact of Onshore Wind Energy Developments* (NatureScot 2012) is widely used across the UK to inform the specific assessment of the cumulative effects of windfarms. Both GLVIA3 and NatureScot's guidance provide the basis for the methodology for the cumulative SLVIA undertaken

in the SLVIA. The NatureScot (2012) guidance defines: "*Cumulative effects as the additional changes caused by a Proposed Development in conjunction with other similar developments or as the combined effect of a set of developments taken together*" (NatureScot, 2012: p4).

122. Cumulative landscape effects are those effects that "*can impact on either the physical fabric or character of the landscape, or any special values attached to it*" (NatureScot, 2012, p10); and "*Cumulative visual effects are those effects that can be caused by combined visibility, which occurs where the observer is able to see two or more developments from one viewpoint and / or sequential effects which occur when the observer has to move to another viewpoint to see different developments*" (NatureScot, 2012, p11).

123. In line with NatureScot guidance and GLVIA3, cumulative effects are assessed in this SLVIA as the additional changes caused by the WTGs and OSP of the Offshore Project in conjunction with other similar developments (not the totality of the cumulative effect). The CEA assesses the cumulative effect of the Windfarm Site with other projects (**Table 19.23**) against the baseline for SLVIA receptors (Section 19.7), with the assessment of significance apportioning the amount of the effect that is attributable to White Cross Offshore Windfarm. The addition of the Windfarm Site to the baseline character/view is assessed, and information provided on 'how the effects of the applicant's proposal would combine and interact with the effects of other development' (PINS, 2019).

124. Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises because of this change that is assessed in the CEA, such as through design discordance or proliferation of multiple developments effecting characteristics or new geographic areas, and ultimately if character changes occur because of multiple developments becoming a prevailing characteristic of the seascape or view.

### 19.23.2 Tiered approach to CEA

125. In accordance with NatureScot guidance and GLVIA3 (para 7.13), existing projects and those which are under construction (**Table 19.23**) are included in the SLVIA baseline; however, there are no relevant schemes in the SLVIA study area.

126. A further assessment of the additional cumulative seascape, landscape, and visual effects of the WTGs and OSP of the Offshore Project with other potential future projects is undertaken in the Cumulative Effects Assessment (CEA) in this **Section 19.1.1**.

127. In undertaking this CEA for the WTGs and OSP of the Offshore Project, it is important to bear in mind that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative effects alongside the WTGs and OSP of the Offshore Project. Therefore, a tiered approach has been adopted, in accordance with PINS (2019) Advice Note Seventeen: Cumulative Effects Assessment. This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the projects' parameters. The tiered approach which will be utilised within the CEA employs the following tiers:

- Tier 1 assessment:
  - Projects that are under construction;
  - Permitted applications, not yet implemented
  - Submitted applications, not yet determined.
- Tier 2 assessment:
  - Projects on the Planning Inspectorate's Programme of Projects, where a scoping report has been submitted
- Tier 3 assessment:
  - Projects on the Planning Inspectorate's Programme of Projects, where a scoping report has not been submitted.

### 19.23.3 Other plans, projects, and activities

128. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of an overall screening exercise of a cumulative long-list of projects (see **Chapter 6: EIA Methodology**). Those included in the overall short list for the CEA have then been subject to a screening exercise specific to potential cumulative effects on seascape, landscape, and visual receptors. Each project or plan has been considered on a case by case basis for screening in or out of this chapter's CEA based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved. Projects screened into the CEA with potential for cumulative effect interactions for seascape, landscape, and visual receptors, are mapped in the cumulative search area base plan compiled within the 60km SLVIA study area (**Figure 19.1**). The specific projects scoped into the CEA for seascape, landscape, and visual amenity, are set out in **Table 19.23**.

### 19.23.4 Types of cumulative effect

#### 19.23.4.1 Cumulative Visual Effects

129. Cumulative visual effects consist of combined and sequential effects:

- **Combined visibility** - occurs where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be where several developments are within the observer's main angle of view at the same time, or, where the observer has to turn to see the various developments. The cumulative visual effect of the WTGs and OSP of the Offshore Project may be significant, or not significant, depending on factors influencing the cumulative magnitude of impact, such as the degree of integration and consistency of image with other developments in combined views; and its position relative to other developments and the landscape context in successive views.
- **Sequential visibility** - occurs when the observer has to move to another viewpoint to see different developments. Sequential effects are assessed along regularly used routes such as major roads, railway lines and footpaths. The occurrence of sequential effects range from 'frequently sequential' (the features appear regularly and with short time lapses between, depending on speed of travel and distance between the viewpoints) to 'occasionally sequential' (long time lapses between appearances, because the observer is moving slowly and/or there are large distances between the viewpoints). The cumulative visual effect is more likely to be significant when frequently sequential.

#### 19.23.4.2 Cumulative seascape / landscape effects

130. Cumulative development within a particular area may build up to create different types of seascape/landscape effect. The significance of the cumulative seascape/landscape effects of the addition of the WTGs and OSP of the Offshore Project will be assessed as follows.

131. If the WTGs and OSP of the Offshore Project forms a separate isolated feature from other developments within the seascape/landscape, too infrequent and of insufficient significance to be perceived as a characteristic of the area, then the cumulative seascape/ landscape effect of the WTGs and OSP of the Offshore Project is unlikely to be significant.

132. If the addition of the WTGs and OSP of the Offshore Project results in offshore windfarms and/or energy generation/ transmission developments forming a key characteristic of the seascape/landscape, exerting sufficient presence as to establish or increase the extent of a 'seascape/landscape with windfarms'; then the cumulative seascape/ landscape effect of the proposal may be significant or not significant, depending on the sensitivity of the receptor and magnitude of the change.



133. If the addition of the WTGs and OSP of the Offshore Project results in offshore windfarms forming the prevailing characteristic of the seascape/ landscape, seeming to define the seascape/ landscape as a 'windfarm seascape/ landscape character type' then the cumulative seascape/ landscape effect of the WTGs and OSP of the Offshore Project is likely to be significant.

### 19.23.5 Assessing cumulative seascape, landscape, and visual effects

#### 19.23.5.1 Cumulative sensitivity of landscape and visual receptors

134. In evaluating cumulative sensitivity in the cumulative SLVIA (**Section 19.14**), the sensitivity to change of seascape, landscape and visual receptors are retained from the assessment of potential effects in **Section 19.7**.

#### 19.23.5.2 Cumulative magnitude of impact

135. The cumulative magnitude of impact is an expression of the degree to which seascape, landscape and visual receptors will be changed by the addition of the WTGs and OSP of the Offshore Project cumulatively. The cumulative magnitude of impact is assessed according to a number of criteria, described below.

- **The location, position and visual relationship of the WTGs and OSP of the Offshore Project:** Depending on the viewpoint/viewing angle from the coast, the WTGs and OSP of the Offshore Project may be viewed adjacent to other developments on the skyline, covering a wider lateral spread; they may form one grouping or could be viewed separately on the skyline (separated by space on the skyline); or could be viewed with one project being 'behind' the other project. The overall magnitude of impact will vary depending on this visual relationship at different viewpoints and is likely to be higher when two projects are viewed adjacent to each other over a wider lateral spread; and lower when one project is viewed behind the other project.
- **The location of the WTGs and OSP of the Offshore Project in relation to other developments:** If the WTGs and OSP of the Offshore Project is seen in a part of the view or setting to a landscape receptor that is not effected by other development, this will generally increase the cumulative magnitude of impact as it will extend influence into an area that is currently not influence by development. Conversely, if the WTGs and OSP of the Offshore Project is seen in the context of other developments, the cumulative magnitude of impact may be lower as development is not being extended to otherwise undeveloped parts of the outlook or setting. This is particularly true where the scale and layout of the proposal is similar to that of the other developments as where there is a high level of



integration and cohesion with an existing site the various developments may appear as a single site.

- **The extent of the developed skyline:** the proportion (or horizontal angle) of the view that is impacted by the combined lateral spread of the WTGs and OSP of the Offshore Project and other projects on the horizon. If the lateral spread/horizontal angle of the WTGs and OSP of the Offshore Project will add notably to the developed horizon in a view, the cumulative magnitude of impact will tend to be higher.
- **The number and scale of developments seen simultaneously or sequentially:** Generally, the greater the number of clearly separate developments that are visible, the higher the cumulative magnitude of impact will be. The addition of the WTGs and OSP of the Offshore Project to a view or seascape/ landscape where a number of smaller developments are apparent will usually have a higher cumulative magnitude of impact than one or two large developments as this can lead to the impression of a less co-ordinated or strategic approach.
- **The scale comparison between developments:** If the WTGs and OSP of the Offshore Project is perceived to be of a similar scale to other visible developments, particularly those seen in closest proximity to it, the cumulative magnitude of impact will generally be lower as it will have more integration with the other sites and will be less apparent as an addition to the cumulative situation.
- **The consistency of image of the proposal in relation to other developments:** The cumulative magnitude of impact of the WTGs and OSP of the Offshore Project is likely to be lower if its turbine height, arrangement, layout design and visual appearance/aesthetics are broadly similar to other developments in the seascape, as they are more likely to appear as relatively simple and logical components of the seascape.
- **The context in which the developments are seen:** If projects are seen in a similar seascape/ landscape context, the cumulative magnitude of impact is likely to be lower due to visual integration and cohesion between the sites. If projects are seen in a variety of different settings, this can lead to a perception that development is unplanned and uncoordinated, effecting a wide range of landscape character and blurring the distinction between them.
- **The magnitude of impact of the WTGs and OSP of the Offshore Project as assessed in the project alone assessment:** Where the WTGs and OSP of the Offshore Project is assessed to have a negligible or low magnitude of impact on a view or seascape/landscape receptor, there is more likely to be a low cumulative effect.

136. Definitions of cumulative magnitude of impact are applied in order that the process of assessment is made clear. These are:

- **High** - where the magnitude of impact arising from the addition of the WTGs and OSP of the Offshore Project will result in a high cumulative change, loss or addition to the seascape/landscape receptor or view
- **Medium** - where the magnitude of impact arising from the addition of the WTGs and OSP of the Offshore Project will result in a medium change, loss or addition to the seascape/landscape receptor or view
- **Low** - where the magnitude of impact arising from the addition of the WTGs and OSP of the Offshore Project will result in a low change, loss or addition to the seascape/landscape receptor or view
- **Negligible** - where the magnitude of impact arising from the addition of the WTGs and OSP of the Offshore Project will result in a negligible incremental change, loss or addition to the seascape/landscape receptor or view.

137. There may also be intermediate levels of cumulative magnitude of impact - medium-high and medium-low - where the change falls between two of the definitions.

#### 19.23.6 Significance of cumulative effect

138. The objective of the cumulative assessment is to determine whether any effects that the construction and decommissioning, operation and maintenance, of the offshore infrastructure will have on seascape, landscape and visual receptors, when seen or perceived cumulatively with the construction and decommissioning, operation and maintenance, of the other projects, will be significant or not significant. Significant cumulative seascape, landscape and visual effects arise where the addition of the WTGs and OSP of the Offshore Project, leads to offshore windfarms becoming a prevailing seascape, landscape or visual characteristic of a receptor that is sensitive to such change. Cumulative seascape/ landscape effects may evolve as follows:

- A small scale, single development will often be perceived as a new or 'one-off' landscape feature or landmark within the seascape. Except at a local site level, it usually cannot change the overall existing seascape character, or become a new characteristic element of a landscape/seascape;
- With the addition of further development, it can become a characteristic element of the landscape/ seascape, as they appear as elements or components that are repeated. Providing there was sufficient 'space' or undeveloped landscape/seascape between each development, or the overlapping of several developments is not too dense; they would appear as a series of developments

within the landscape/seascape and would not necessarily become the dominant or defining characteristic of the seascape nor have significant cumulative effects.

- The next stage would be to consider larger scale developments and/or an increase in the number of developments within an area that either overlap or coalesce and/or 'join-up' along the skyline. The effect is to create a landscape/seascape where the offshore windfarm and/ or energy generation/ transmission element is a prevailing characteristic of the landscape/ seascape. The result would be to materially change the existing seascape/landscape character and resulting in a significant cumulative effect. A landscape/seascape characterised by offshore windfarm or energy generation/ transmission development may already exist as part of the baseline seascape context.

139. Less extensive, but nevertheless significant cumulative seascape, landscape and visual effects may also arise as a result of the addition of the WTGs and OSP of the Offshore Project where it results in a seascape, landscape or view becoming defined by the presence of more than one offshore windfarm or similar/large scale development, so that other patterns and components are no longer definitive, or where the proposal contrasts with the scale or design of an existing or development.
140. Higher levels of cumulative effect may arise when projects are clearly visible together in views, however provided that the projects are designed to achieve a high level of visual integration, with few notable visual differences between developments, these effects may not necessarily be significant. In particular, the effects of an extension to an existing development are often less likely to be significant, where the effect is concentrated, providing that the design of the developments are compatible, and that the overall capacity of the seascape is not exceeded.
141. The capacity of the seascape/ landscape or view may be assessed as being exceeded where the seascape, landscape and visual receptor becomes defined by a particular type of development, or if the WTGs and OSP of the Offshore Project extends across seascape/landscape character areas or clear visual/topographic thresholds in a view.
142. More substantial cumulative effects may result from developments that have some geographical separation, but remain highly inter-visible, potentially resulting in extending effects into new areas, such as an increased presence of development on a skyline, or the creation of multiple, separate offshore windfarm defined seascape/landscapes.

## 19.24 Evaluation of significance

143. The matrix presented in **Table 19.A.6** is used as a guide to illustrate the SLVIA process. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.
144. The landscape and visual assessment unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible cross references have been made to objective evidence, baseline figures and / or to photomontage visualisations to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach. Importantly each effect results from its own unique set of circumstances and have been assessed on a case by case basis. The matrix as presented in **Table 19.A.6** should therefore be considered as a guide; where deviations from this guide have been made, this is clearly explained in the assessment.

*Table 19.A.6 Significance of an impact - resulting from each combination of receptor sensitivity and the magnitude of the effect upon it*

		Negative Magnitude					
		High	Medium-high	Medium	Medium-low	Low	Negligible
Sensitivity	High	Major	Major	Major / moderate	Moderate	Moderate / minor	Minor
	Medium-high	Major	Major/ moderate	Moderate	Moderate	Moderate / minor	Minor
	Medium	Major / moderate	Moderate	Moderate	Moderate / minor	Minor	Minor / negligible
	Medium-low	Moderate	Moderate	Moderate/ minor	Minor	Minor	Negligible
	Low	Moderate	Moderate / minor	Minor	Minor	Minor	Negligible
		Beneficial Magnitude					
		Negligible	Low	Medium-low	Medium	Medium-high	High
Sensitivity	High	Minor	Moderate / minor	Moderate	Major / moderate	Major	Major
	Medium-high	Minor	Moderate / minor	Moderate	Moderate	Major/ moderate	Major
	Medium	Minor / negligible	Minor	Moderate / minor	Moderate	Moderate	Major / moderate
	Medium-low	Negligible	Minor	Minor	Moderate/ minor	Moderate	Moderate
	Low	Negligible	Minor	Minor	Minor	Moderate / minor	Moderate

145. For the purposes of this assessment, any effects with a significance level of major and major / moderate have been deemed significant in EIA terms (colour shaded boxes in **Table 19.4**). 'Moderate' levels of effect have the potential, subject to the assessor's professional judgement, to be considered as either significant or not significant, depending on the sensitivity and magnitude of impact factors evaluated. These assessments are explained as part of the assessment, where they occur. Significance can therefore occur at a range of levels depending on the magnitude and sensitivity; however, in most cases, a significant effect is considered more likely to occur where a combination of the variable results in the Offshore Project having a defining effect on the landscape / seascape character or view. Definitions are not provided for the individual categories or significance shown in the matrix and the reader should refer to the detailed definitions provided for the factors that combine to inform sensitivity and magnitude.
146. Effects assessed as being either moderate / minor, minor, minor / negligible, or negligible levels are assessed as not significant.
147. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessments made for each landscape and visual receptor

### 19.25 Nature of effects

148. The nature of effects refers to whether the landscape and/or visual effect of the WTGs and OSP of the Offshore Project is positive or negative (herein referred to as 'beneficial' and 'adverse').
149. The EIA Regulations 2017 state that the ES should define "*the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development*".
150. Cumulative effects have been described in **Section 19.23**, and 'short-term, medium-term and long-term, permanent and temporary' effects are described in **Section 19.20.11.2** and **Section 19.21.12** under the heading 'Duration of Effect'. Transboundary effects concern the potential effects of the WTGs and OSP of the Offshore Project on seascape, landscape and visual receptors in countries outside UK territorial waters.
151. The definition of the remaining terms used in this assessment is defined here.

### 19.25.1 Direct and indirect effects

152. Direct landscape effects relate to the host landscape and concern both physical and perceptual effects on the receptor.
153. Indirect landscape effects relate to those landscapes and receptors which separated by distance or remote from the development and therefore are only impacted in terms of perceptual effects. The Landscape Institute also defines indirect effects as those which are not a direct result of the development but are often produced away from it or as a result of a complex pathway.
154. Visual effects are considered as direct effects, as the view itself may be directly altered by the WTGs and OSP of the Offshore Project.

### 19.25.2 Positive and negative effects

155. Guidance provided by the in GLVIA3 on the nature of effect (i.e., beneficial or adverse) states that "*in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity*", but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.
156. The seascape, landscape and visual effects of wind farms are difficult to categorise as either beneficial or adverse because, unlike other disciplines, there are no definitive criteria by which the effects of wind farms can be measured as being categorically 'beneficial' or 'adverse'. In some disciplines, such as noise or ecology, it is possible to quantify the effect of a wind farm in numeric terms, by objectively identifying or quantifying the proportion of a receptor that is impacted and assessing the nature of that effect in justifiable terms. However, this is not the case in relation to landscape and visual effects where the approach combines quantitative and qualitative assessment.
157. Generally, in the development of 'new' wind farms, a precautionary approach has been adopted, which assumes that significant landscape and visual effects are weighed on the adverse side of the planning balance. Unless it is stated otherwise, the effects considered in the assessment have been considered to be adverse. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment where relevant. The following definitions have been used.
  - **Beneficial effects** - contribute to the seascape, landscape and visual resource through the enhancement of desirable characteristics or the introduction of new,



beneficial attributes. The development contributes to the landscape by virtue of good design or the introduction of new landscape planting. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components.

- **Neutral effects** - occur where the development fits with the existing seascape/landscape character or visual amenity. The development neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, nor where the effects are so limited that the change is hardly noticeable. A change to the seascape, landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation.
- **Adverse effects** - are those that detract from the seascape/landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the seascape, landscape and visual resource, or through the removal of elements that are key in its characterisation.

### 19.25.3 Frequency and likelihood of visual effects – weather conditions

158. The judgements made in the SLVIA are based on optimum 'very good' to 'excellent' visibility of the WTGs and OSP of the Offshore Project. This assumption is assessed as the worst-case scenario, but in reality, the degree and extent of visual effects arising from the construction and decommissioning, operation and maintenance, of the offshore infrastructure is a combination of several different factors, including the prevailing weather conditions. The prevailing weather can determine changes in character and visibility, with varied wind, light and tidal movements and the clarity or otherwise of the atmosphere. Collectively, these will combine to reduce the number of days over which views of the WTGs and OSP of the Offshore Project will be available from the coastline and hinterland, or to inhibit views, rendering them more visually recessive within the wider seascape. Viewing conditions and visibility has been found to vary in the study area, and the effects of the wind farm will vary greatly according to the weather. This means that effects that are assessed to be significant may be not-significant under different, less clear conditions.

159. Although the SLVIA is based on 'excellent' visibility conditions, a description of visibility frequency is provided using visibility data from the closest Met Office synoptic weather station at Chivenor, to highlight potential trends in the visibility conditions of the study area. Both GLVIA3 (8.15) and NatureScot guidance (NatureScot 2017, para 39) refer to use of Met Office visibility data to assess typical visibility conditions within

an area. Most synoptic observing stations have sensors which provide a measurement of visibility. Visibility sensors measure the meteorological optical range which is defined as the length of atmosphere over which a beam of light travels before its luminous flux is reduced to 5% of its original value. The use of light within the visible spectrum allows the sensor to most accurately simulate human perception of visibility. Reasonably accurate measurements are possible over a range of visibility extending from a few tens of metres to a few tens of kilometres.

160. Although there are limitations to how this data can be applied to judgements about offshore wind farm visibility, the visibility data provides some understanding and evidence basis for evaluating the visibility of the WTGs against their background.
161. Met Office visibility data has been assessed from the nearest weather station that records visibility, at Chivenor (located onshore to the east of the SLVIA study area). Visibility is categorised into distance ranges, such as <1km, 1 to 2km, 2 to 3km etc and a frequency table has been compiled revealing the total number of observations within each distance category at hourly intervals for each month. The data has been summarised and mapped to highlight trends in the visibility conditions of the study area, such as the distance category which has the most visibility observations recorded, and approximate number of viewing days lost to low visibility weather conditions. Visibility data is then assessed to set out the frequency of visibility (over a 10 year period) at different distance ranges, based on Met Office visibility definitions: < 1km Very Poor; 1 – 4km Poor; 4 -10km Moderate; 10 – 20km Good; 20 – 40km Very Good; 40km > Excellent; and a further category of > 50km Excellent.
162. As a result of the distance of the Windfarm Site from mainland coastlines and visual receptors a further category has been included by OPEN which captures a visibility range of 50km > Excellent, which would be experienced in exceptional conditions.
163. The Met Office visibility data is then interpreted to allow more specific quantification of the likely frequency of visibility of the WTGs and OSP of the Offshore Project from the coastal viewpoints (as a % and average number of days per year), based on the distance of each viewpoint location from the windfarm site. The Met Office visibility frequency data is used to inform an assessment of the 'likelihood of effect' from each viewpoint, in order to qualify any significant effects assessed in optimum visibility conditions with how likely they are to actually occur given the prevailing weather/ visibility conditions.

## 19.26 Visual representations

### 19.26.1 Overview

164. Zones of Theoretical Visibility (ZTVs) and visualisations (wirelines or wirelines and photomontages) are graphical images produced to assist and illustrate the SLVIA and the cumulative assessment. The methodology used for viewpoint photography and photomontages has been produced in accordance with the NatureScot guidance on Visual Representation of Wind Farms, Version 2.2 (2017), GLVIA 3 and the Landscape Institute Technical Guidance Note on Visual Representation of Development Proposals (2019).

### 19.26.2 Zone of Theoretical Visibility (ZTV)

165. The ZTVs in the SLVIA figures have been calculated using computer software to generate a ZTV of the WTGs of the Offshore Project, to demonstrate the theoretical extent of visibility from any point in the study area.

166. A 3D computer model has been developed of the existing landscape using digital terrain data as follows. 3D model combines Ordnance Survey Terrain 5 DTM data within 60km SLVIA study area and Ordnance Survey Terrain 50 DTM outside of it. OS Terrain 5 is particularly useful in areas where assess particular effects, such as along the coastline or within a detailed part of the study area is required

167. Model combining Terrain 5 and Terrain 50 is used to produce the main or standard bare ground Zone of Theoretical Visibility (ZTV) plot and wirelines, these tiles provide a digital record of the existing landform of Great Britain. The computer model will include the entire study area and takes account of the effects caused by atmospheric refraction and the Earth's curvature.

168. The resulting ZTV plots have been overlaid on Ordnance Survey mapping at an appropriate scale and presented as figures using desktop publishing or graphic design software.

169. There are limitations in this theoretical production, and these should be considered in the interpretation and use of the ZTV as follows.

170. Where the ZTV has been calculated using Ordnance Survey Terrain 5 and Terrain 50 digital terrain data, this will not account for the potential screening effects of vegetation or buildings. ZTV was created using the Viewshed tool located in the 3D/Spatial Analyst extension of ESRI® GIS software (version 10.8.2)

171. The ZTVs are based on theoretical visibility from 2m above ground level. ZTVs are generated to blade tip height (where a turbine is considered visible if any part of the

turbine could be observed) or hub height (where a turbine is considered visible if the nacelle could be observed).

172. Cumulative ZTV plots based on the intervisibility of the WTGs of the Offshore Project and other relevant developments within the study area have also been produced. Instead of mapping the number of turbines visible from a single development, Cumulative ZTVs map the combination of wind farms theoretically visible within the SLVIA study area. Each wind farm visibility footprint is given a specific colour, and where footprints overlap, an intermediate colour is used to represent combined visibility.
173. The Blade Tip ZTV does not indicate the decrease in visibility that occurs with increased distance from the Windfarm Site. For example, the nature of what is visible from 10km away will differ markedly from what is visible from distances in excess of 40km away, although both are indicated on the Blade Tip ZTV as having the same level of visibility.
174. The hub height ZTV has been used in conjunction with the blade tip ZTV to provide an indication of the degree to which the WTGs are visible.
175. These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the WTGs of the Offshore Project will be theoretically visible and tending to present a worst-case or over-estimate the actual visibility.
176. The SLVIA includes a Horizontal Angle ZTV to show the horizontal field of view (in degrees) that may be affected by views of the WTGs.

### **19.26.3 Methodology for baseline photography**

#### **19.26.3.1 Overview**

177. Once a view has been selected, the location is visited, confirmed, and assessed with the aid of a wireline in the field. A photographic record is taken to record the view and the details of the viewpoint location and associated data are recorded to assist in the production of visualisations and to validate their accuracy.
178. The following photographic information is recorded and provided:
  - date, time, weather conditions and visual range
  - Global Positioning System (GPS) recorded 12 figure grid reference accurate to ~1-3 m
  - GPS recorded Above Ordnance Datum (AOD) height data
  - use of a fixed 50 mm focal length lens is confirmed

- horizontal field of view (in degrees)
- bearing to Target Site.

179. The photographs used to produce the photomontages were taken at the times of day and locations agreed with the consultees using Canon EOS 5D and /or 6D Digital SLR cameras, with a fixed lens and a full-frame (35mm negative size) complementary metal oxide semiconductor (CMOS) sensor. The photographs were taken on a tripod with a pano-head at a height of approximately 1.5m above ground.

180. All the resulting visualisations have been prepared to indicate other cumulative development in order that they may assist the cumulative assessment as well as the LVIA.

181. Whilst no two-dimensional image can fully represent the real viewing experience, the visualisation aims to provide a realistic representation of the offshore elements, based on current information and photomontage methodology.

#### 19.26.4 Weather conditions

182. Guidelines for LVIA (GLVIA3) para 8.22 state – *“In preparing photomontages, weather conditions shown in the photographs should (with justification provided for the choice) be either:*

- *representative of those generally prevailing in the area; or*
- *taken in good visibility, seeking to represent a maximum visibility scenario when the development may be highly visible”.*

183. In preparing photomontages for the SLVIA, photographs have been taken, with all reasonable effort, in favourable weather conditions during periods of 'very good' or 'excellent' visibility conditions - seeking to represent a maximum visibility scenario when the WTGs and OSP of the Offshore Project may be most visible.

#### 19.26.5 Methodology for production of visualisations

184. Photomontages have been produced in accordance with NatureScot Visual Representation of Windfarms Guidance (NatureScot, 2017) and Landscape Institute (2019) Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals.

185. A photomontage is a visualisation which superimposes an image of a WTGs and OSP of the Offshore Project upon a photograph or series of photographs. Photomontage is a widespread and popular visualisation technique, which allows

changes in views and visual amenity to be illustrated and assessed, within known views of the 'real' landscape.

186. To create the baseline panorama, the frames are individually cylindrically projected and then digitally joined to create a fully cylindrically projected panorama using Adobe Photoshop or PTGui software. This process avoids the wide-angle effect that will result should these frames be arranged in a perspective projection, whereby the image is not faceted to allow for the cylindrical nature of the full 360-degree view but appears essentially as a flat plane.
187. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.
188. The baseline photographs and cumulative wireline visualisations shown for each viewpoint cover a 90-degree field of view (or in some cases, up to 360-degree), which accords with NatureScot guidance. These are cylindrically projected images and should be viewed flat at a comfortable arm's length.
189. The photographs are also joined to create planar projection panoramas using PTGui software. These are used in the creation of the 53.5 degree field of view photomontages.
190. Wireline representations that illustrate the Offshore Project and set within a computer-generated image of the landform are used in the assessment to predict theoretical appearance of the WTGs. These are produced with Resoft WindFarm software and are based on a terrain model with a 50m data grid (OS Panorama) with a more detailed area of terrain modelling (OS terrain 5) used for the coastal parts of the study area, which includes the majority of viewpoints used in the SLVIA. There are limitations in the accuracy of digital terrain model (DTM) data so that landform may not be picked up precisely and may result in WTGs being more or less visible than is shown, however, the use of OS Terrain 5 minimises these limitations. Where descriptions within the assessment identify the numbers of WTGs visible this refers to the illustrations generated and therefore the reality may differ to a degree from these impressions.
191. Daytime visualisations show a WTG model which represents the maximum height WCS of the WTGs and OSP of the Offshore Project in the Windfarm Site and allow the potential proportions of these elements to be appreciated from the visualisations.
192. Fully rendered photomontages have been produced for the agreed viewpoints using Resoft WindFarm software, to provide a photorealistic image of the appearance of the WTGs and OSP of the Offshore Project. In the daytime photomontages

modelled representations are combined with the baseline view photographs to create a photorealistic rendered photomontage image of the development.

193. 'Panoramic photomontages' are produced in the SLVIA with a 53.5° HFoV, based on relevant guidance (NatureScot, 2017) and due to their suitability to encompass the horizontal spread of the WTGs and OSP of the Offshore Project and show the turbines at a representative scale and distance. In some views, two adjacent 53.5° photomontages will be required to capture the horizontal spread of the WTGs and OSP of the Offshore Project.
194. The 53.5 degree field of view wirelines and photomontages are prepared using a planar projected image and should also be viewed flat at a comfortable arm's length. These images are each printed on paper 841 x 297mm (half A1) which provides for a relatively large scale image. Images viewed on a monitor screen should be viewed so that the image height of the 53.5 degree photomontage measures 26cm on the screen (as per the printed image height).
195. In the wirelines, the WTGs are shown with the central WTGs facing the viewer directly, with the full rotor diameter visible at its tallest extent. In the photomontages, the WTG blades are shown with a random appearance with the central WTGs facing the viewer directly.
196. WTGs and the OSP are shown in the photomontages from a selection of key views, with all other views showing wirelines with WTGs only.
197. Rendering of the WTGs in the photomontages is as photorealistic as possible to the conditions shown in each viewpoint photograph. In order to address the difficulty of representing wind farms clearly within the photos, and in line with guidance (NatureScot, 2017) some enhancement and re-rendering of the existing operational offshore WTGs has been applied to ensure that they are clear in the finished 53.5 degree photomontages (but not in the 90 degree baseline panoramas), in order to improve the clarity of the illustration.
198. There is some variation in the appearance and visibility of the WTGs between the viewpoints, as they are rendered to suit the conditions shown in each of the different viewpoint photographs, which have some unavoidable degree of variation in terms of lighting and weather conditions. The key requirement is that the WTGs need to be rendered with sufficient contrast against the skyline backdrop to illustrate their maximum visibility scenario in each image. Photomontages have been prepared to depict how the WTGs and OSP of the Offshore Project may appear to illustrate the worst-case. The full suite of viewpoint photomontages should be viewed to gain an impression of the likely visual effects of the WTGs and OSP of the Offshore Project.



### 19.26.6 Night-time visualisations

199. Night-time visualisations have been produced to visually represent aviation and marine navigation lighting at night.
200. The visual effect of the WTGs and OSP of the Offshore Project at night has been assessed in **Chapter 19**, informed by the night-time photomontage visualisations produced from one representative viewpoints:
  - Viewpoint 6 – Lundy Island, Old Light (**Figure 19.29g-j**).
201. A worst-case approach is applied in the photomontages and assessment in **Chapter 19** that considers the potential effects of medium-intensity 2000cd lights in clear visibility to support the assessment of the potential worst-case effect. The intensity of the other operational WTG aviation lights in the baseline photography is also used a guide to the likely intensity of the proposed aviation lighting shown in the photomontages.
202. Night-time visualisations have been produced using a combination of using ReSoft WindFarm software's aviation module software for positioning of the lights, 3D modelling software that can simulate lighting conditions, referencing existing lighting imagery/atmospheric conditions from the baseline photographs and professional judgement using photoshop.
203. The appearance of the lights in the night-time photomontages emulates how lights appear in the other parts of the baseline photographs. A light shown in a photograph tends to have a slight 'halo' (or bokeh) around it due to the way a camera lens renders out-of-focus points of light. This is not the way lights are seen in reality, as they tend to much more defined as point sources. However, the proposed lighting has been shown in this way for consistency with the lights in the baseline photographs.

### 19.26.7 Information on limitations of visualisations

204. The photographs and other graphic material such as wirelines and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what has been apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs. Limitations of photomontages are set out further below.
205. The photomontage visualisations of the WTGs and OSP of the Offshore Project (and any wind farm proposal) have a number of limitations when using them to form a judgement on visual impact. These include the following:

- a visualisation can never show exactly what the WTGs and OSP of the Offshore Project will look like in reality due to factors such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image
- the images provided give a reasonable impression of the scale of the WTGs and the distance to the WTGs but can never be 100% accurate
- a static image cannot convey turbine movement, or flicker or reflection from the sun on the turbine blades as they move
- the viewpoints illustrated are representative of views in the area, but cannot represent visibility at all locations
- to form the best impression of the impacts of the WTGs and OSP of the Offshore Project proposal these images are best viewed at the viewpoint location shown
- the images must be printed and viewed at the correct size (260mm by 820mm)
- images should be held flat at a comfortable arm's length. If viewing these images on a wall or board at an exhibition, stand at arm's length from the image presented to gain the best impression
- it is preferable to view printed images rather than view images on screen. Images on screen should be viewed using a normal PC screen with the image enlarged to the full screen height to give a realistic impression
- there are practical limitations to shooting viewpoint photographs only in very good or excellent visibility and at particular times of day. The photographs shown in the visualisations show the most favourable weather conditions available during photographic survey work.

### 19.26.8 Technical methodology - Visualisations

206. In accordance with the requirements of Landscape Institute (2019) Technical Guidance Note 06/19, Table 19.A.6 below sets out the technical information for the preparation of the photomontage visualisation figures.

*Table 19.A.6 Technical methodology - visualisations*

Category	Details
<b>Visualisation type</b>	Type 4 – where survey of viewpoint locations is not required
<b>Camera location</b>	Established via hand-held Garmin GPS
<b>Level of accuracy of location</b>	1-3m (depending on satellites)
<b>Camera</b>	Canon EOS 5D Mark II and Canon EOS 6D Digital SLR. Full-frame (35mm negative size) CMOS sensor.
<b>Lens</b>	50mm fixed f1.4 lens
<b>Tripod</b>	Set to approximately 1.5m. Nodal Ninja panoramic head with Adjust Leveller. Nodal Ninja panoramic head set to take photographs at 20 degree increments. Photographs of tripod positions are shown where available.

Category	Details
<b>Photography process</b>	Camera used on fully manual settings. Photographs taken in RAW image format. Bracketed exposures are taken for each view and those depicting the clearest images are selected to prepare the panoramic image
<b>Preparation of panoramic photographs</b>	PTGUI v12.8 is used to join and cylindrically project the images. Adobe Photoshop 2021 used to correct tonal alterations and create an even range of exposure across the photographs so that the individual photographs are not apparent. Planar panoramic images are prepared using Resoft Windfarm software or Hugin Panorama Stitcher
<b>3D Model/Visualisations</b>	
<b>Topographic height data</b>	Ordnance Survey Terrain 5 (5m resolution). Ordnance Survey Terrain 50 (50m resolution)
<b>Use of coordinates in software</b>	Coordinates are brought in from the surveyed GPS coordinates. Positions checked using aerial photography.
<b>Markers for horizontal alignment</b>	Landform / photo matching
<b>Markers for vertical alignment</b>	Landform / photo matching
<b>Rendering software</b>	Resoft Windfarm v.5.0.1.2 (WTGs in wirelines and photomontages). AutoCAD Map 3D 2018 and Autodesk 3ds Max 2018 (OSP).
<b>Limitations</b>	
<b>Terrain data</b>	There may therefore be local, small-scale landform that is not reflected in the data and subsequently the visualisation but may alter the real visibility of the WTGs and OSP of the Offshore Project, either by screening theoretical visibility or revealing parts of the WTGs and OSP of the Offshore Project that are not theoretically visible.
<b>Movement</b>	Static images are unable to capture the movement within the view or of the WTGs

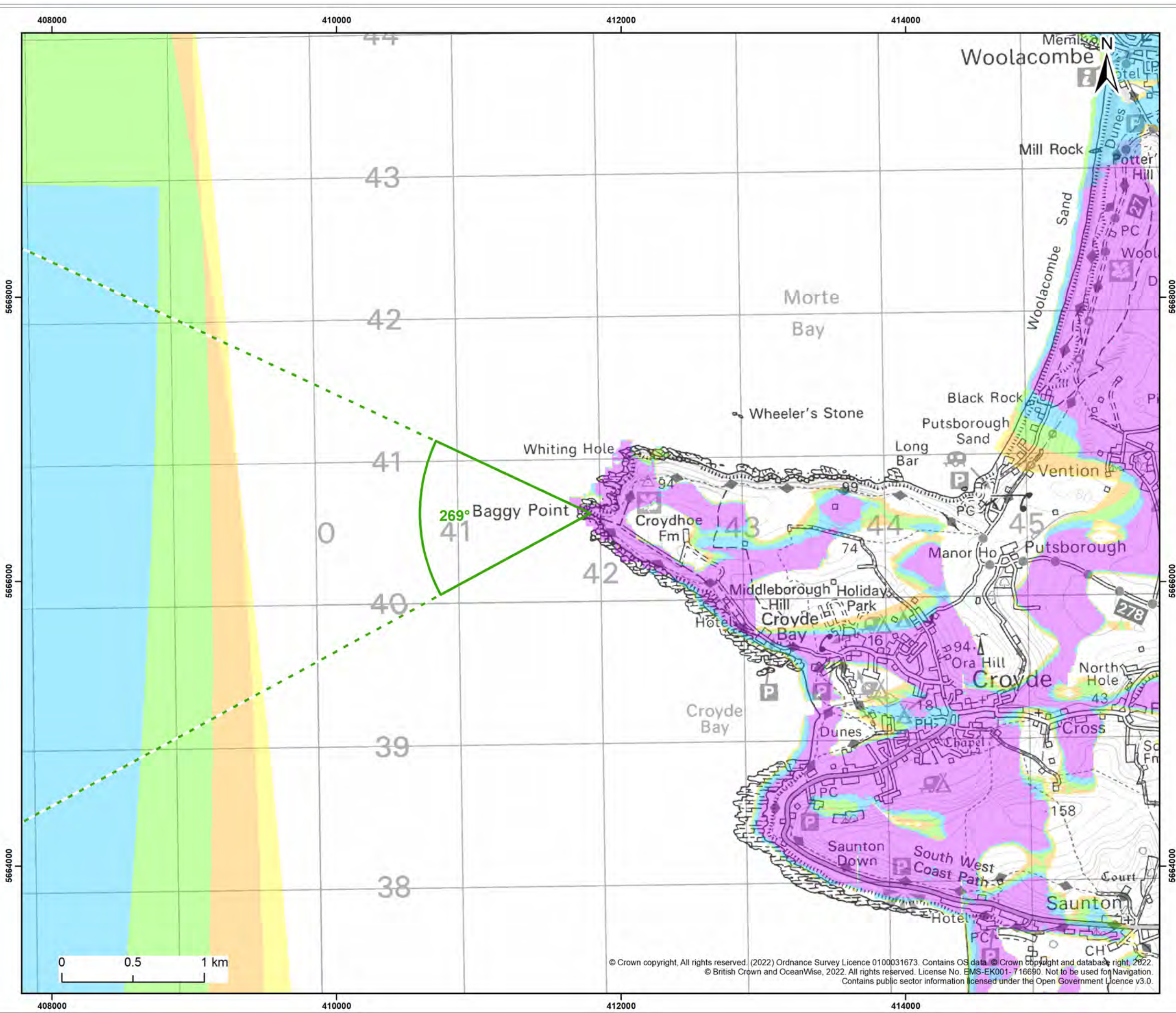
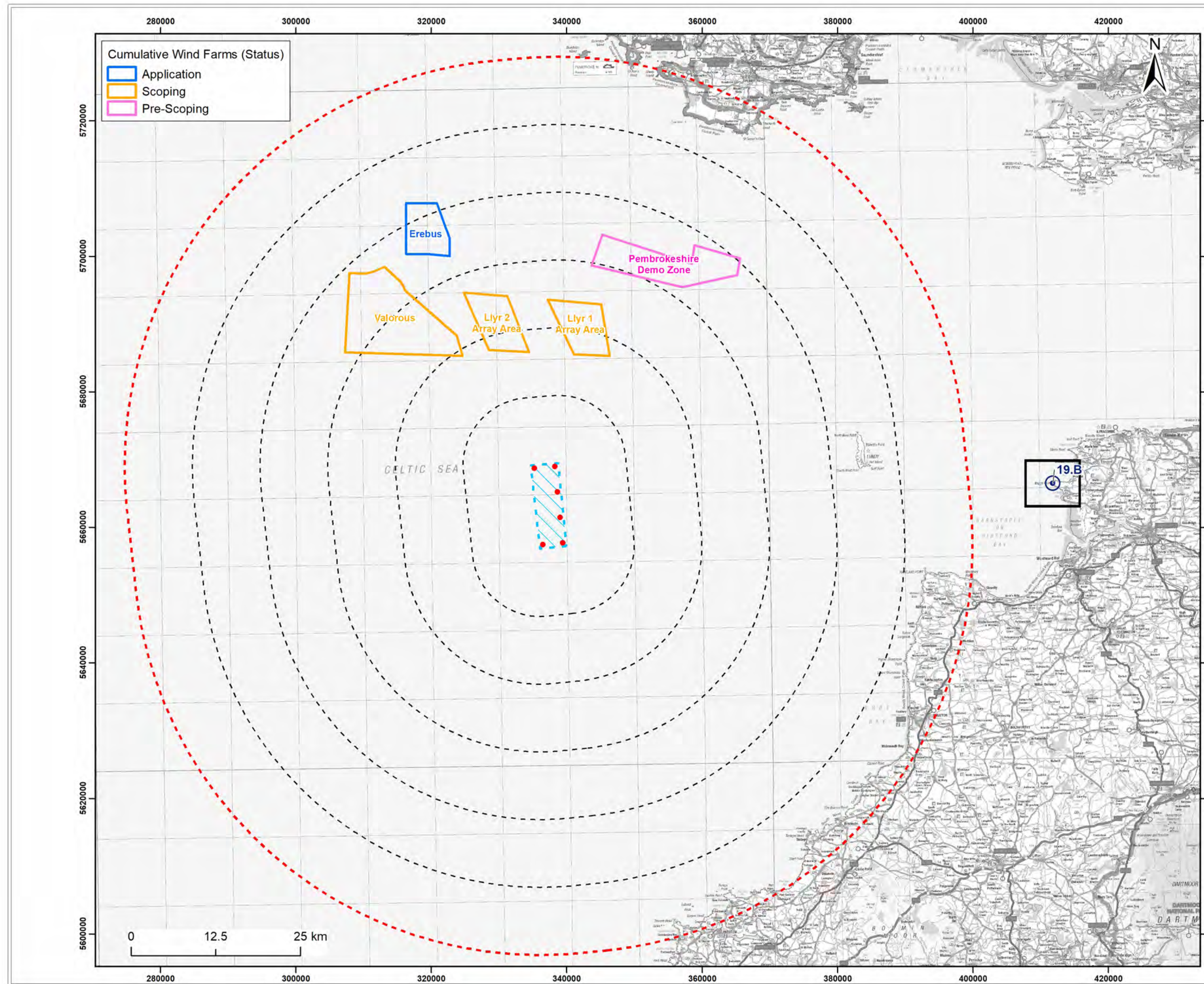


# White Cross Offshore Windfarm Environmental Statement

**Appendix 19.B: Illustrative  
Wireline: Baggy Point**







**Legend:**

- Proposed Turbine (Red dot)
- Windfarm Site (Blue dashed line)
- 10km Radii (Black dashed line)
- 60km Study Area (Red dashed line)
- Viewpoint Location (Blue circle with dot)
- Photomontage and / or Wireline (53.5°HFOV) Zone of theoretical visibility (blade tip) (Green outline)

**No. of turbines theoretically visible**

- 1 (Yellow)
- 2 (Orange)
- 3 (Light Green)
- 4 (Light Blue)
- 5 (Blue)
- 6 (Purple)

Blade tip: 284m above MSL  
 Observer height: 2m  
 DTM: OS Terrain 5  
 Surface features: Excluded  
 DTM resolution: 10m  
 Earth curvature: Included

Client: Offshore Wind Ltd.      Project: White Cross Offshore Windfarm

Title: Viewpoint 19.B: Baggy Point

Figure: 19.B      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0526

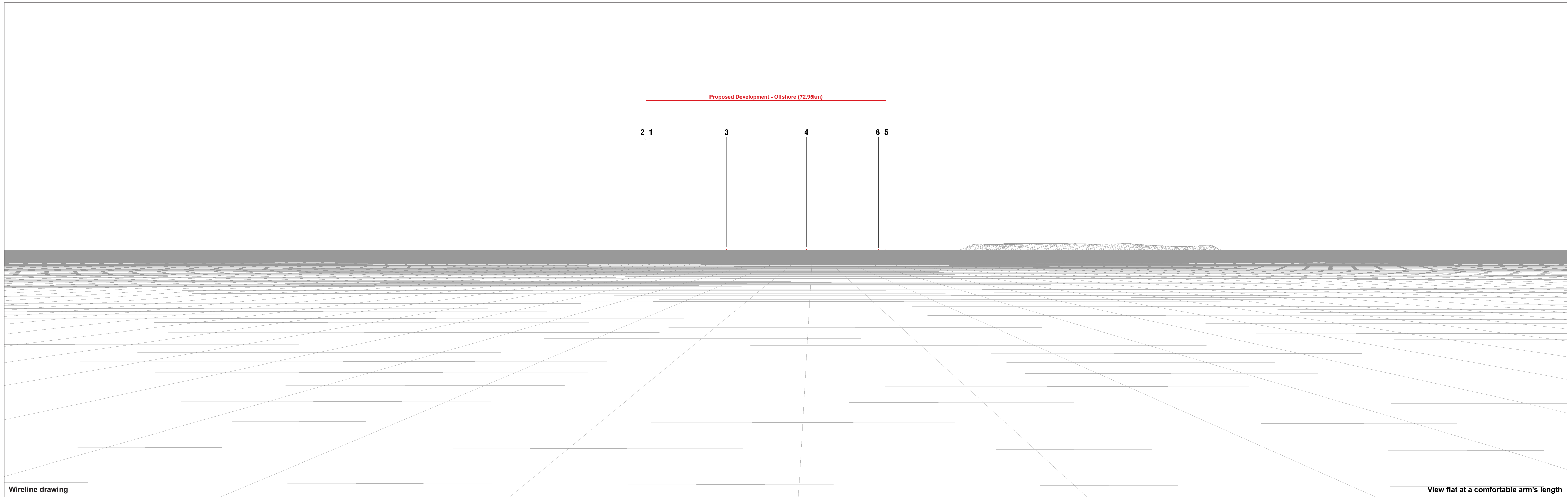
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

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**WHITE CROSS**      **Royal HaskoningDHV**  
 Enhancing Society Together





Wireline drawing

View flat at a comfortable arm's length

OS reference: 241933 E 140621 N  
Eye level: 17.35m AOD  
Direction of view: 269°  
Nearest turbine: 72.95 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: N/A

Appendix: 19.B  
Illustrative Wireline: Baggy Point

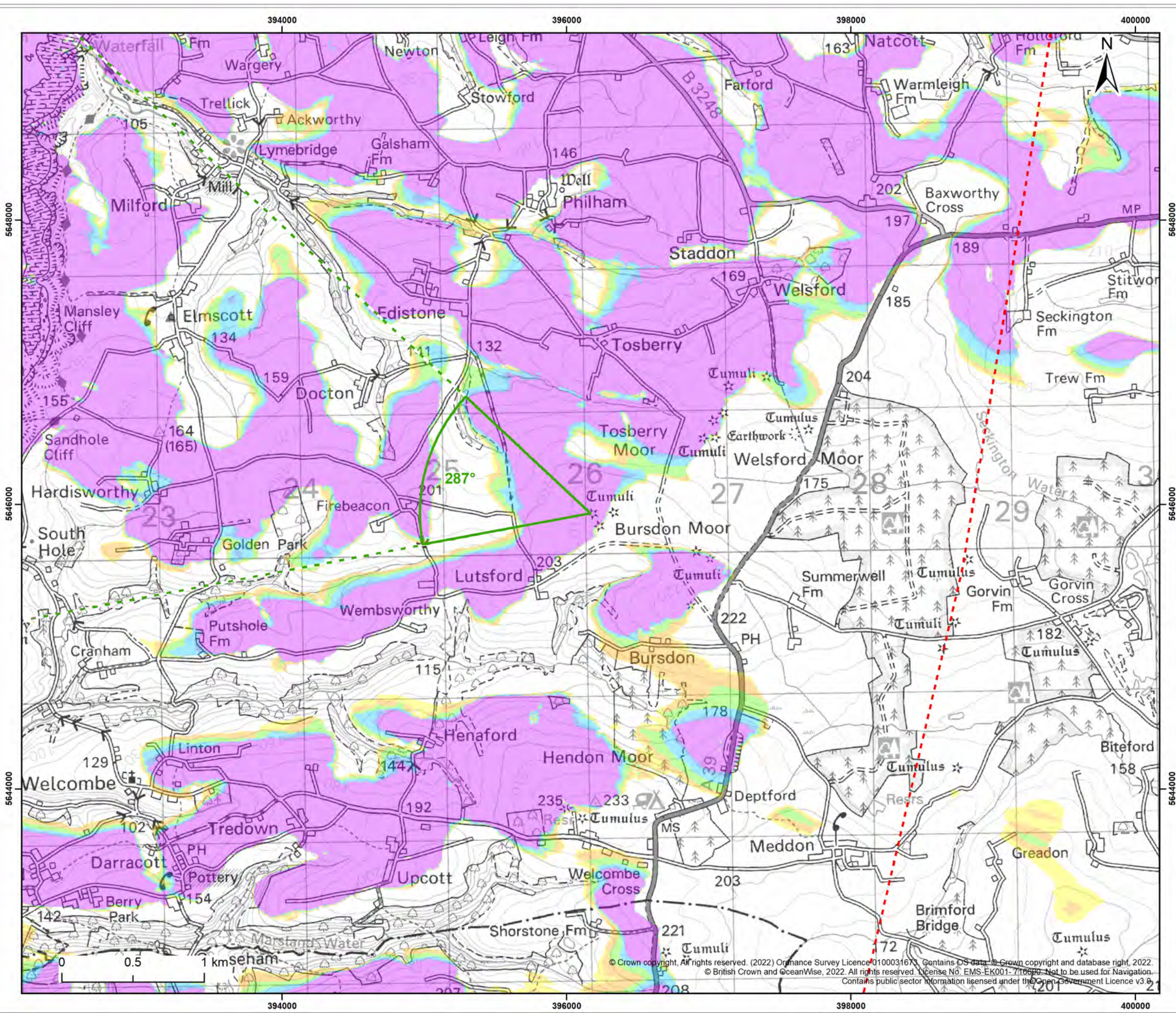
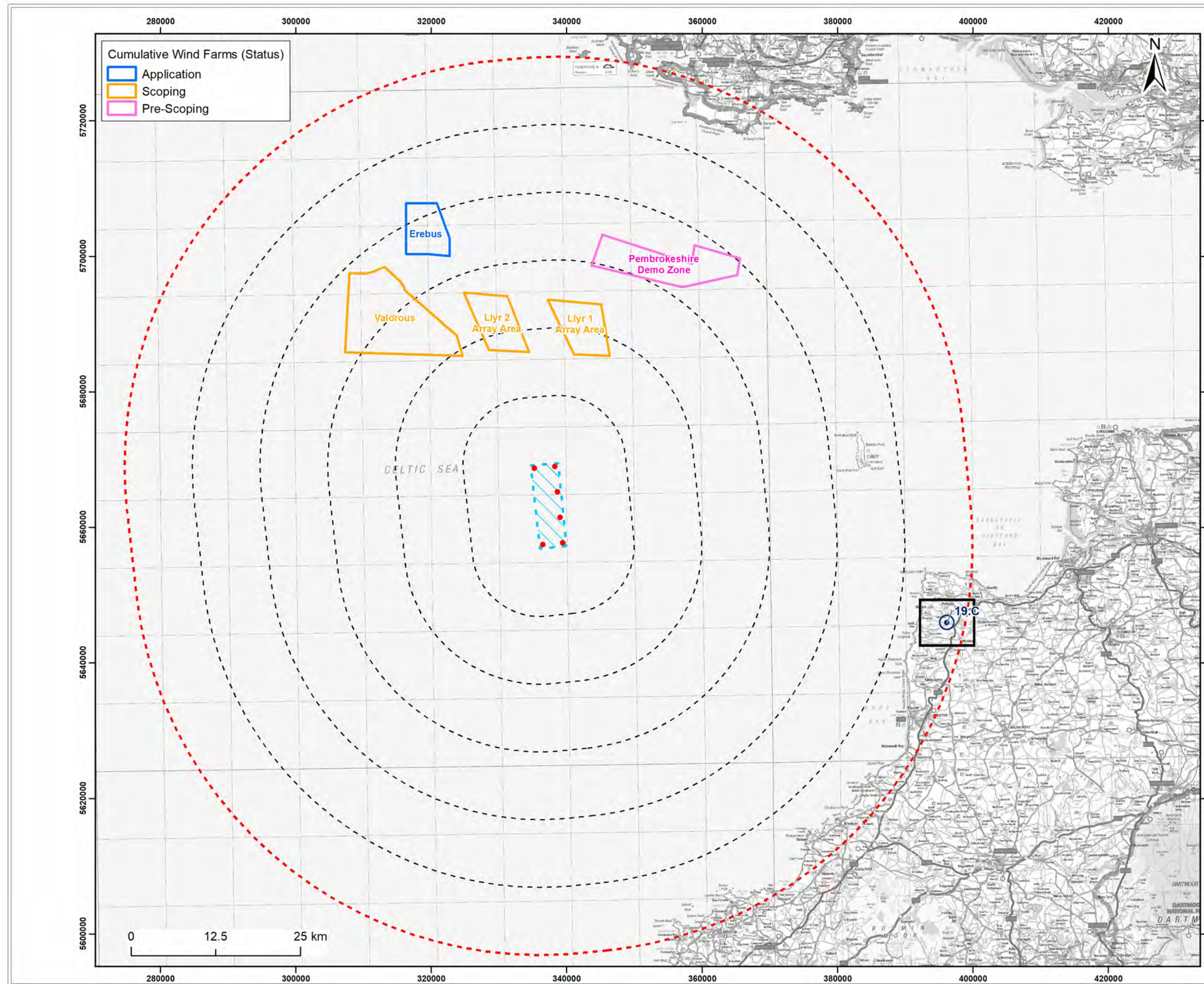


# White Cross Offshore Windfarm Environmental Statement

**Appendix 19.C: Illustrative  
Wireline: Bursdon Moor**







**Legend:**

- Proposed Turbine (Red dot)
- Windfarm Site (Blue dashed line)
- 10km Radii (Black dashed line)
- 60km Study Area (Red dashed line)
- Viewpoint Location (Blue circle with '19.C')
- Photomontage and / or Wireline (53.5°HFOV) Zone of theoretical visibility (blade tip)

**No. of turbines theoretically visible**

- 1 (Yellow)
- 2 (Orange)
- 3 (Light Green)
- 4 (Light Blue)
- 5 (Medium Blue)
- 6 (Purple)

Blade tip: 284m above MSL | Observer height: 2m  
 DTM: OS Terrain 5 | Surface features: Excluded  
 DTM resolution: 10m | Earth curvature: Included

Client: Offshore Wind Ltd. | Project: White Cross Offshore Windfarm

Title: Viewpoint 19.C: Bursdon Moor

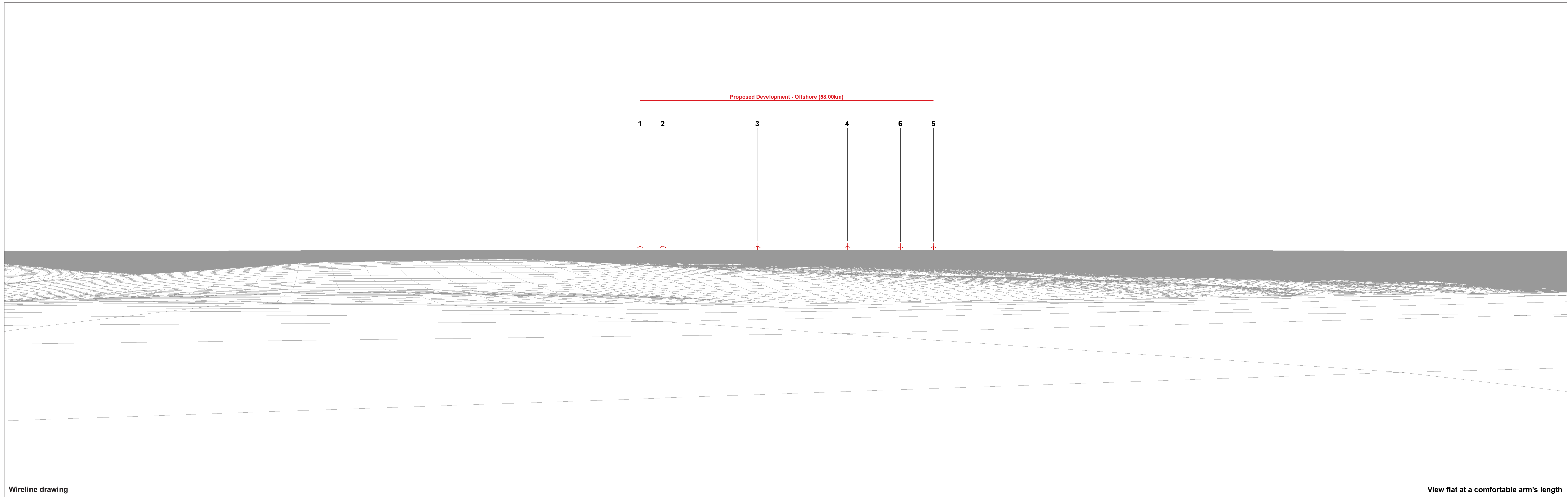
Figure: 19.C | Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0527

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

WHITE CROSS | Royal HaskoningDHV  
 Enhancing Society Together





Wireline drawing

View flat at a comfortable arm's length

OS reference: 226035 E 120288 N  
Eye level: 216.85m AOD  
Direction of view: 287°  
Nearest turbine: 58.00 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: N/A

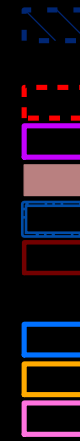
Appendix: 19.C  
Illustrative Wireline: Bursdon Moor



# White Cross Offshore Windfarm Environmental Statement

**Appendix 19.D: Supporting  
Figures and Visualisations**





0 12.5 25 km





0 12.5 25 km



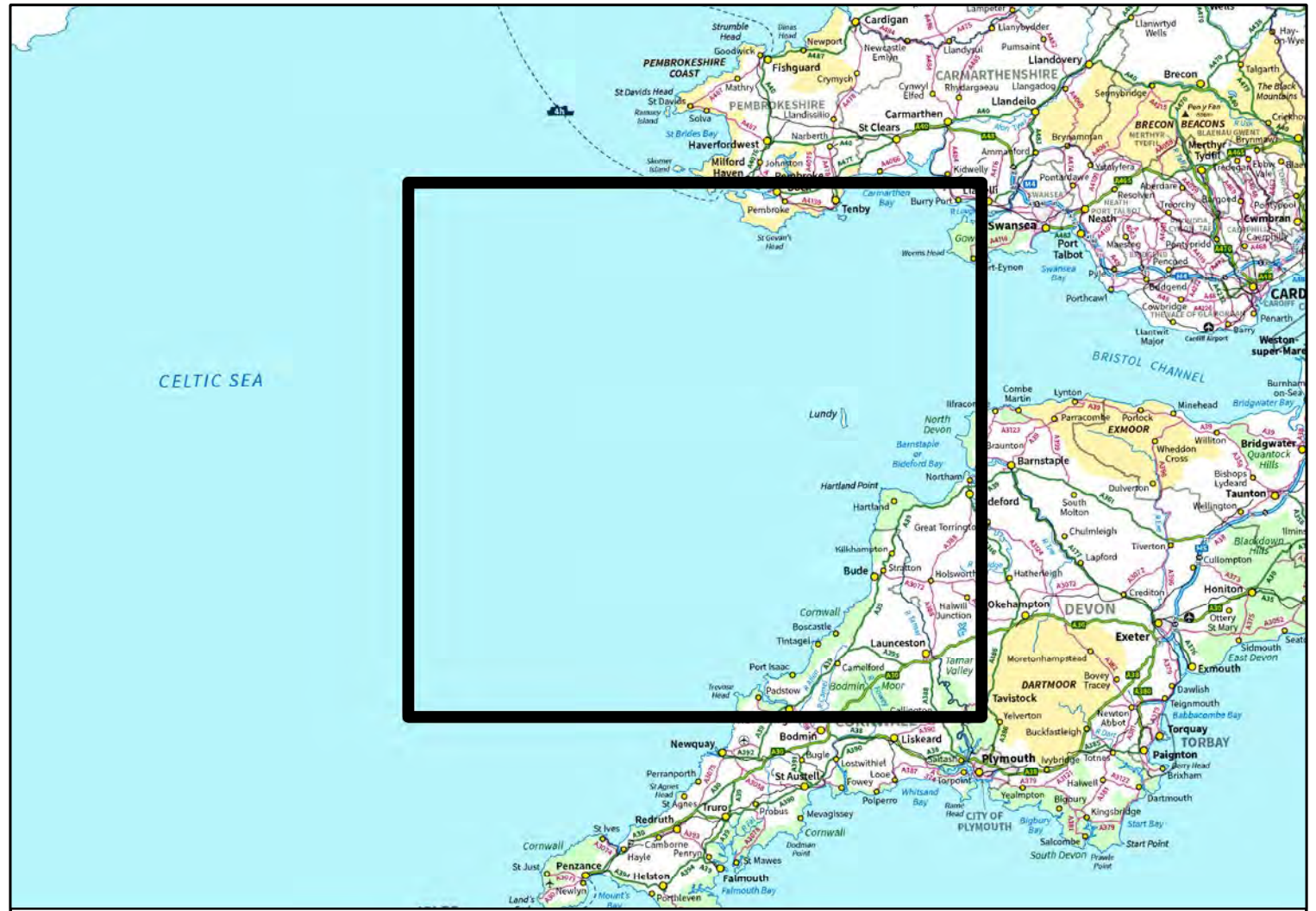
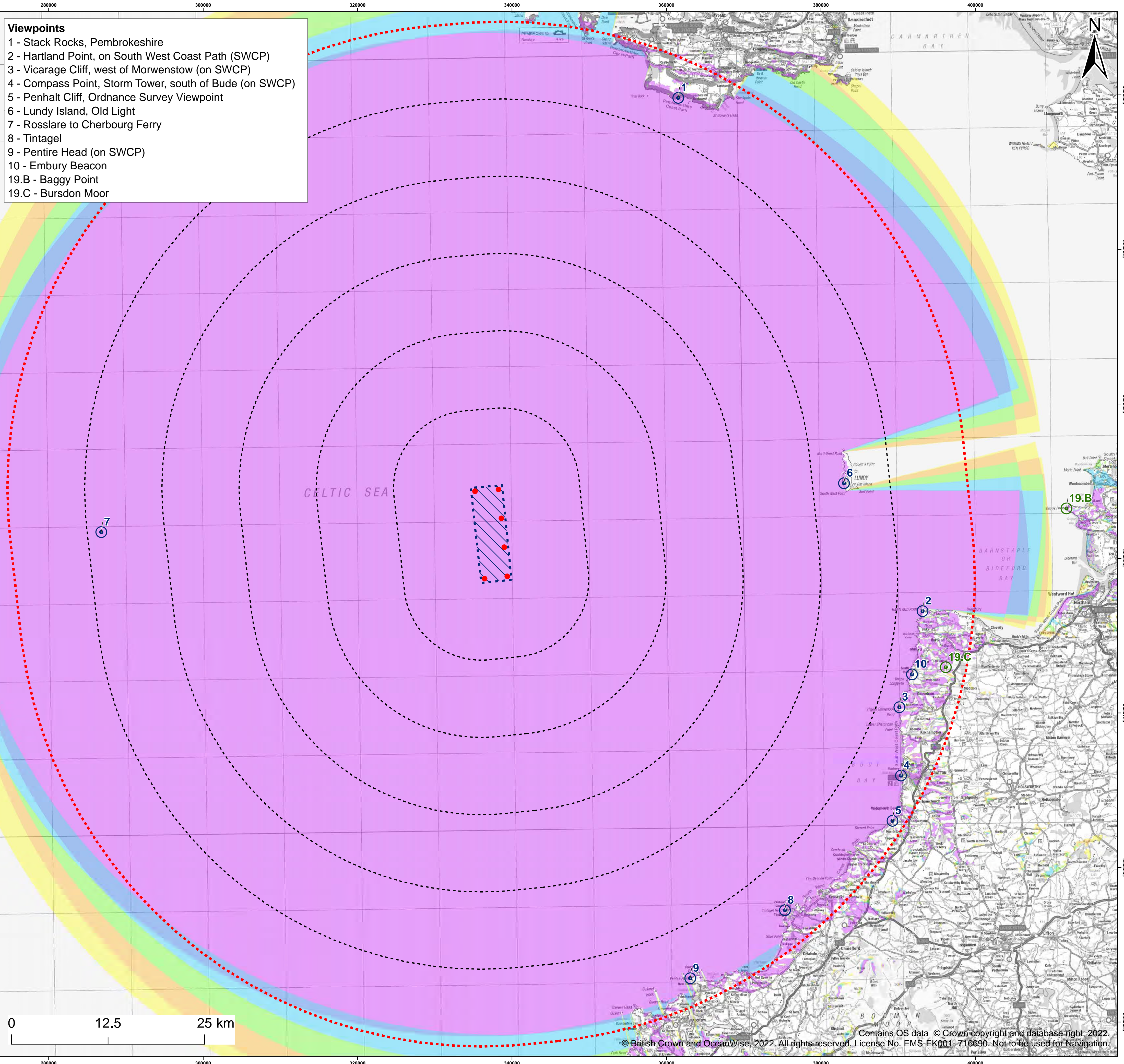


0 12.5 25 km





- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon
  - 19.B - Baggy Point
  - 19.C - Bursdon Moor



- Legend:**
- Proposed Turbine
  - ▨ Windfarm Site
  - 10km Radii
  - ⋯ 60km Study Area
  - ⊙ Viewpoint Location
  - ⊙ Viewpoint Location (Illustrative wireline)
- Zone of theoretical visibility (ZTV) (blade tip)**
- No. of turbines theoretically visible**
- 1 (Yellow)
  - 2 (Orange)
  - 3 (Green)
  - 4 (Cyan)
  - 5 (Blue)
  - 6 (Purple)

Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

<b>Client:</b>	<b>Project:</b>
Offshore Wind Ltd.	White Cross Offshore Windfarm

**Title:**  
Blade Tip Zone of Theoretical Visibility (ZTV)  
for Realistic Maximum Height Worst-Case Scenario

Figure: 19.4      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0495

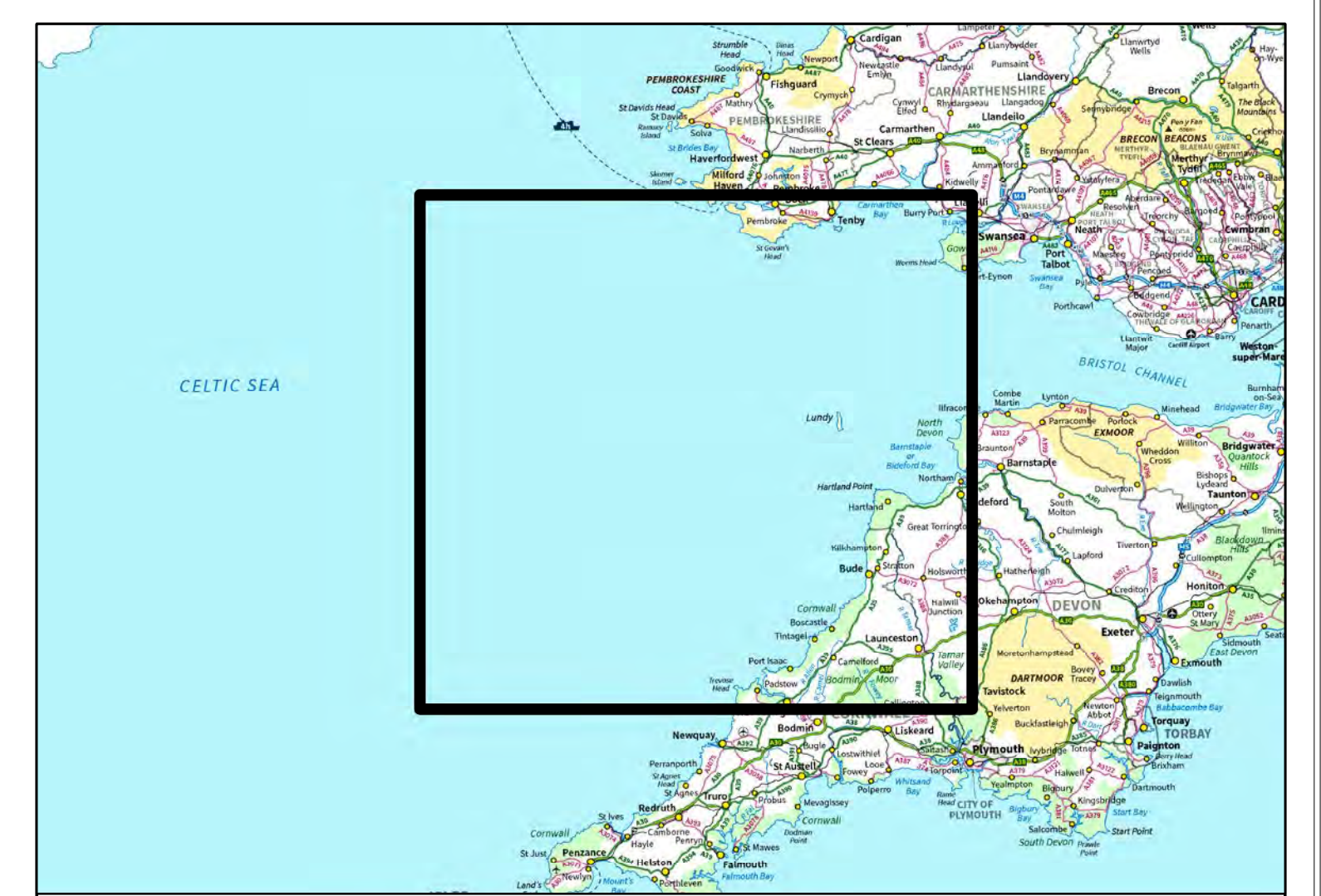
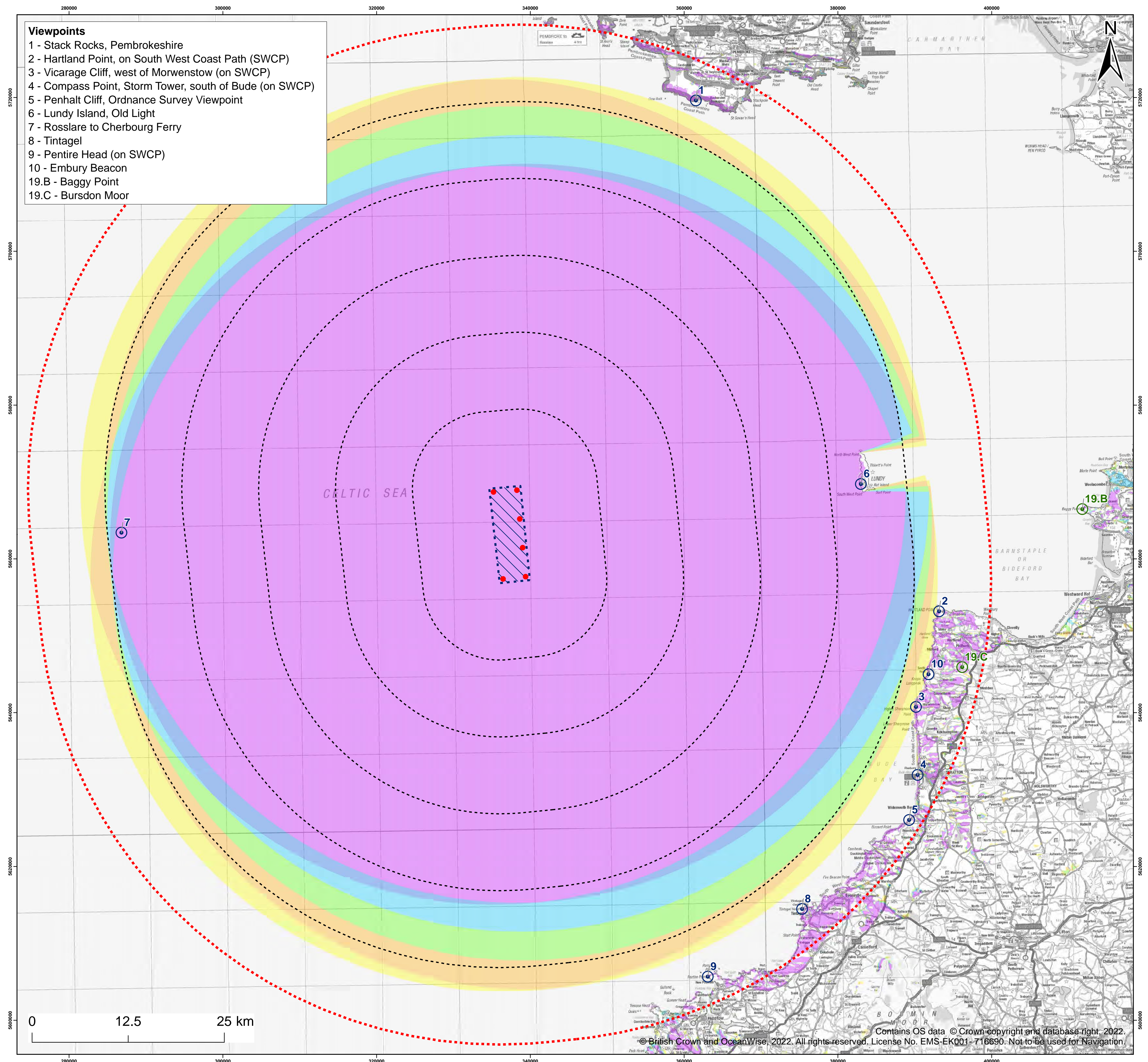
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A1	1:250,000

Co-ordinate system: WGS 1984 UTM Zone 30N





- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon
  - 19.B - Baggy Point
  - 19.C - Bursdon Moor



**Legend:**

- Proposed Turbine
- ▨ Windfarm Site
- ⊖ 10km Radii
- ⊖ 60km Study Area
- ⊙ Viewpoint Location
- ⊙ Viewpoint Location (Illustrative wireline)

**Zone of theoretical visibility (ZTV) (hub height)**

**No. of turbines theoretically visible**

Yellow	1
Orange	2
Green	3
Cyan	4
Blue	5
Purple	6

Hub height:	153m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

<b>Client:</b>	<b>Project:</b>
Offshore Wind Ltd.	White Cross Offshore Windfarm

**Title:**  
Hub height Zone of Theoretical Visibility (ZTV) for Realistic Maximum Height Worst-Case Scenario

<b>Figure:</b> 19.5	<b>Drawing No:</b> PC2978-OPN-ZZ-XX-DR-Z_0496				
<b>Revision:</b>	<b>Date:</b>	<b>Drawn:</b>	<b>Checked:</b>	<b>Size:</b>	<b>Scale:</b>
P01	23/02/2023	JM	CW	A1	1:250,000

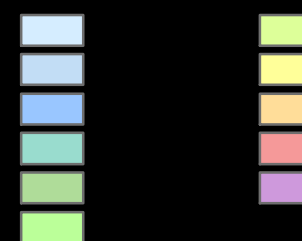
Co-ordinate system: WGS 1984 UTM Zone 30N





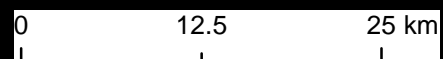
**Viewpoints**

- 1 - Stack Rocks, Pembrokeshire
- 2 - Hartland Point, on South West Coast Path (SWCP)
- 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
- 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
- 5 - Penhalt Cliff, Ordnance Survey Viewpoint
- 6 - Lundy Island, Old Light
- 7 - Rosslare to Cherbourg Ferry
- 8 - Tintagel
- 9 - Pentire Head (on SWCP)
- 10 - Embury Beacon



The horizontal angle ZTV measures how much of the horizontal field of view is occupied by the Development. It is calculated from grid of receptors in the study area and measures the maximum angle from the furthest left to the furthest right extent of the Development.

Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included





0 12.5 25 km





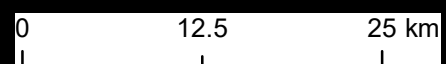
0 12.5 25 km





Pembrokeshire Coast National Park (2013) Seascape Character Areas

- SCA26 - Skokholm and Gateholm coastal waters
- SCA28 - West open sea
- SCA29 - Southern inshore waters
- SCA30 - Southern offshore waters
- SCA31 - Outer Milford Haven
- SCA32 - Inner Milford Haven
- SCA34 - Freshwater West
- SCA35 - Castlemartin coastal waters
- SCA36 - Stackpole coastal waters
- SCA43 - Bristol Channel offshore
- SCA44 - Western offshore; very deep water



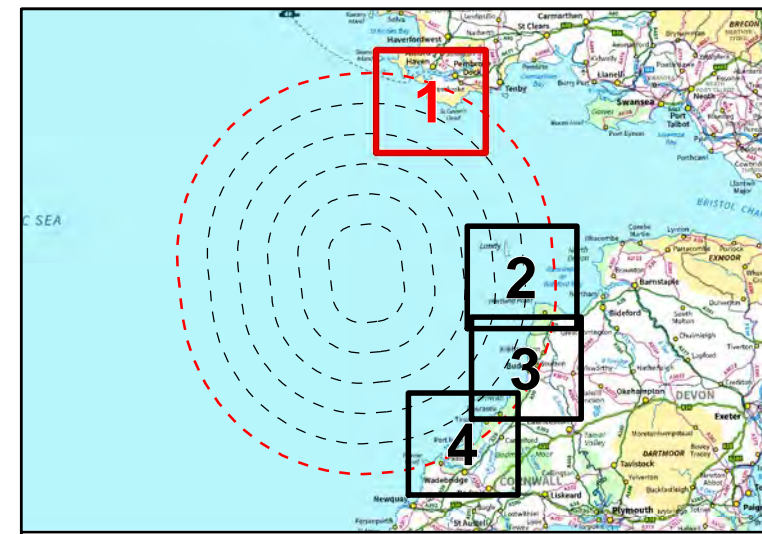
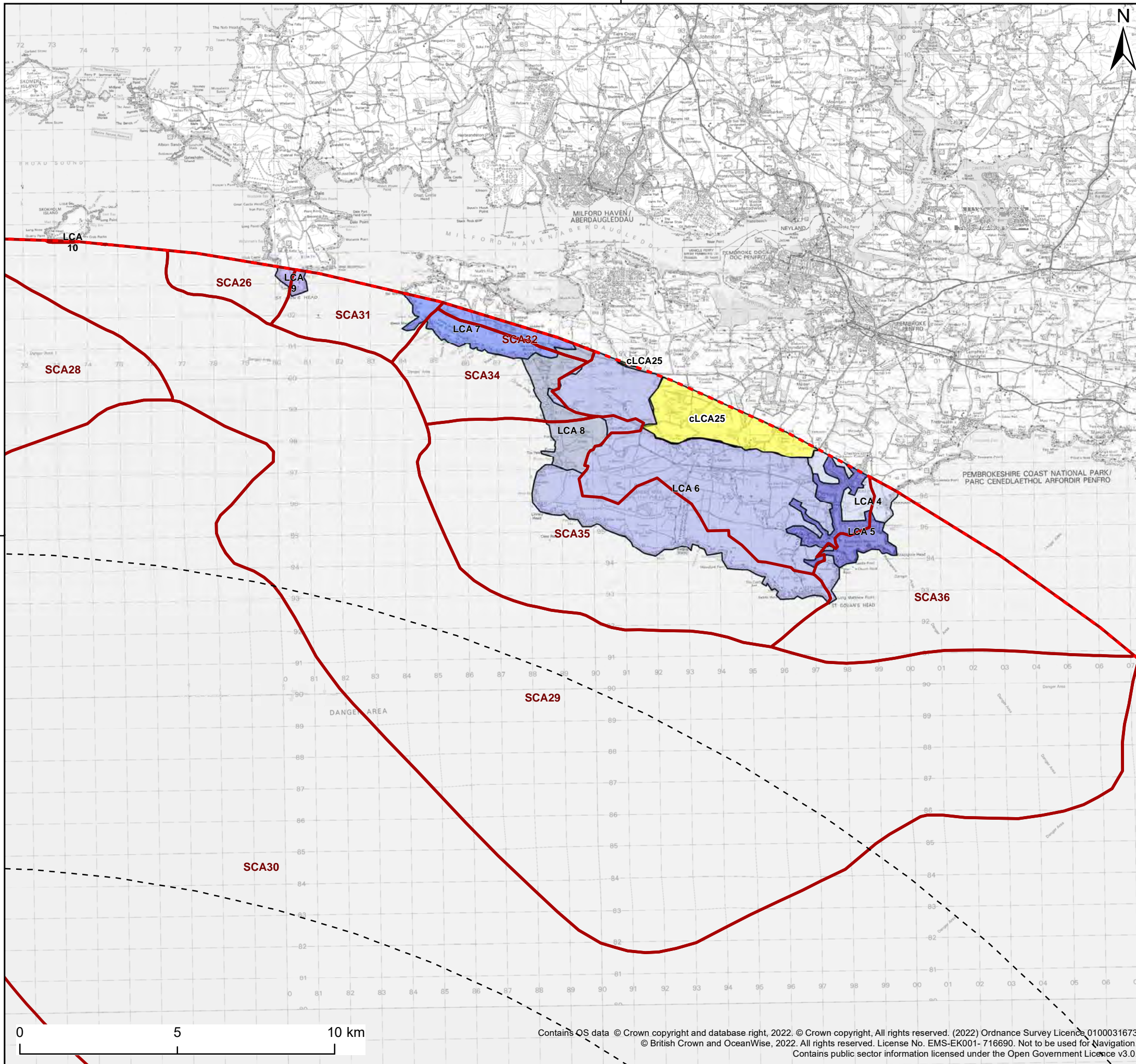


0 12.5 25 km





360000



**Legend:**

- 10km Radii
- 60km Study Area
- Pembroke Coast National Park (2013) Seascapes Character Areas

**Pembrokeshire CNP (2020) Landscape Character Areas**

- LCA 4 - Manorbier/Freshwater East
- LCA 5 - Stackpole
- LCA 6 - Castlemartin/Merrion Ranges
- LCA 7 - Angle Peninsula
- LCA 8 - Freshwater West/Brownslade Burrows
- LCA 9 - Marloes
- LCA 10 - Skomer & Skokholm

**Pembrokeshire Council (2019) Landscape Character Areas**

- cLCA25 - Hundleton and Lamphey

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title:  
Landscape Character – Regional and Local (Map 1)

Figure: 19.11      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0502

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:125,000

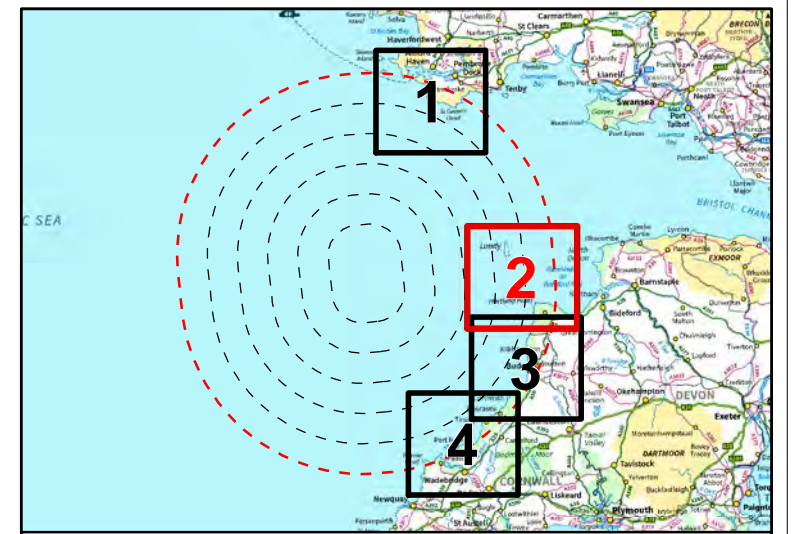
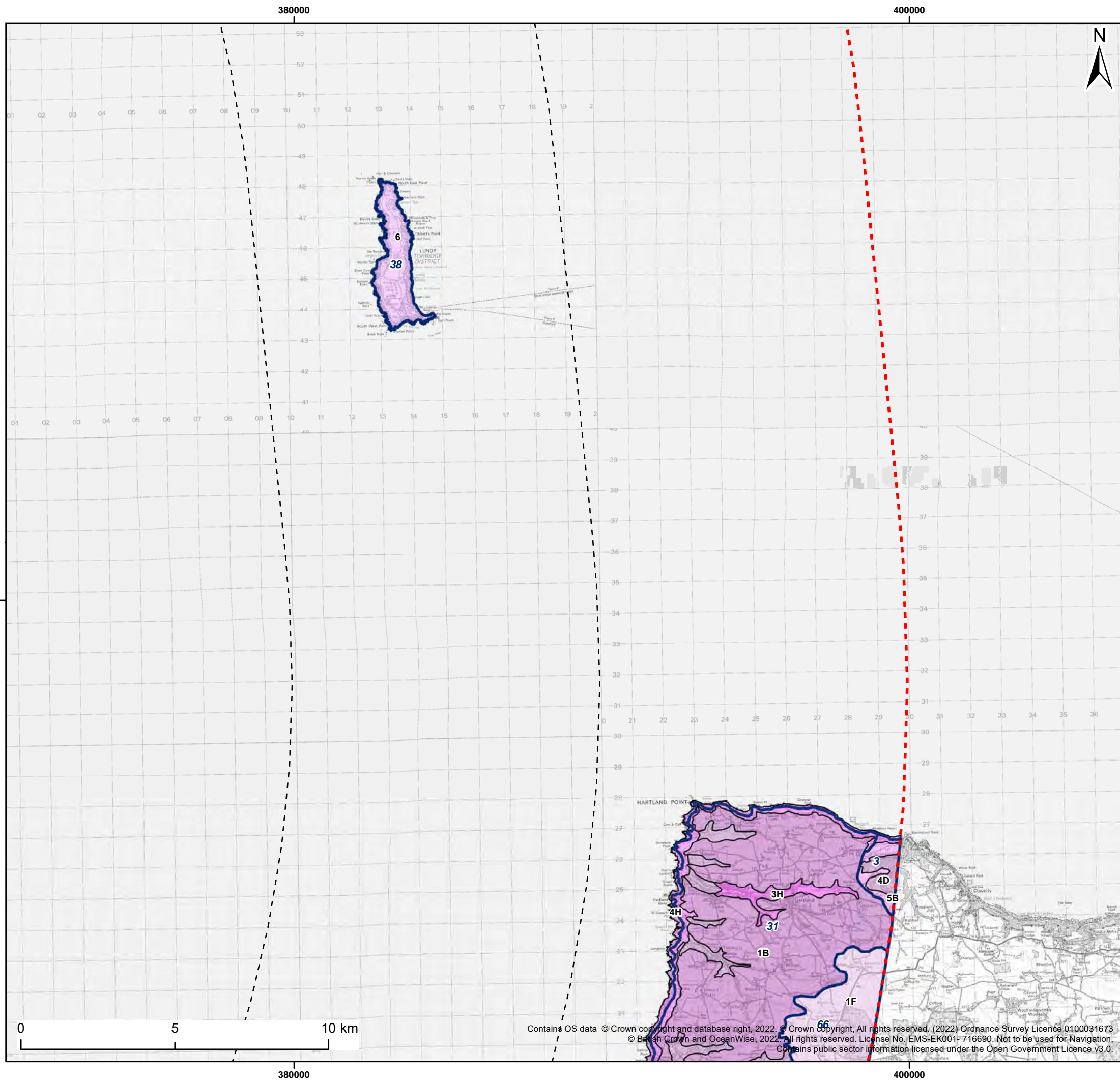
Co-ordinate system: WGS 1984 UTM Zone 30N



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360000





**Legend:**

- 10km Radii
- 60km Study Area

North Devon & Torridge District Councils, Devon County Council and Natural England (2010) Joint Landscape Character Assessment

- 1B - Open coastal plateaux
- 1F - Farmed lowland moorland and Culm grassland
- 3H - Secluded valleys
- 4D - Coastal slopes and combes
- 4H - Cliffs
- 5B - Coastal undulating farmland
- 6 - Offshore islands

Devon County Council (2017) Devon Character Areas

- 3 - Bideford Bay Coast
- 31 - Hartland Peninsula
- 38 - Lundy
- 66 - Western Culm Plateau

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title:  
Landscape Character – Regional and Local (Map 2)

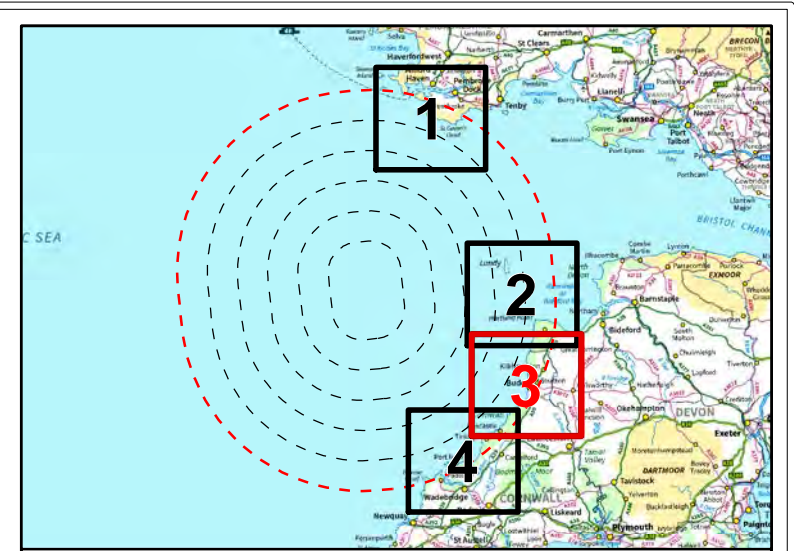
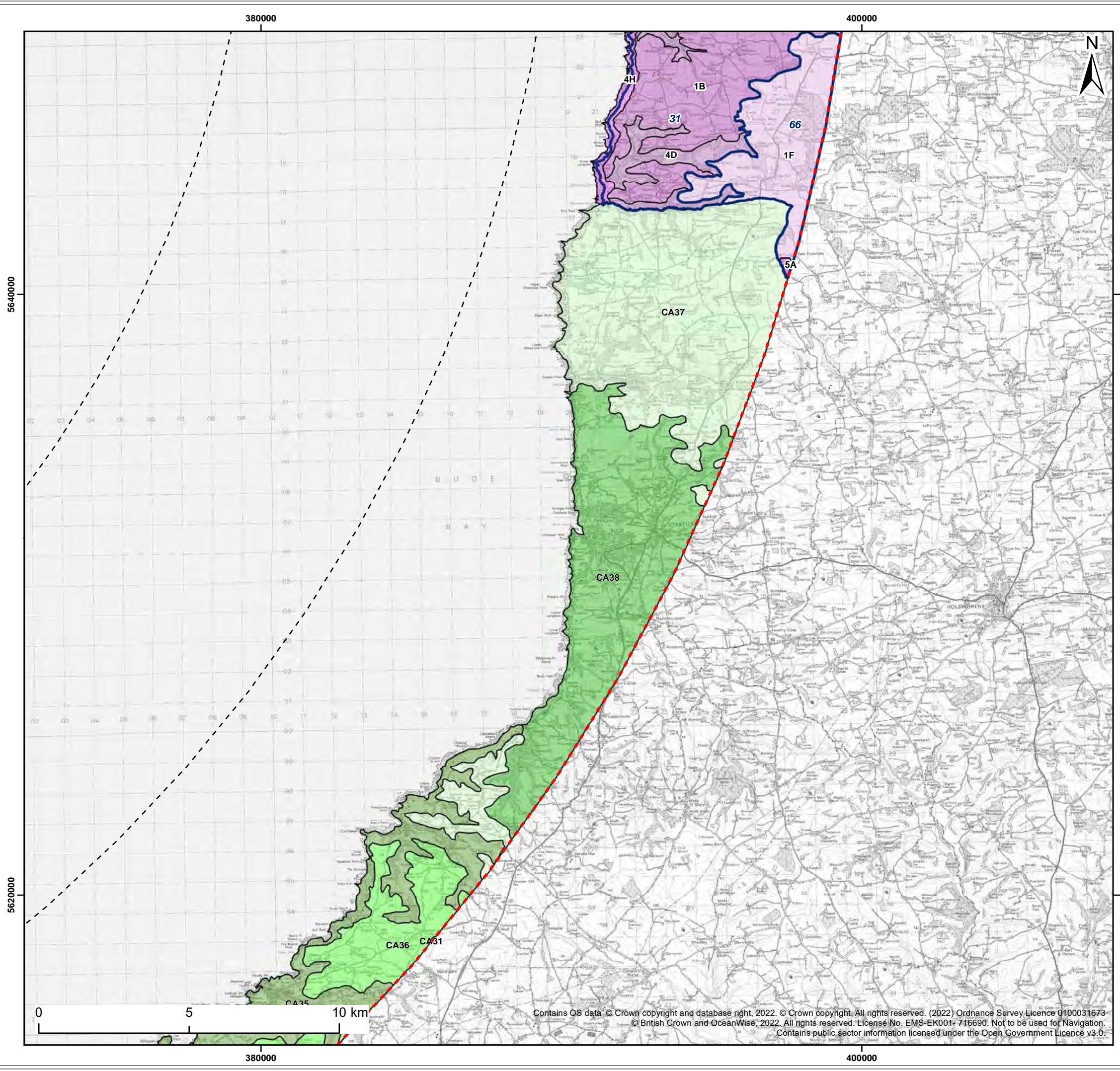
Figure: 19.11 Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0502

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:125,000

Co-ordinate system: WGS 1984 UTM Zone 30N

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- Legend:**
- 10km Radii
  - 60km Study Area
- North Devon & Torridge District Councils, Devon County Council and Natural England (2010) Joint Landscape Character Assessment
- 1B - Open coastal plateaux
  - 1F - Farmed lowland moorland and Culm grassland
  - 4D - Coastal slopes and combes
  - 4H - Cliffs
  - 5A - Inland elevated undulating land
- Devon County Council (2017) Devon Character Areas
- 31 - Hartland Peninsula
  - 66 - Western Culm Plateau
- Cornwall Council (2007) Landscape Character Areas
- CA31 - Upper Tamar and Ottery Valleys
  - CA35 - Kellan Head to Millook Haven Coast
  - CA36 - Delabole Plateau
  - CA37 - Western Culm Plateau
  - CA38 - Bude Basin

Client: <b>Offshore Wind Ltd.</b>	Project: <b>White Cross Offshore Windfarm</b>
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Title:  
**Landscape Character – Regional and Local (Map 3)**

Figure: 19.11      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0502

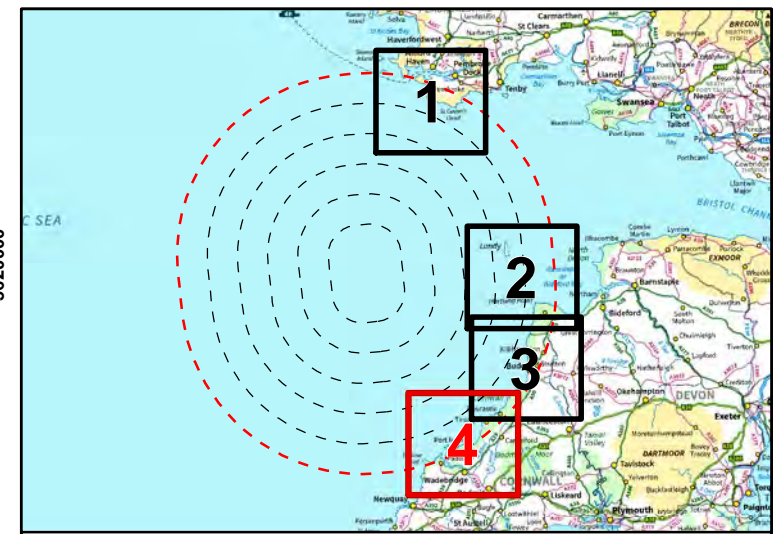
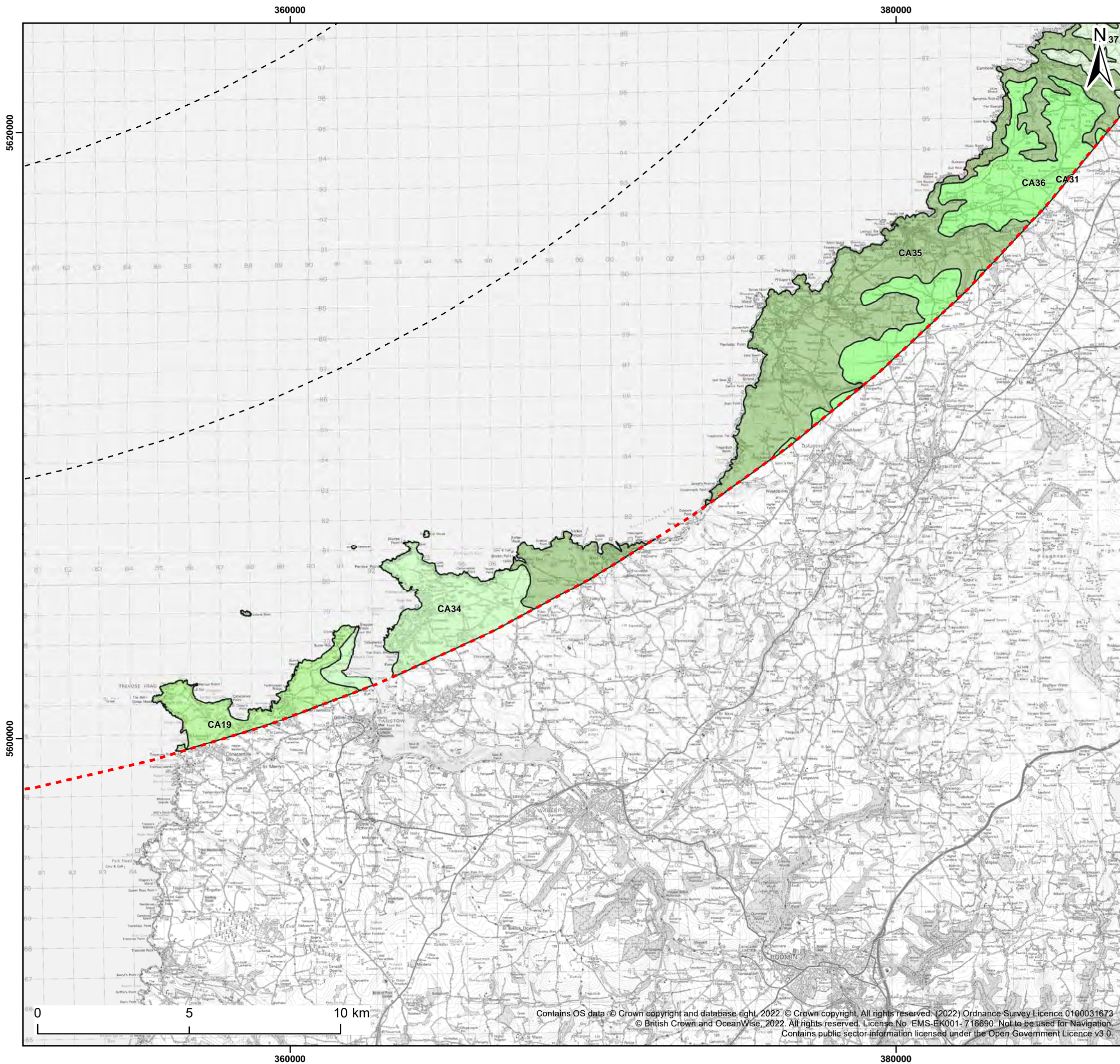
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:125,000

Co-ordinate system: WGS 1984 UTM Zone 30N



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- Legend:**
- 10km Radii
  - 60km Study Area
- Cornwall Council (2007) Landscape Character Areas**
- CA19 - Trevoze Head and Coastal Plateau
  - CA31 - Upper Tamar and Ottery Valleys
  - CA34 - Camel Estuary
  - CA35 - Kellan Head to Millook Haven Coast
  - CA36 - Delabole Plateau
  - CA37 - Western Culm Plateau

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: Landscape Character – Regional and Local (Map 4)

Figure: 19.11 Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0502

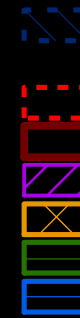
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:125,000

Co-ordinate system: WGS 1984 UTM Zone 30N



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0 12.5 25 km



**Viewpoints**  
1 - Stack Rocks, Pembrokeshire

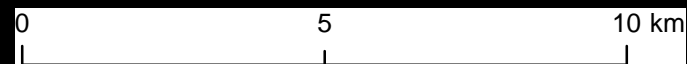


0 5 10 km

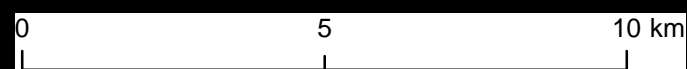




**Viewpoints**  
2 - Hartland Point, on South West Coast Path (SWCP)  
6 - Lundy Island, Old Light  
10 - Embury Beacon



**Viewpoints**  
3 - Vicarage Cliff, west of Morwenstow (on SWCP)  
4 - Compass Point, Storm Tower, south of Bude (on SWCP)  
5 - Penhalt Cliff, Ordnance Survey Viewpoint  
10 - Embury Beacon

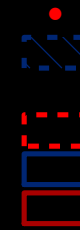


**Viewpoints**  
8 - Tintagel  
9 - Pentire Head (on SWCP)



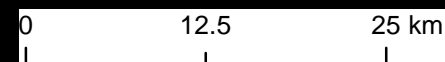
0 5 10 km





Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

- National Marine Character Areas (Wales)**
- 18 - West Pembrokeshire Coastal Waters and Islands
  - 19 - West Pembrokeshire Islands, Bars and Inshore Waters
  - 20 - Irish Sea Open Waters
  - 21 - Milford Haven
  - 22 - South Pembrokeshire Coastal and Inshore Waters
  - 23 - South Pembrokeshire Open Waters
  - 28 - Bristol Channel (Wales)
- National Marine Character Areas (England)**
- MCA 42 - Bideford Bay and Taw-Torridge Estuary
  - MCA 43 - Lundy and Outer Bristol Channel
  - MCA 44 - Hartland Point to Port Isaac Bay
  - MCA 45 - Port Gaverne Bay to St Ives Bay
  - MCA 51 - Bristol Channel Approaches





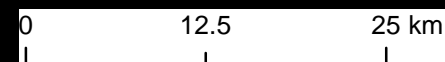
Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

**Pembrokeshire Coast National Park (2013) Seascape Character Areas**

- SCA26 - Skokholm and Gateholm coastal waters
- SCA28 - West open sea
- SCA29 - Southern inshore waters
- SCA30 - Southern offshore waters
- SCA31 - Outer Milford Haven
- SCA32 - Inner Milford Haven
- SCA34 - Freshwater West
- SCA35 - Castlemartin coastal waters
- SCA36 - Stackpole coastal waters
- SCA43 - Bristol Channel offshore
- SCA44 - Western offshore; very deep water

**North Devon and Exmoor (2015) Seascape Character Areas**

- 14 - Outer Bideford Bay
- 15 - Lundy
- 16 - Lundy North
- 22 - Clovelly Coast
- 23 - Inner Bideford Bay
- 24 - Hartland North Coast
- 25 - Hartland Atlantic Coast
- 26 - Hartland Race
- 27 - Lundy South





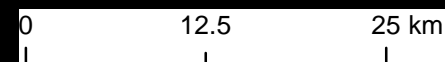
Hub height:	153m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

**Pembrokeshire Coast National Park (2013) Seascape Character Areas**

- SCA26 - Skokholm and Gateholm coastal waters
- SCA28 - West open sea
- SCA29 - Southern inshore waters
- SCA30 - Southern offshore waters
- SCA31 - Outer Milford Haven
- SCA32 - Inner Milford Haven
- SCA34 - Freshwater West
- SCA35 - Castlemartin coastal waters
- SCA36 - Stackpole coastal waters
- SCA43 - Bristol Channel offshore
- SCA44 - Western offshore; very deep water

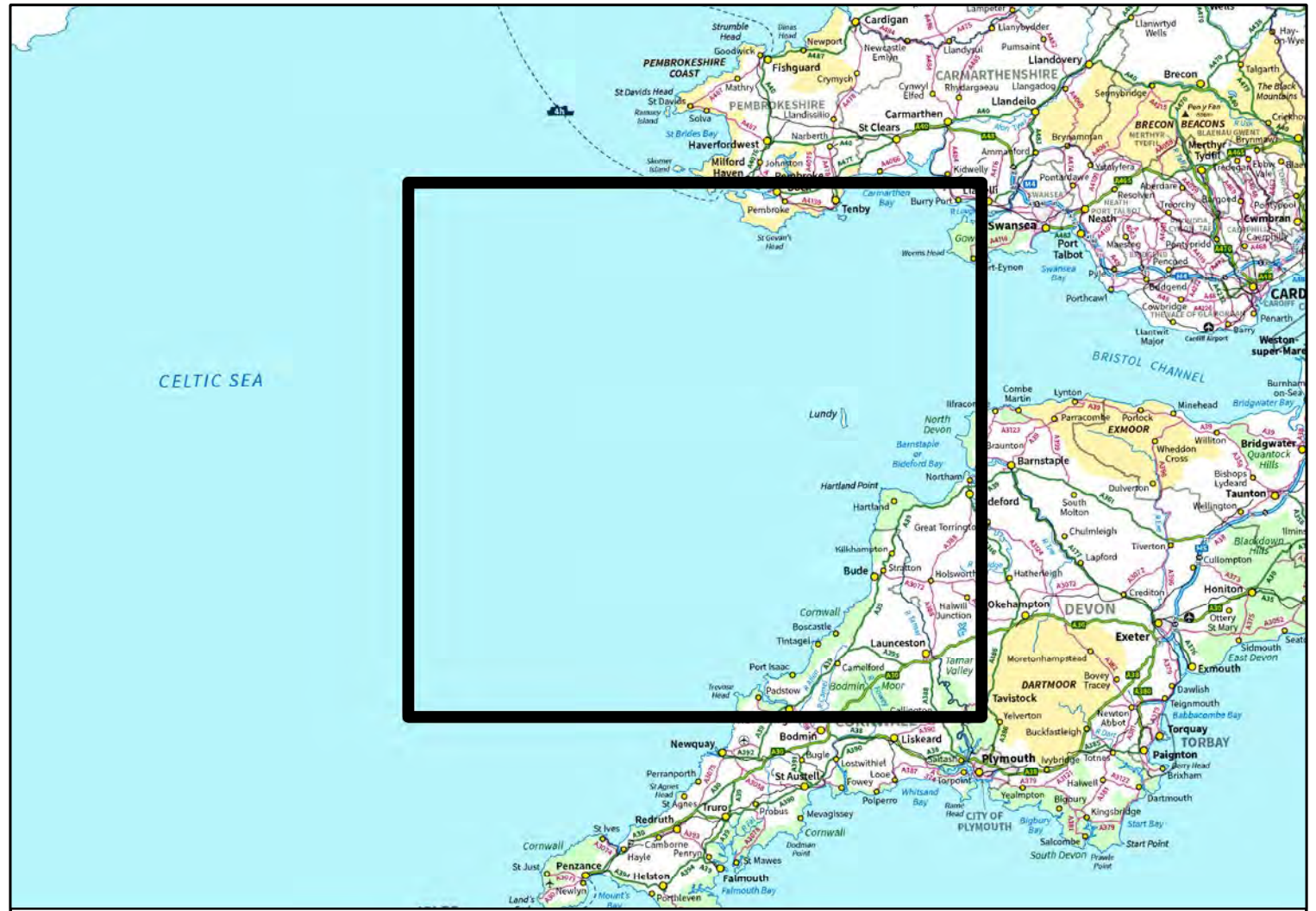
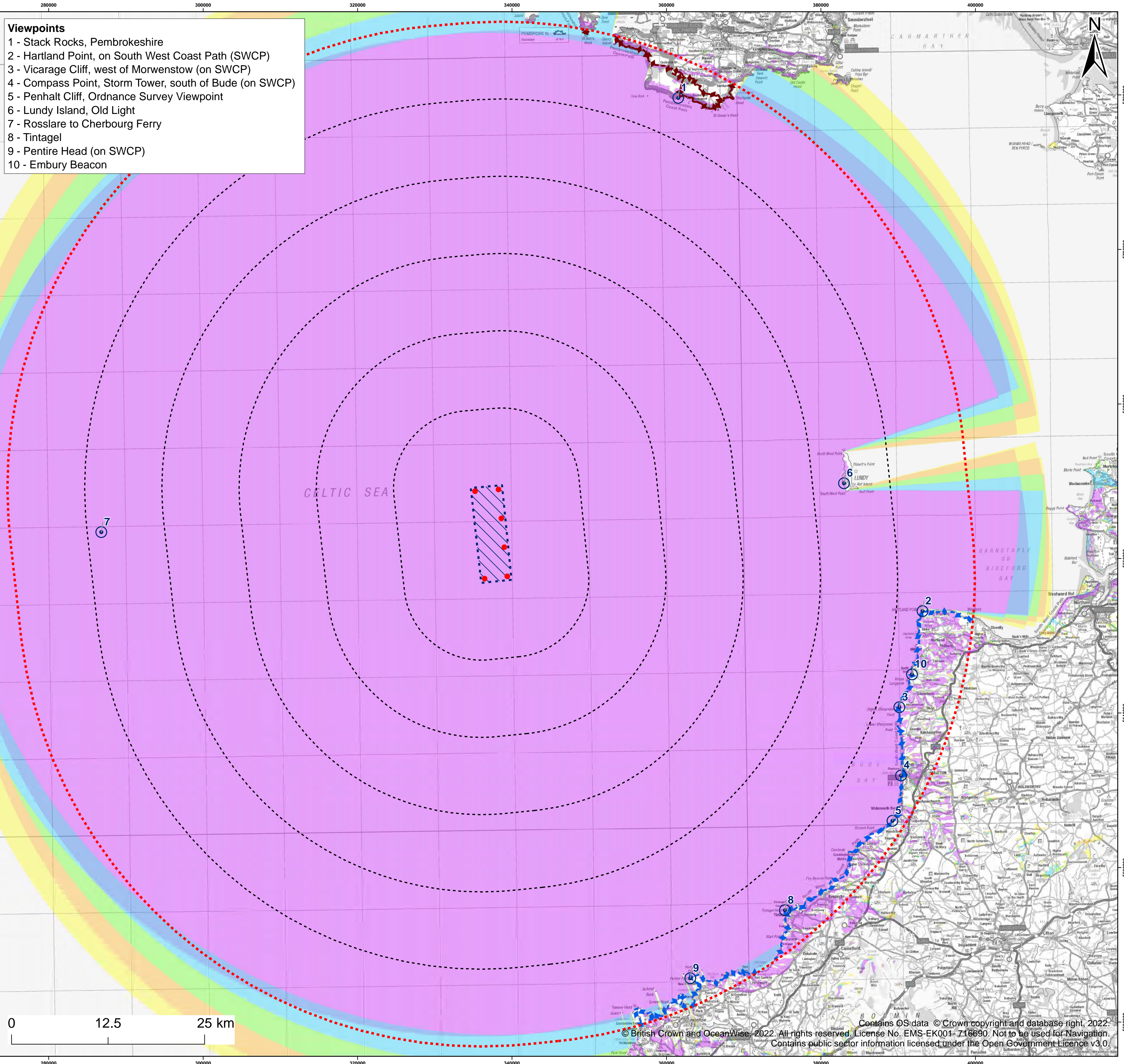
**North Devon and Exmoor (2015) Seascape Character Areas**

- 14 - Outer Bideford Bay
- 15 - Lundy
- 16 - Lundy North
- 22 - Clovelly Coast
- 23 - Inner Bideford Bay
- 24 - Hartland North Coast
- 25 - Hartland Atlantic Coast
- 26 - Hartland Race
- 27 - Lundy South





- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon



**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- South West Coast Path
- Wales Coastal Path (Pembrokeshire Coast Path)

**Zone of Theoretical Visibility (ZTV) (blade tip)**

**No. of turbines theoretically visible**

1
2
3
4
5
6

Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

<b>Client:</b> Offshore Wind Ltd.	<b>Project:</b> White Cross Offshore Windfarm
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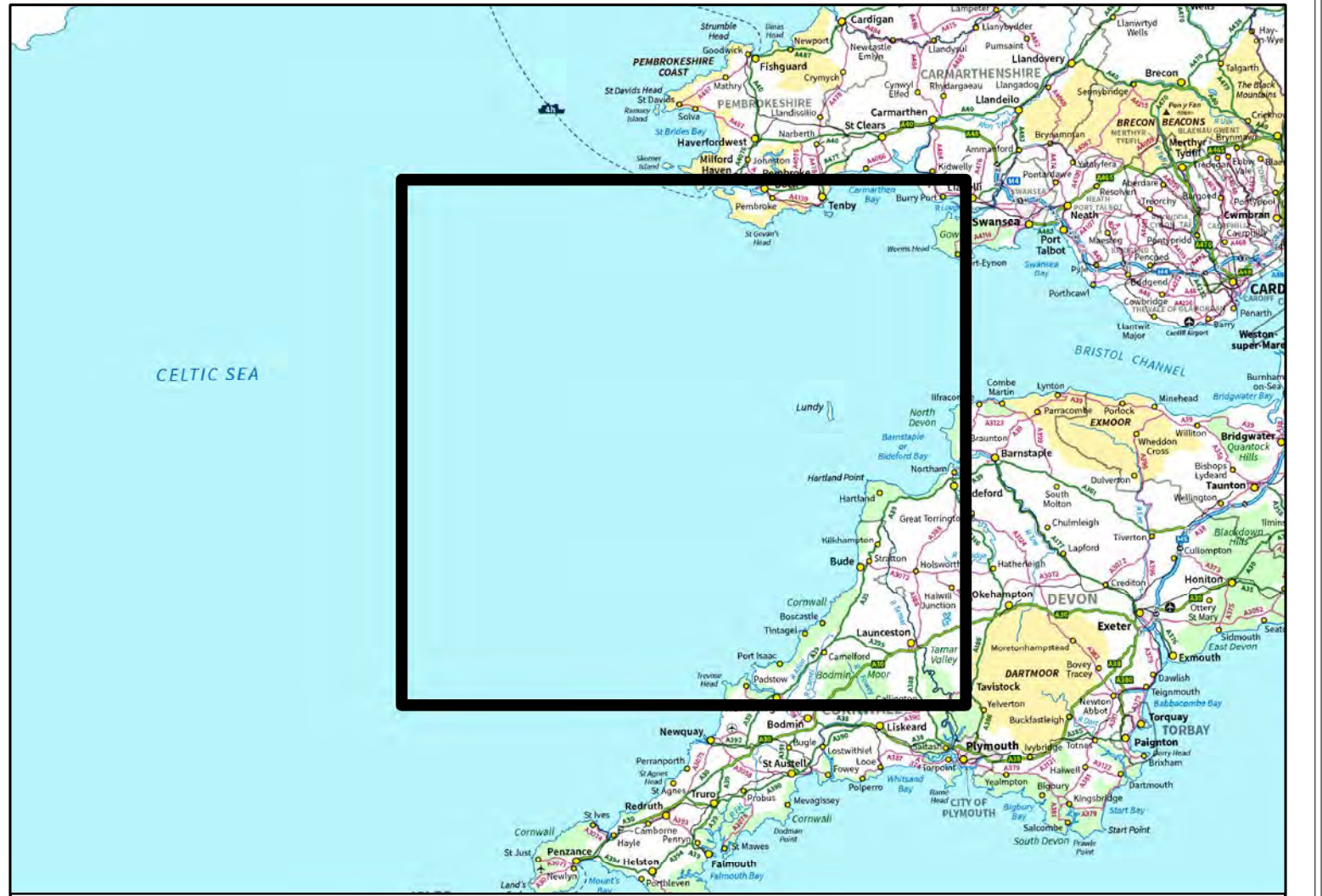
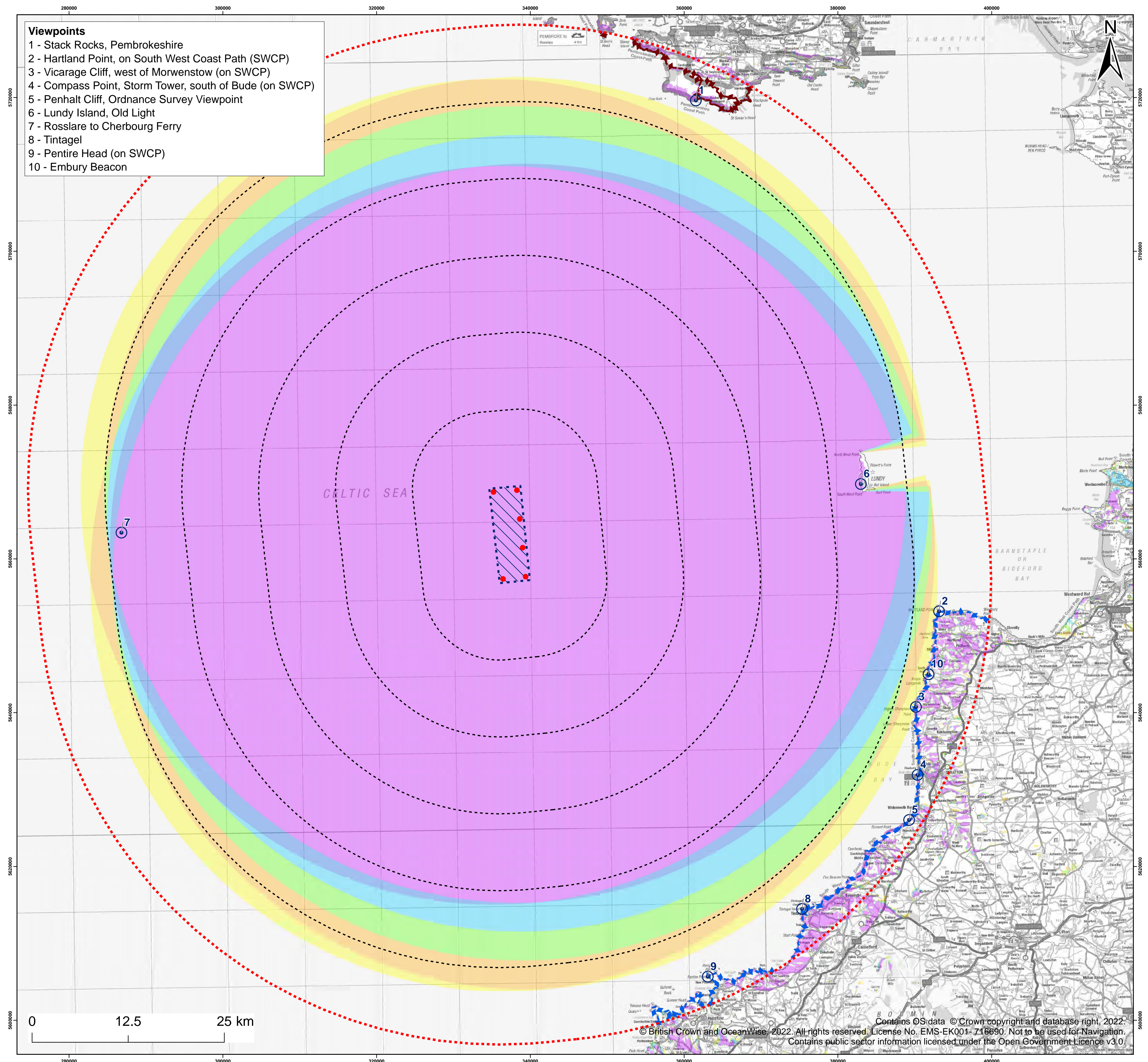
**Title:**  
Long Distance Recreational Routes and Viewpoint Locations with Blade Tip ZTV

<b>Figure:</b> 19.17	<b>Drawing No:</b> PC2978-OPN-ZZ-XX-DR-Z_0508				
<b>Revision:</b>	<b>Date:</b>	<b>Drawn:</b>	<b>Checked:</b>	<b>Size:</b>	<b>Scale:</b>
P01	23/02/2023	JM	CW	A1	1:250,000

**Co-ordinate system:** WGS 1984 UTM Zone 30N



- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon



**Legend:**

- Proposed Turbine
- ▨ Windfarm Site
- 10km Radii
- ⋯ 60km Study Area
- ⊙ Viewpoint Location
- ◆◆ South West Coast Path
- ◆◆ Wales Coastal Path (Pembrokeshire Coast Path)

**Zone of Theoretical Visibility (ZTV) (hub height)**

**No. of turbines theoretically visible**

Yellow	1
Orange	2
Green	3
Cyan	4
Blue	5
Purple	6

Hub height:	153m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

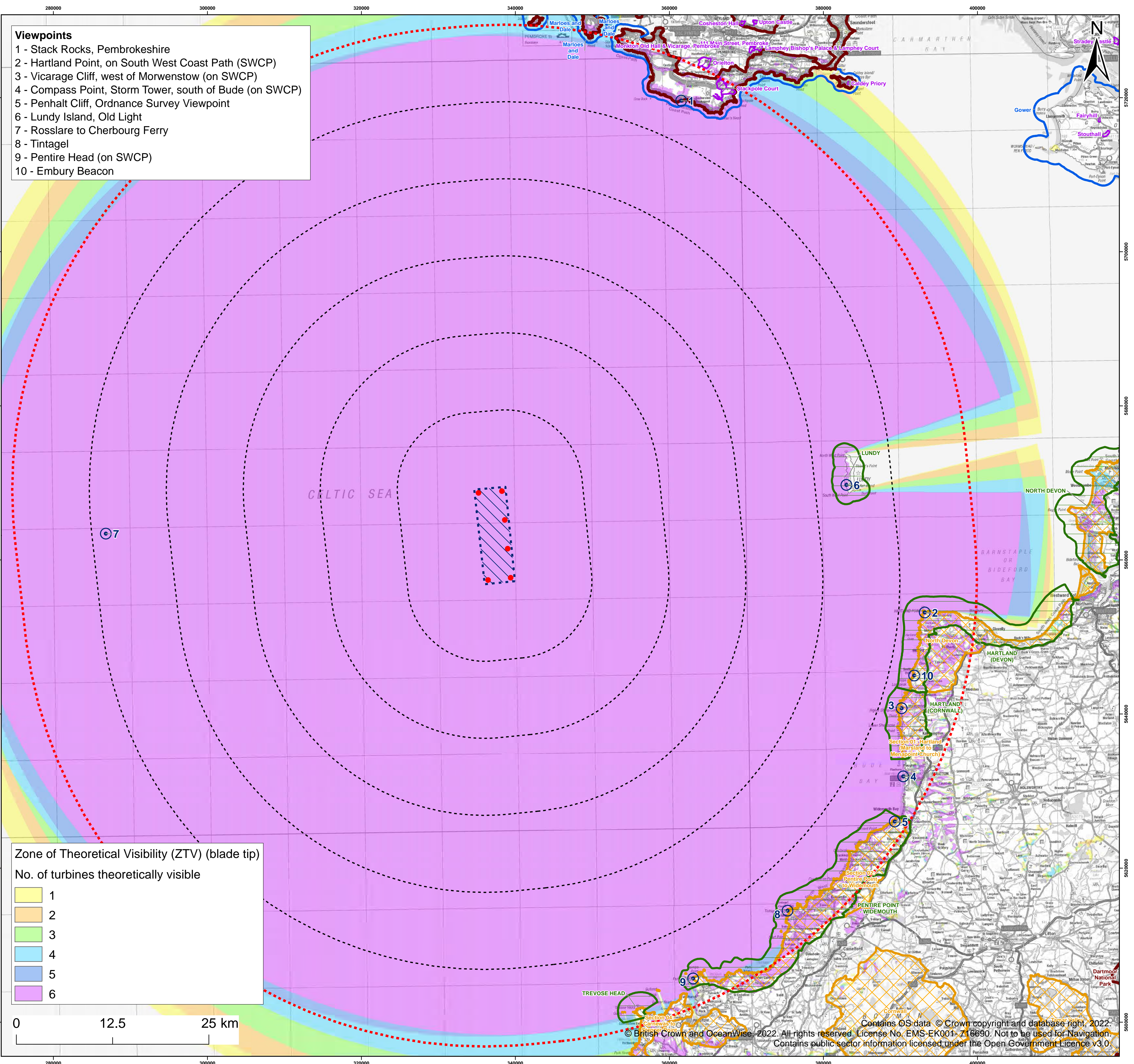
<b>Client:</b>	<b>Project:</b>
Offshore Wind Ltd.	White Cross Offshore Windfarm

**Title:**  
Long Distance Recreational Routes and Viewpoint Locations with Hub Height ZTV

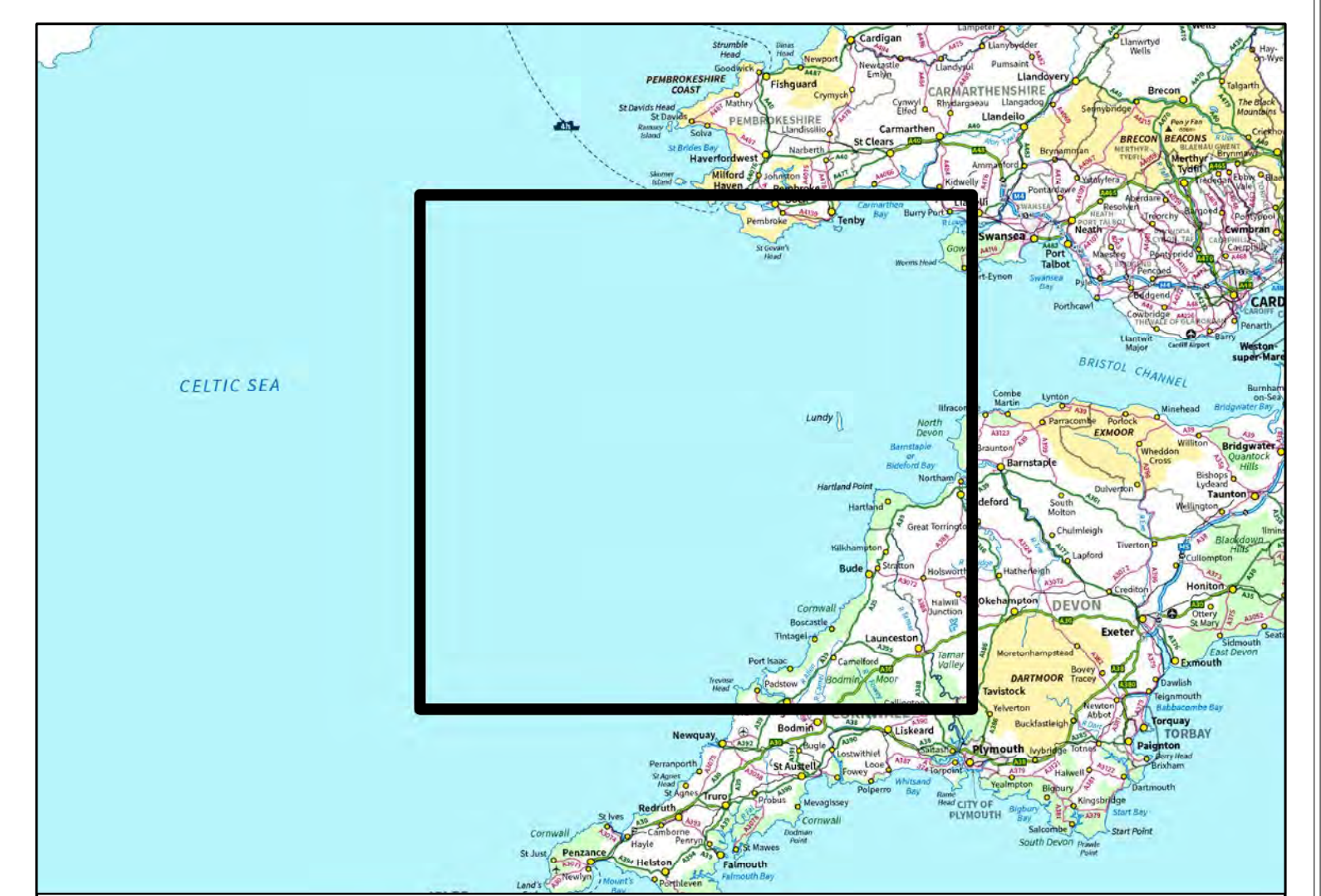
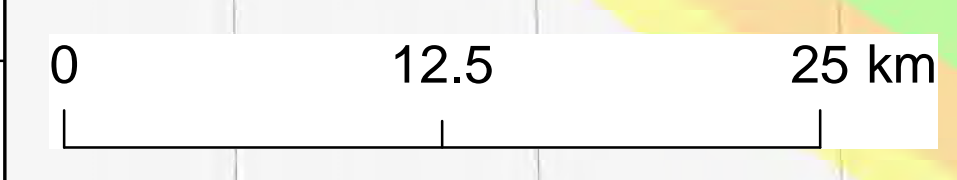
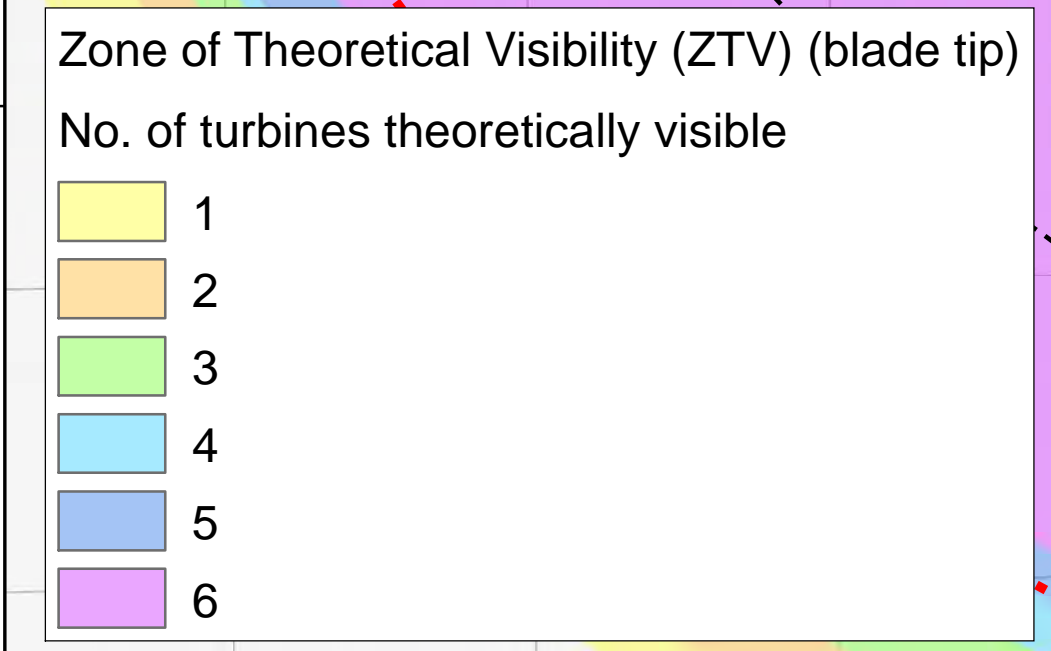
<b>Figure:</b> 19.18	<b>Drawing No:</b> PC2978-OPN-ZZ-XX-DR-Z_0509				
<b>Revision:</b>	<b>Date:</b>	<b>Drawn:</b>	<b>Checked:</b>	<b>Size:</b>	<b>Scale:</b>
P01	23/02/2023	JM	CW	A1	1:250,000

**Co-ordinate system:** WGS 1984 UTM Zone 30N





- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon



**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- National Park
- Area of Outstanding Natural Beauty
- Historic Parks and Gardens (Wales)
- Heritage Coasts (England)
- Heritage Coasts (Wales)

Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

<b>Client:</b>	<b>Project:</b>
Offshore Wind Ltd.	White Cross Offshore Windfarm

**Title:**  
Landscape Designations and Defined Areas and Viewpoint Locations with Blade Tip ZTV

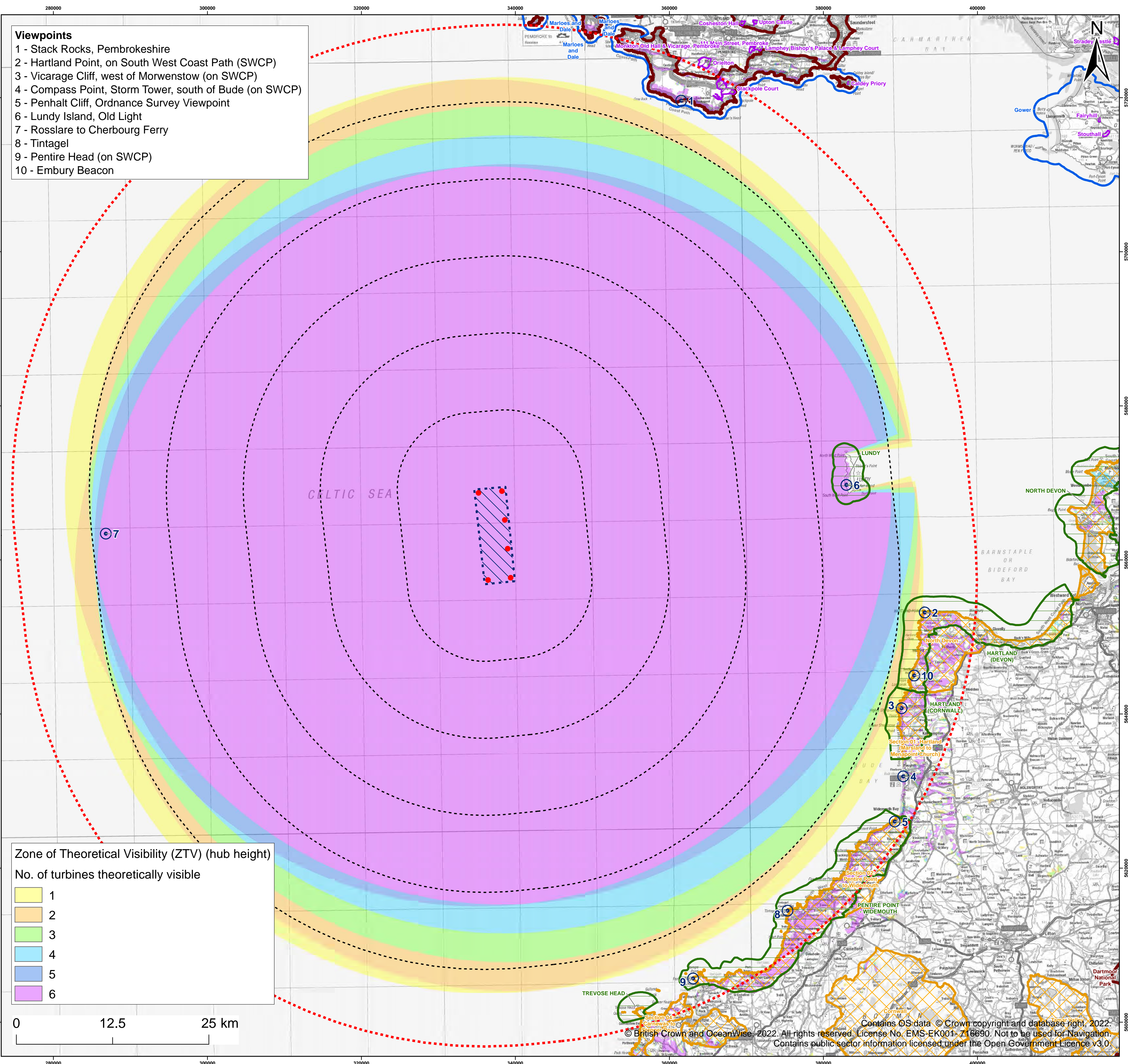
<b>Figure:</b> 19.19	<b>Drawing No:</b> PC2978-OPN-ZZ-XX-DR-Z_0510				
<b>Revision:</b>	<b>Date:</b>	<b>Drawn:</b>	<b>Checked:</b>	<b>Size:</b>	<b>Scale:</b>
P01	24/02/2023	JM	CW	A1	1:250,000

Co-ordinate system: WGS 1984 UTM Zone 30N

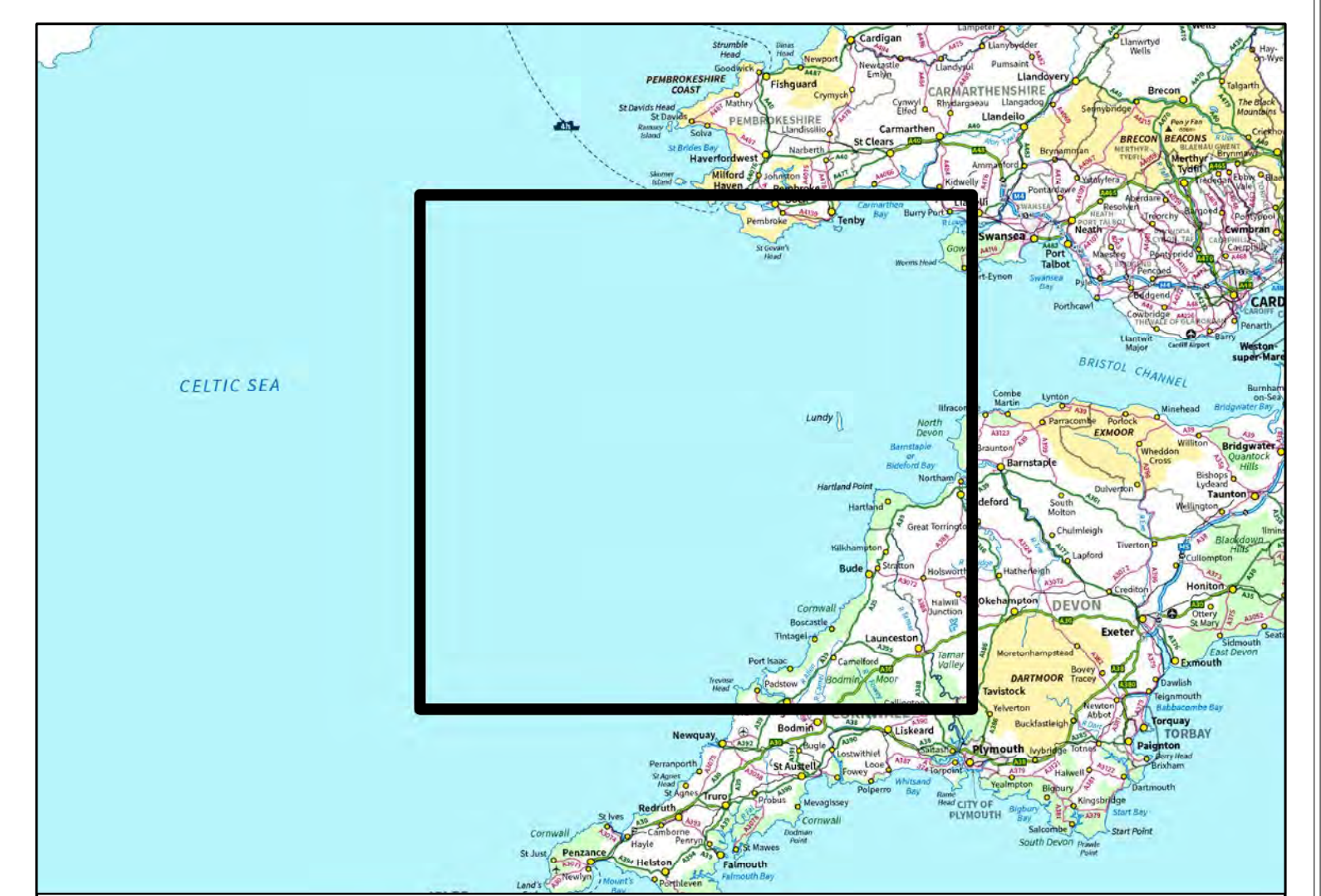
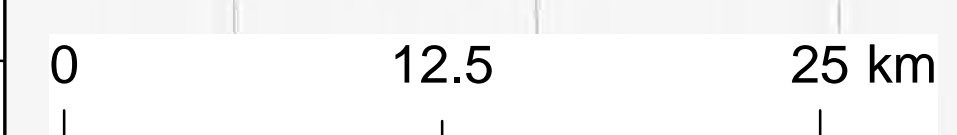
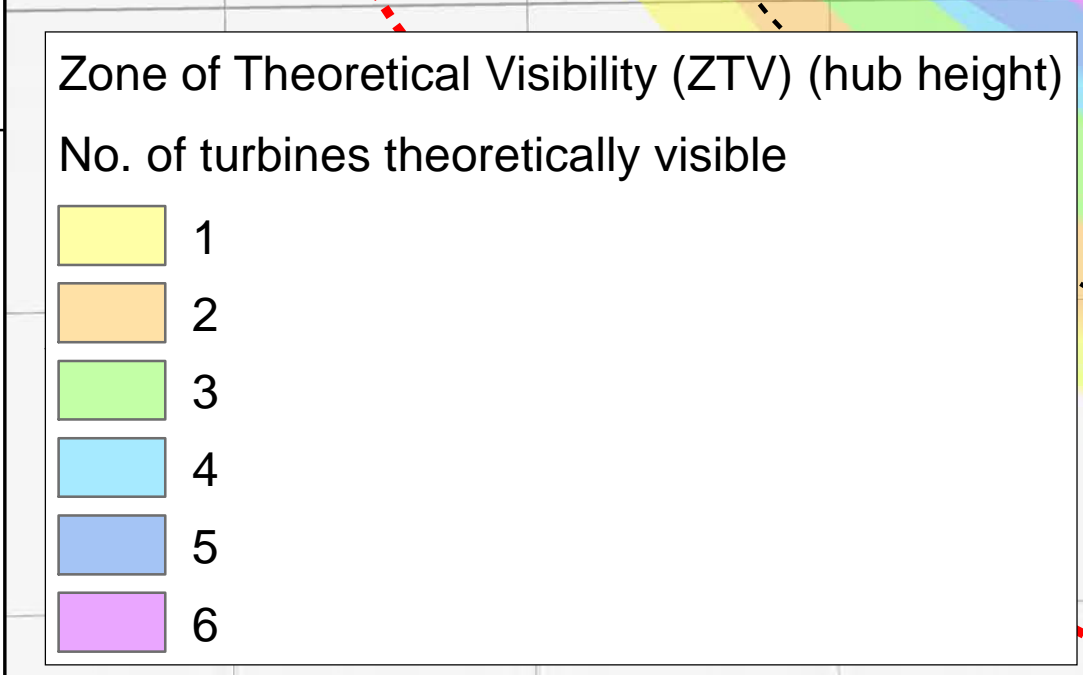
WHITE CROSS

Royal HaskoningDHV  
Enhancing Society Together





- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon



**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- National Park
- Area of Outstanding Natural Beauty
- Historic Parks and Gardens (Wales)
- Heritage Coasts (England)
- Heritage Coasts (Wales)

Hub height:	153m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

<b>Client:</b>	<b>Project:</b>
Offshore Wind Ltd.	White Cross Offshore Windfarm

**Title:**  
Landscape Designations & Defined Areas and Viewpoint Locations with Hub Height ZTV

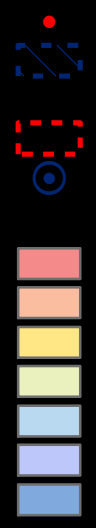
<b>Figure:</b> 19.20	<b>Drawing No:</b> PC2978-OPN-ZZ-XX-DR-Z_0511				
<b>Revision:</b>	<b>Date:</b>	<b>Drawn:</b>	<b>Checked:</b>	<b>Size:</b>	<b>Scale:</b>
P01	24/02/2023	JM	CW	A1	1:250,000

Co-ordinate system: WGS 1984 UTM Zone 30N

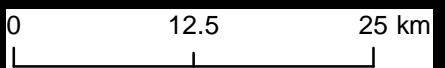
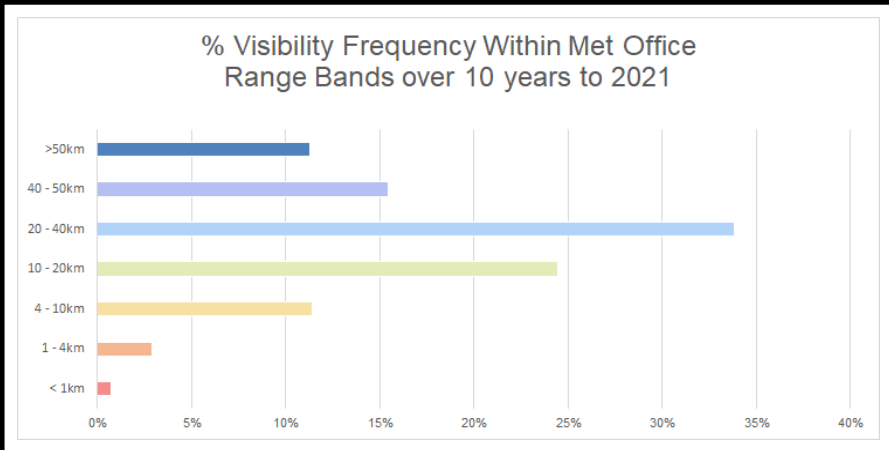
WHITE CROSS  
Royal HaskoningDHV  
Enhancing Society Together



- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon



Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included



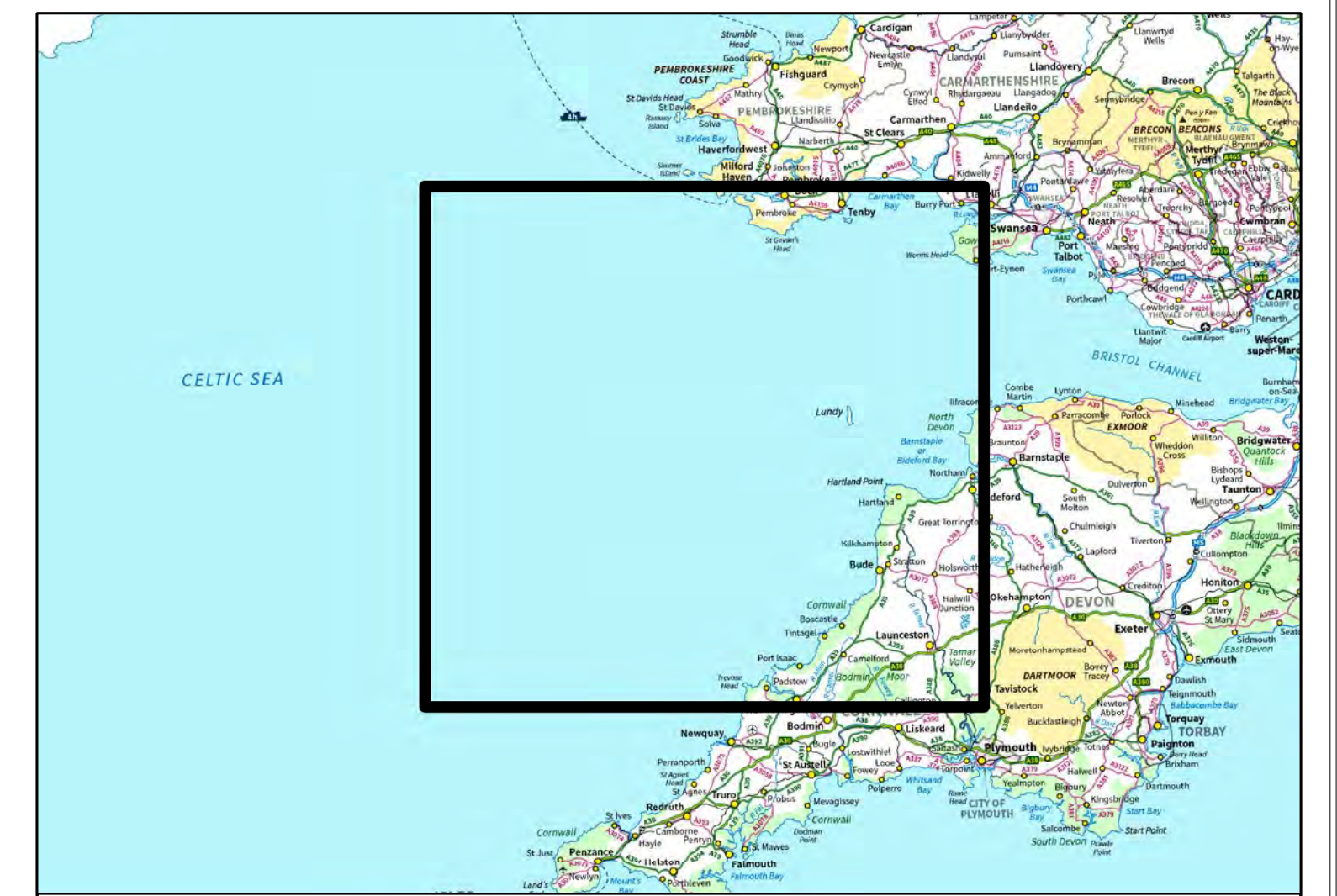
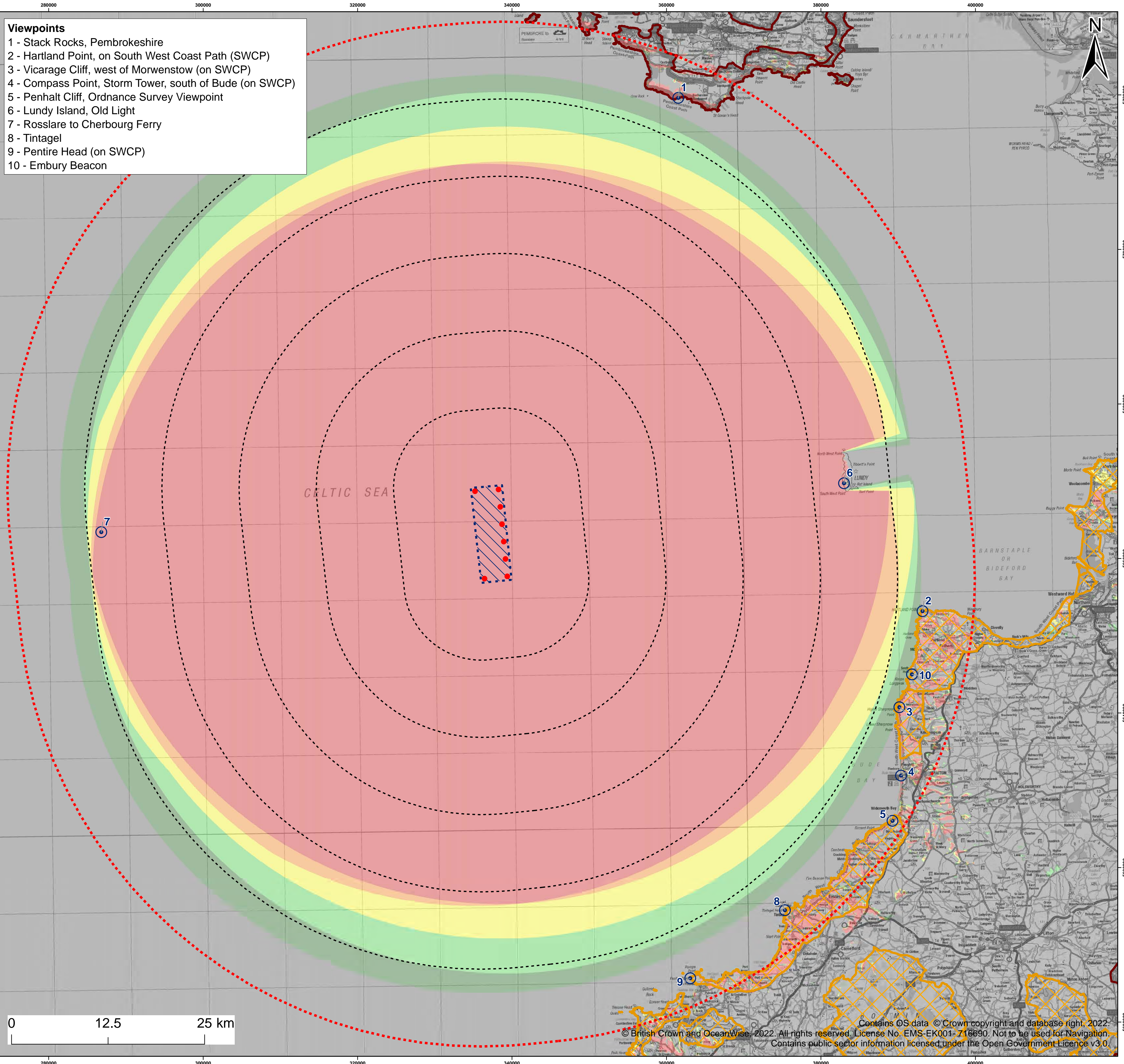


0 12.5 25 km





- Viewpoints**
- 1 - Stack Rocks, Pembrokeshire
  - 2 - Hartland Point, on South West Coast Path (SWCP)
  - 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
  - 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
  - 5 - Penhalt Cliff, Ordnance Survey Viewpoint
  - 6 - Lundy Island, Old Light
  - 7 - Rosslare to Cherbourg Ferry
  - 8 - Tintagel
  - 9 - Pentire Head (on SWCP)
  - 10 - Embury Beacon



**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- National Park Authority Boundary
- Area of Outstanding Natural Beauty

Hub height ZTV of Turbine assumed to be lit with aviation lights

No. of aviation lights theoretically visible

1 - 2
3 - 4
5 - 6
7
8

Hub height: 153m above MSL	Observer height: 2m
DTM: OS Terrain 5	Surface features: Excluded
DTM resolution: 10m	Earth curvature: Included

<b>Client:</b> Offshore Wind Ltd.	<b>Project:</b> White Cross Offshore Windfarm
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**Title:**  
Hub Height Aviation Lighting ZTV for Realistic Maximum Number of WTGs Worst Case Scenario

Figure: 19.23      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0514

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A1	1:250,000

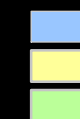
Co-ordinate system: WGS 1984 UTM Zone 30N





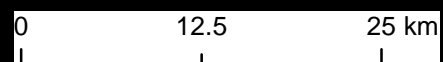
**Viewpoints**

- 1 - Stack Rocks, Pembrokeshire
- 2 - Hartland Point, on South West Coast Path (SWCP)
- 3 - Vicarage Cliff, west of Morwenstow (on SWCP)
- 4 - Compass Point, Storm Tower, south of Bude (on SWCP)
- 5 - Penhalt Cliff, Ordnance Survey Viewpoint
- 6 - Lundy Island, Old Light
- 7 - Rosslare to Cherbourg Ferry
- 8 - Tintagel
- 9 - Pentire Head (on SWCP)
- 10 - Embury Beacon

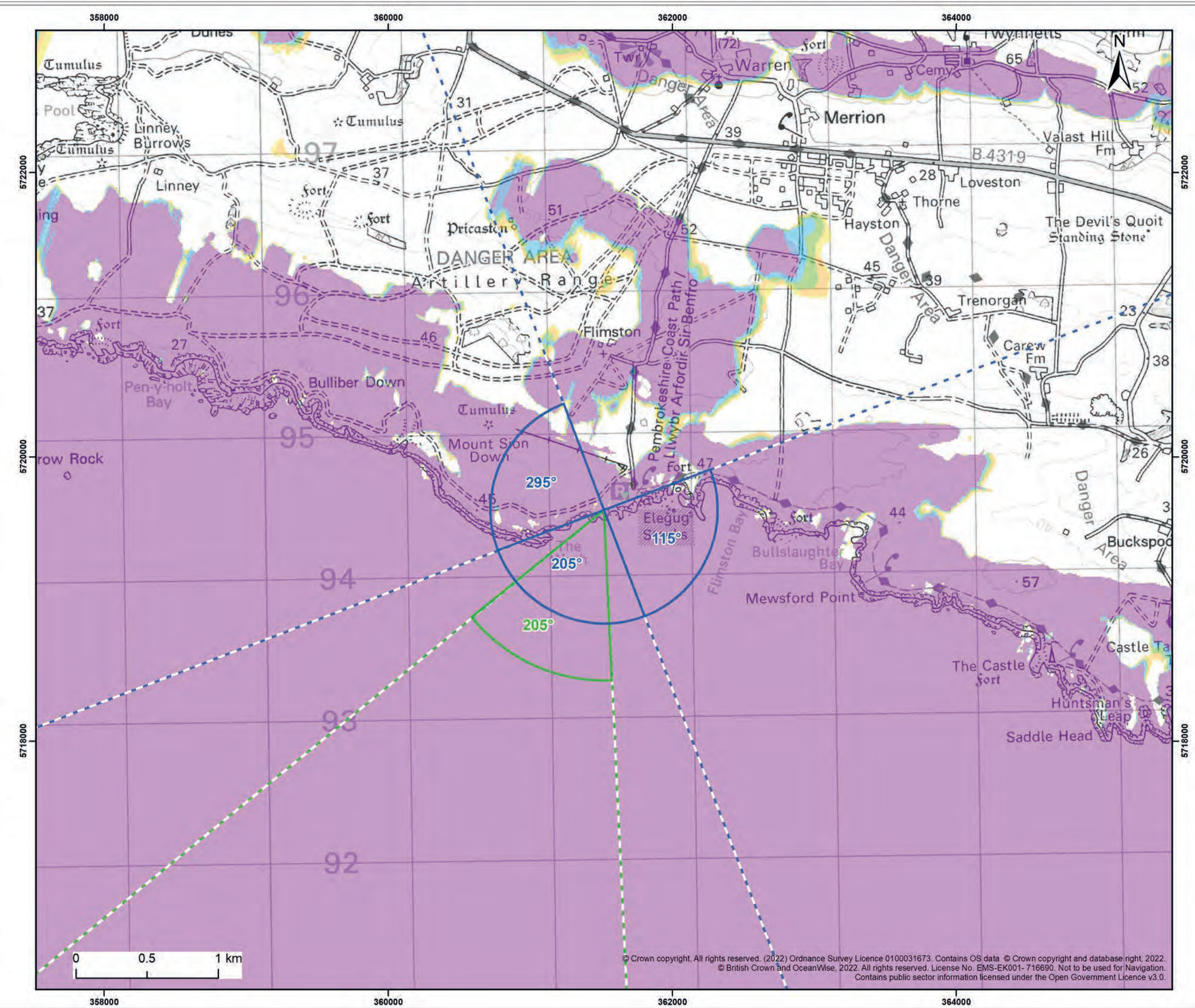
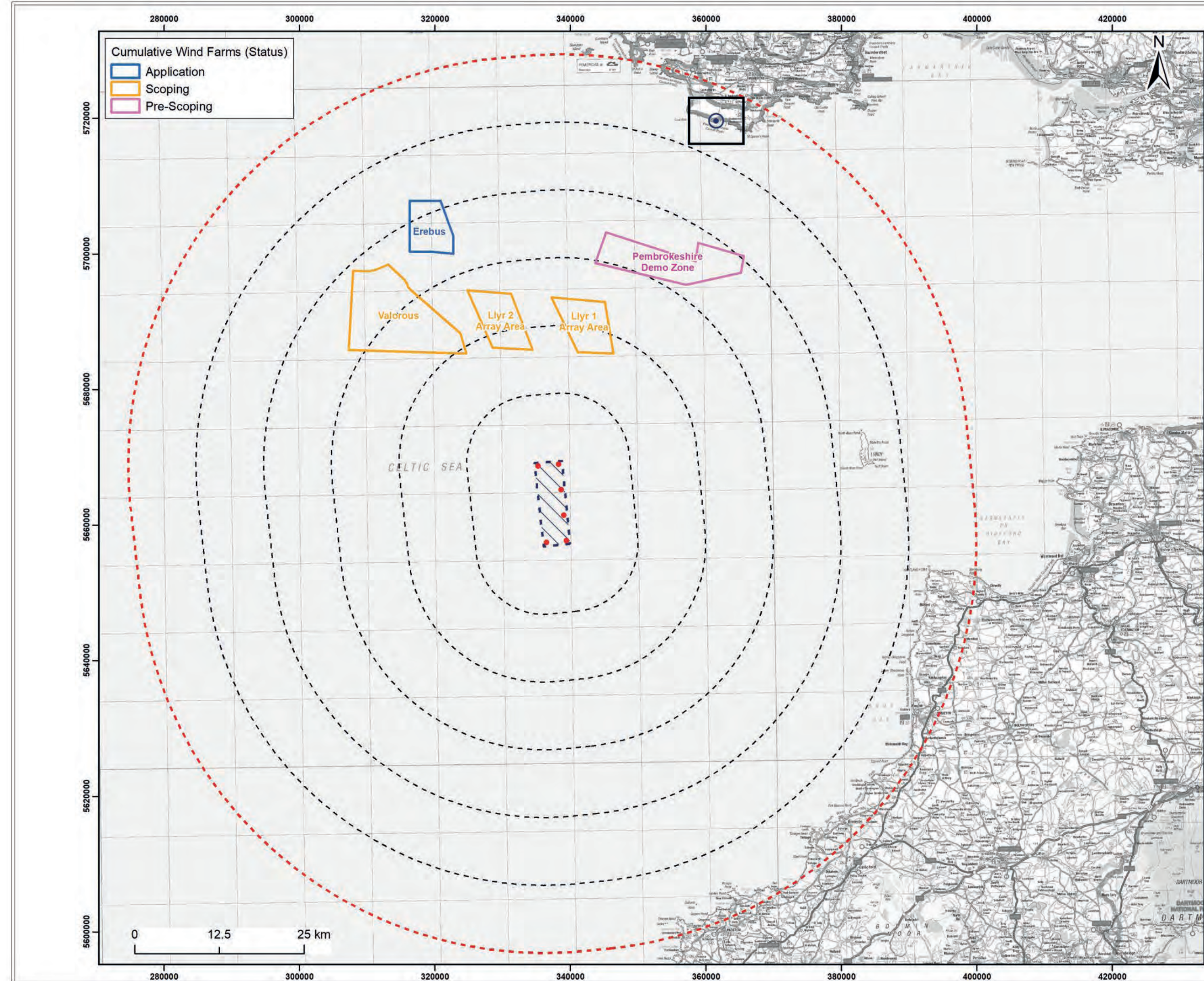


Erebus Blade tip: 270m above HAT

Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included







**Cumulative Wind Farms (Status)**

- Application
- Scoping
- Pre-Scoping

**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- ⊕ Viewpoint Location
- Panorama with Cumulative Wireline (90°HFOV)
- Photomontage and / or Wireline (53.5°HFOV)
- Zone of theoretical visibility (blade tip)

**No. of turbines theoretically visible**

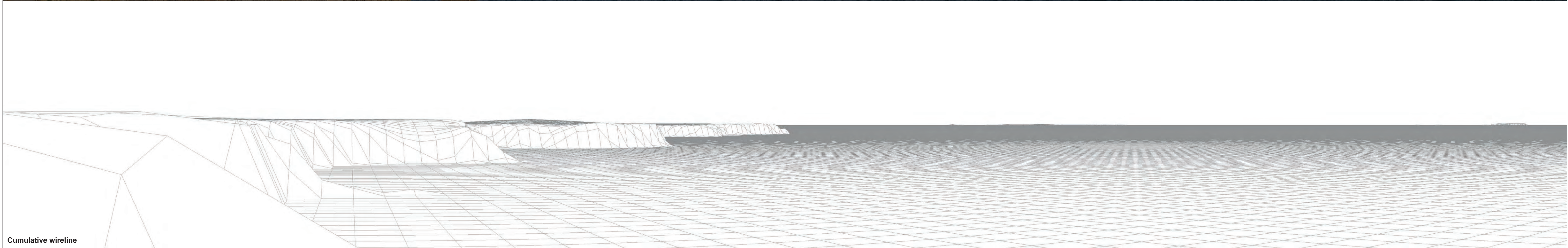
- 1
- 2
- 3
- 4
- 5
- 6

Blade tip: 284m above MSL      Observer height: 2m  
DTM: OS Terrain 5      Surface features: Excluded  
DTM resolution: 10m      Earth curvature: included

Client: Offshore Wind Ltd.	Project: White Cross Offshore Windfarm				
Title: Viewpoint 1: Stack Rocks, Pembrokeshire					
Figure: 19_25a	Drawing No: PC2978-OPN-ZZ-XX-DR-Z_0516				
Revision: P01	Date: 23/02/2023	Drawn: JM	Checked: CW	Size: A3	Scale: 1:25,000
Co-ordinate system: WGS 1984 UTM Zone 30N					

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<b>OS reference:</b> 192318 E 194462 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D Mark II
<b>Eye level:</b> 47.6 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 115°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 55.79 km		<b>Date and time:</b> 21/09/2022, 18:27:38

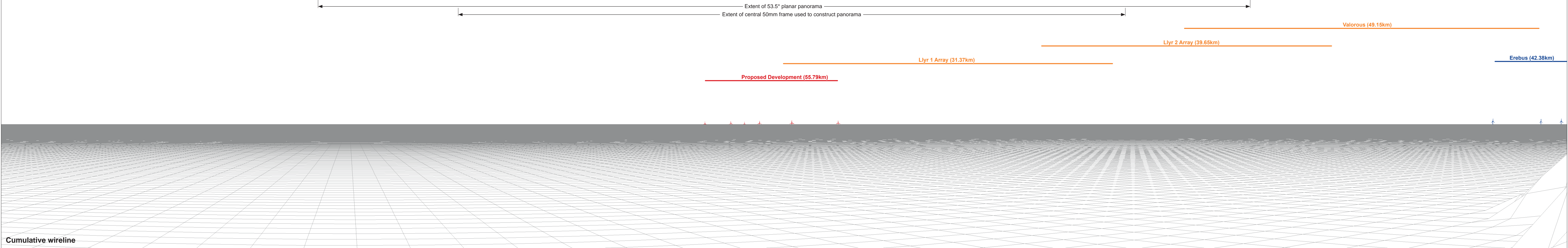
**Figure: 19:25b**  
**Stack Rocks, Pembrokeshire**





Baseline photograph

This image provides landscape context only



Cumulative wireline

<b>OS reference:</b> 192318 E 194462 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 47.6 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 205°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 55.79 km		<b>Date and time:</b> 21/09/2022, 18:27:38

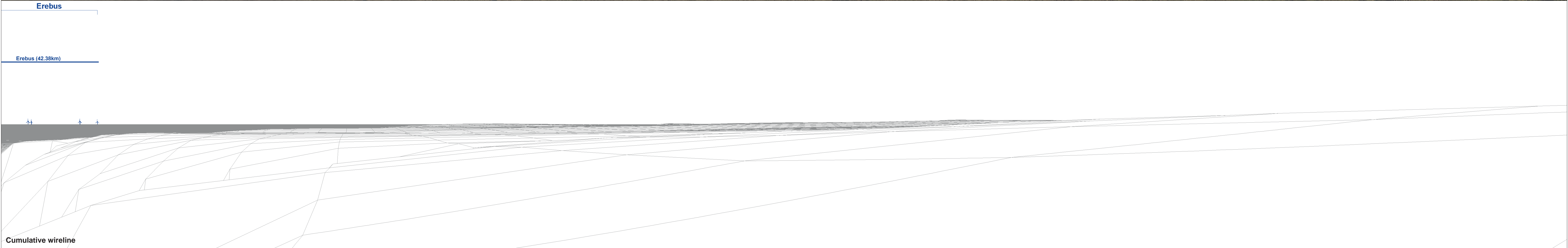
**Figure: 19:25c**  
**Stack Rocks, Pembrokeshire**





Baseline photograph

This image provides landscape and visual context only

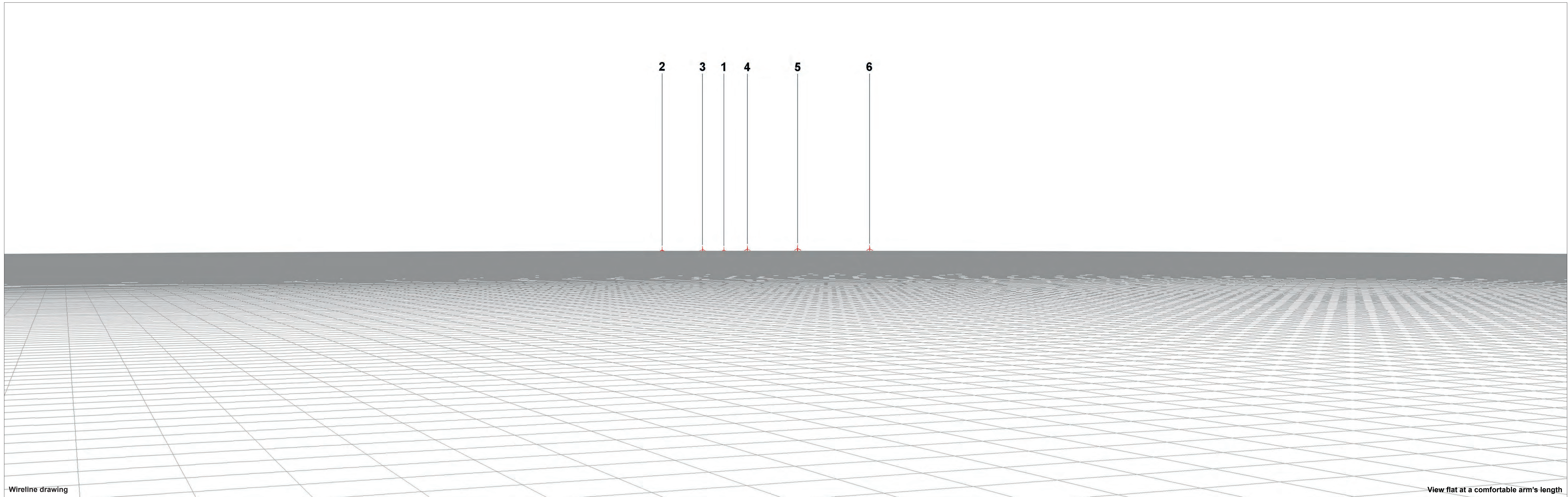


Cumulative wireline

<b>OS reference:</b>	192318 E 194462 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	47.6 m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	295°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	55.79 km			<b>Date and time:</b>	21/09/2022, 18:27:38

**Figure: 19:25d**  
Stack Rocks, Pembrokeshire





Wireline drawing

View flat at a comfortable arm's length

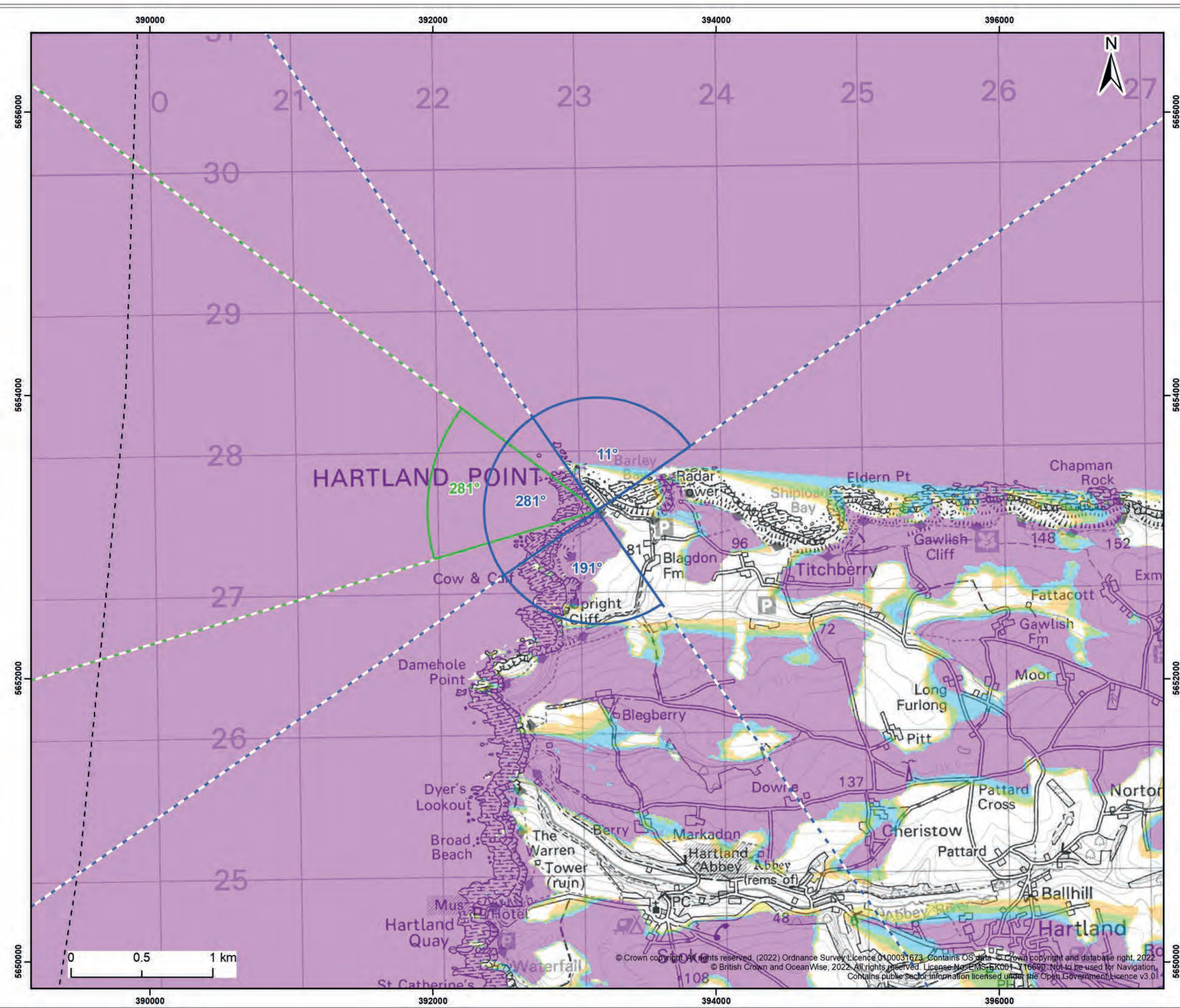
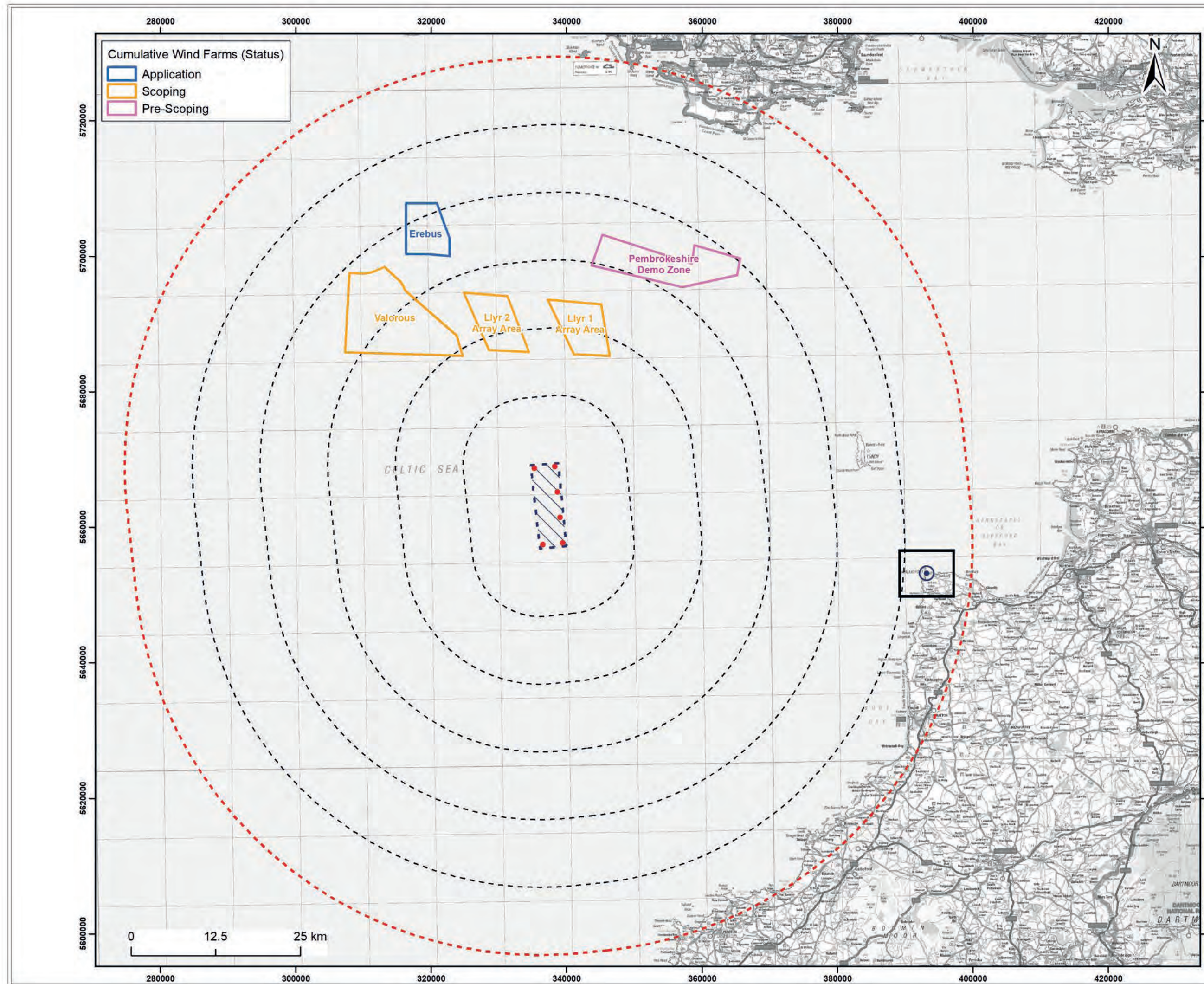
OS reference: 192318 E 194462 N  
Eye level: 47.6 m AOD  
Direction of view: 205°  
Nearest turbine: 55.79 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: 21/09/2022, 18:27:38

Figure: 19:25e  
Stack Rocks, Pembrokeshire





**Legend:**

- Proposed Turbine (Red dot)
- Windfarm Site (Dashed line)
- 10km Radii (Dotted line)
- 60km Study Area (Dashed red line)
- Viewpoint Location (Blue circle with crosshair)
- Panorama with Cumulative Wireline (90°HFOV) (Blue outline)
- Photomontage and / or Wireline (53.5°HFOV) (Green outline)
- Zone of theoretical visibility (blade tip) (Green outline)

**No. of turbines theoretically visible**

1
2
3
4
5
6

Blade tip: 284m above MSL  
Observer height: 2m  
DTM: OS Terrain 5  
Surface features: Excluded  
DTM resolution: 10m  
Earth curvature: Included

Client: Offshore Wind Ltd.      Project: White Cross Offshore Windfarm

Title: Viewpoint 2: Hartland Point, on South West Coast Path (SWCP)

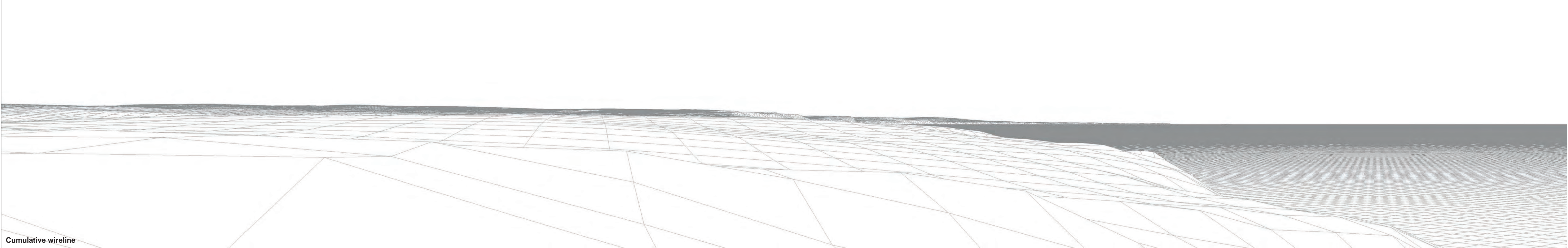
Figure: 19.26a      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0517

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

**WHITE CROSS**      **Royal HaskoningDHV**  
Enhancing Society Together





<b>OS reference:</b> 223124 E 127578 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D Mark II
<b>Eye level:</b> 91.22 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 191°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 53.98 km		<b>Date and time:</b> 19/09/2022, 08:30:25

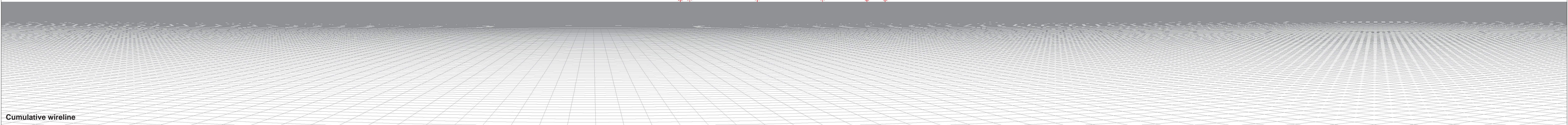
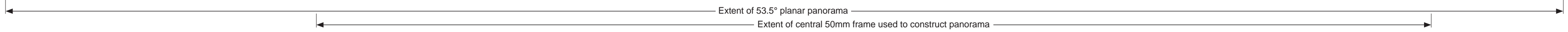
**Figure: 19:26b**  
Hartland Point, on South West Coast Path (SWCP)





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b>	223124 E 127578 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	91.22 m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	281°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	53.98 km			<b>Date and time:</b>	19/09/2022, 08:30:25

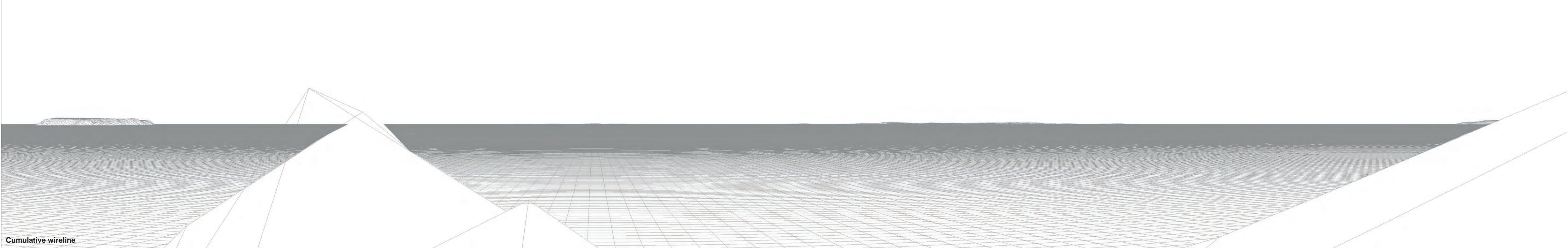
**Figure: 19:26c**  
Hartland Point, on South West Coast Path (SWCP)





Baseline photograph

This image provides landscape and visual context only

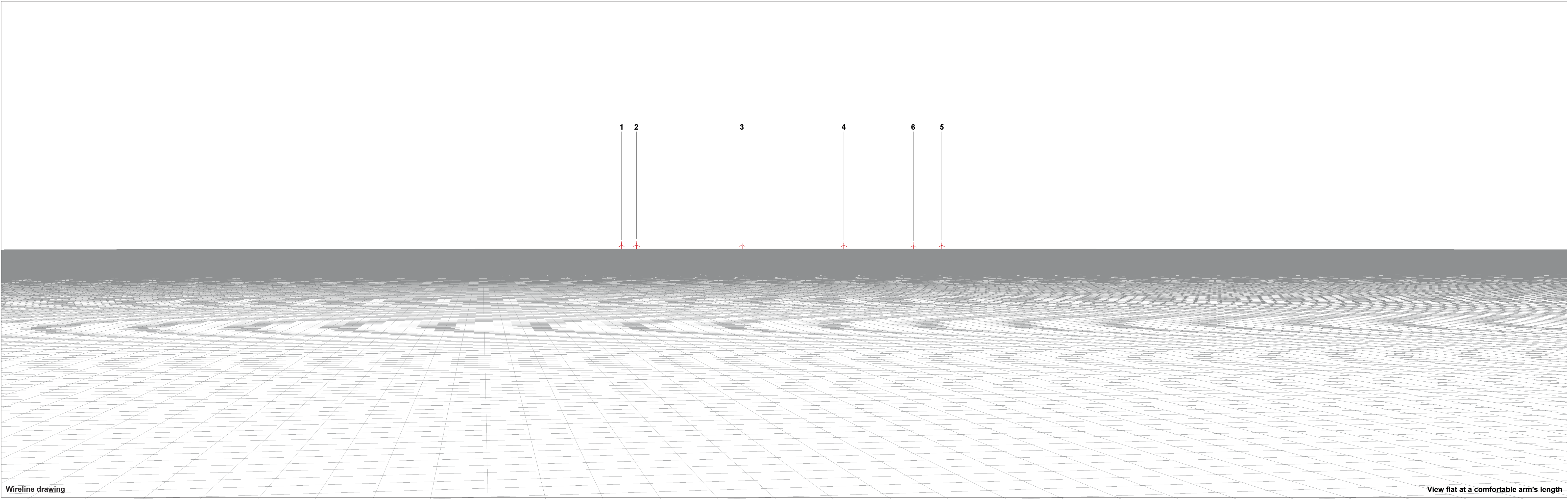


Cumulative wireline

<b>OS reference:</b> 223124 E 127578 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D	
<b>Eye level:</b> 91.22 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM	
<b>Direction of view:</b> 11°		<b>Camera height:</b> 1.5 m AGL	
<b>Nearest turbine:</b> 53.98 km		<b>Date and time:</b> 19/09/2022, 08:30:25	

**Figure: 19:26d**  
Hartland Point, on South West Coast Path (SWCP)





Wireline drawing

View flat at a comfortable arm's length

<b>OS reference:</b> 223124 E 127578 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 91.22 m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 281°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 53.98 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 19/09/2022, 08:30:25

**Figure: 19:26e**  
Hartland Point, on South West Coast Path (SWCP)



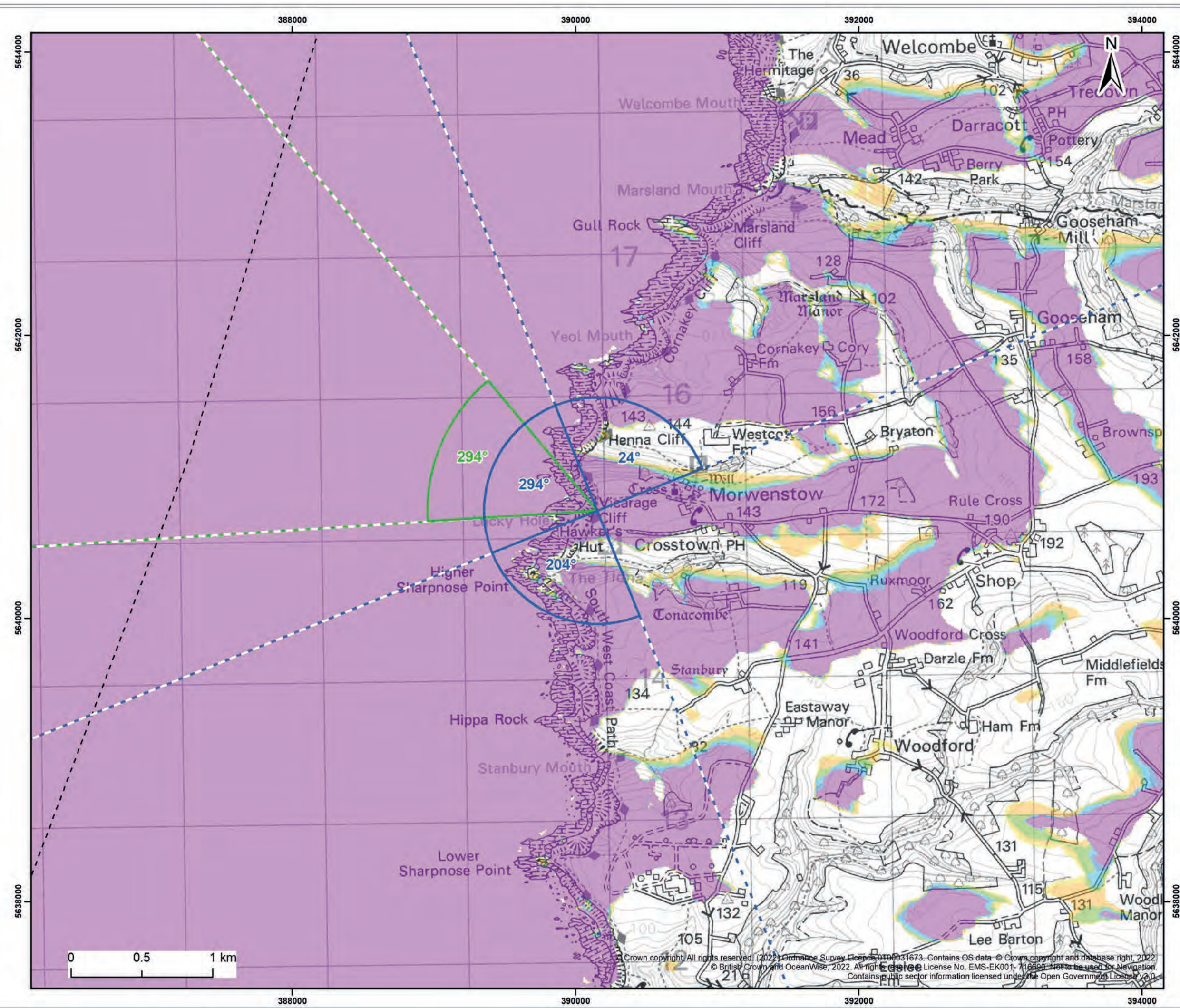
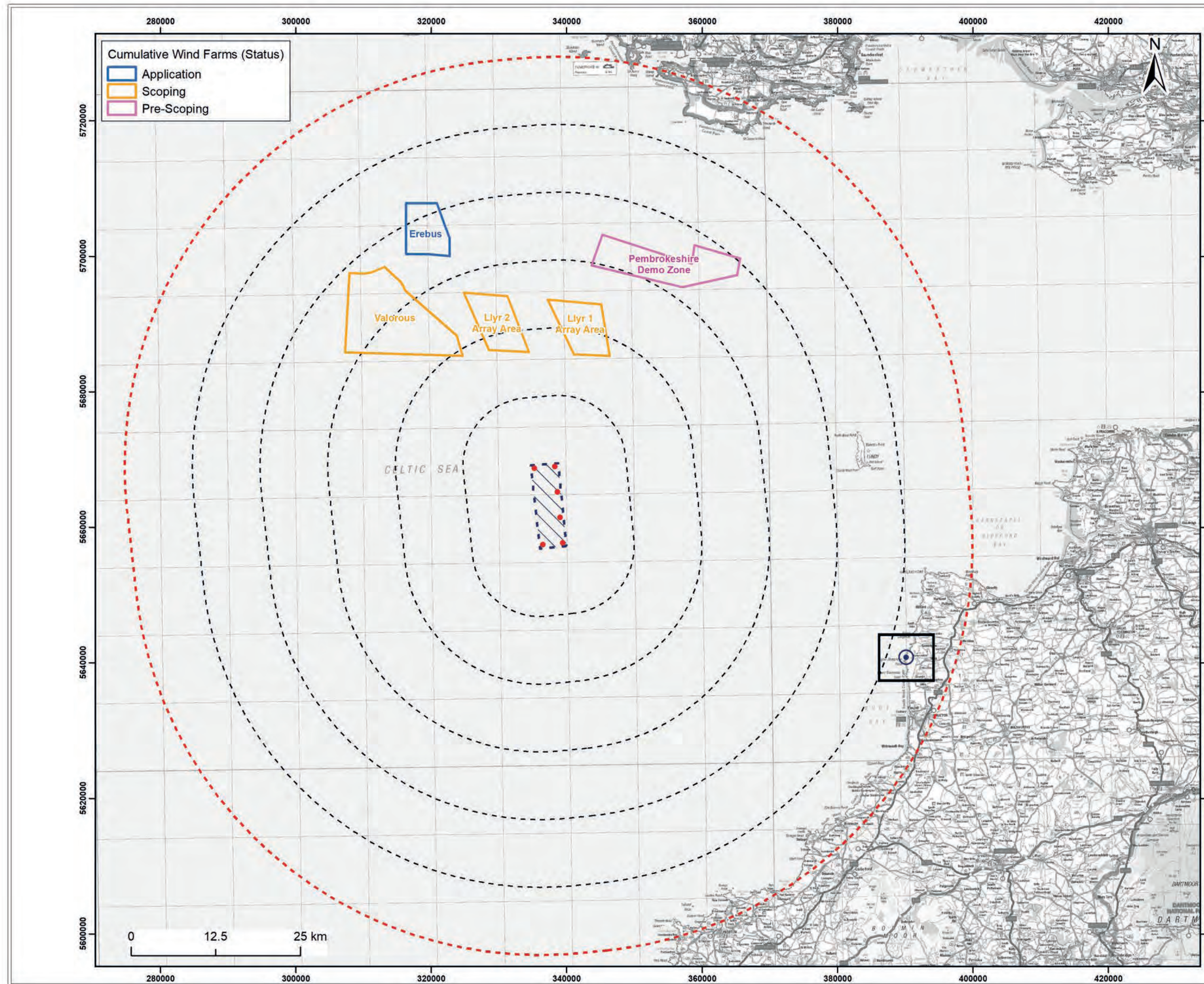


Photomontage

View flat at a comfortable arm's length

<b>OS reference:</b> 223124 E 127578 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D	
<b>Eye level:</b> 91.22 m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM	
<b>Direction of view:</b> 281°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL	
<b>Nearest turbine:</b> 53.98 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 19/09/2022, 08:30:25	<b>Figure: 19:26f</b> <b>Hartland Point, on South West Coast Path (SWCP)</b>





Client: Offshore Wind Ltd. | Project: White Cross Offshore Windfarm

Title: Viewpoint 3: Vicarage Cliff, west of Morwenstow (on SWCP)

Figure: 19.27a | Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0518

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

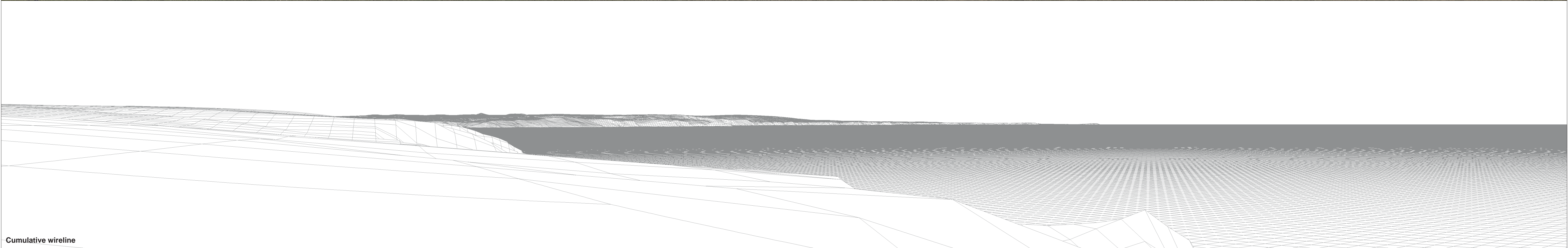
WHITE CROSS | Royal HaskoningDHV  
Enhancing Society Together





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b> 219948 E 115192 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D Mark II
<b>Eye level:</b> 119.31 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 204°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 53.53 km		<b>Date and time:</b> 19/09/2022, 09:59:08

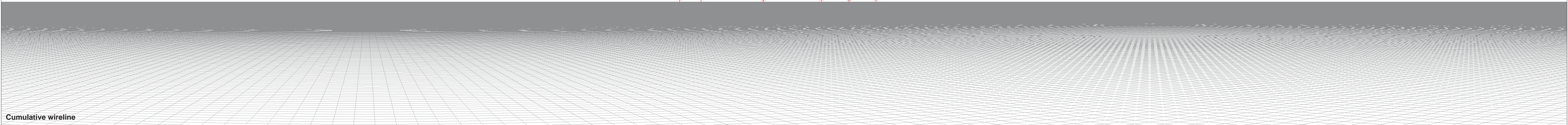
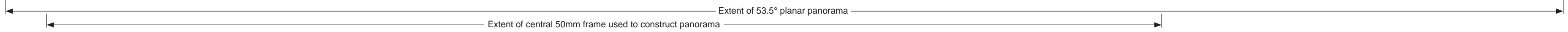
**Figure: 19:27b**  
Vicarage Cliff, west of Morwenstow (on SWCP)





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b>	223124 E 127578 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	119.31 m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	294°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	53.53 km			<b>Date and time:</b>	19/09/2022, 09:59:08

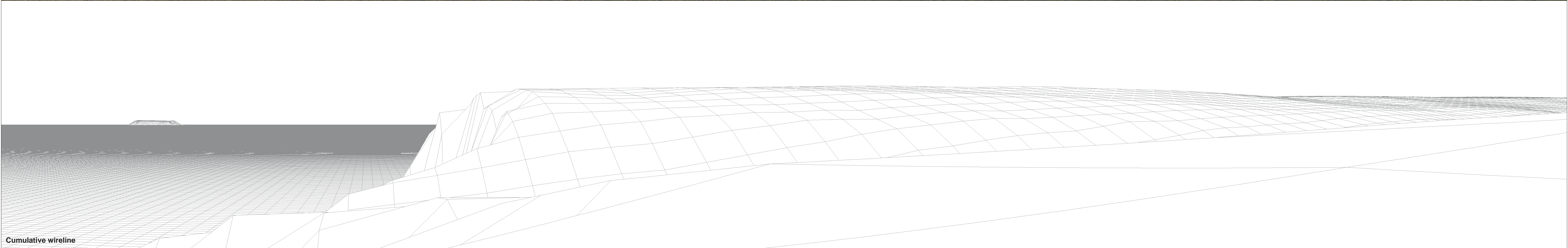
Figure: 19:27c  
Vicarage Cliff, west of Morwenstow (on SWCP)





Baseline photograph

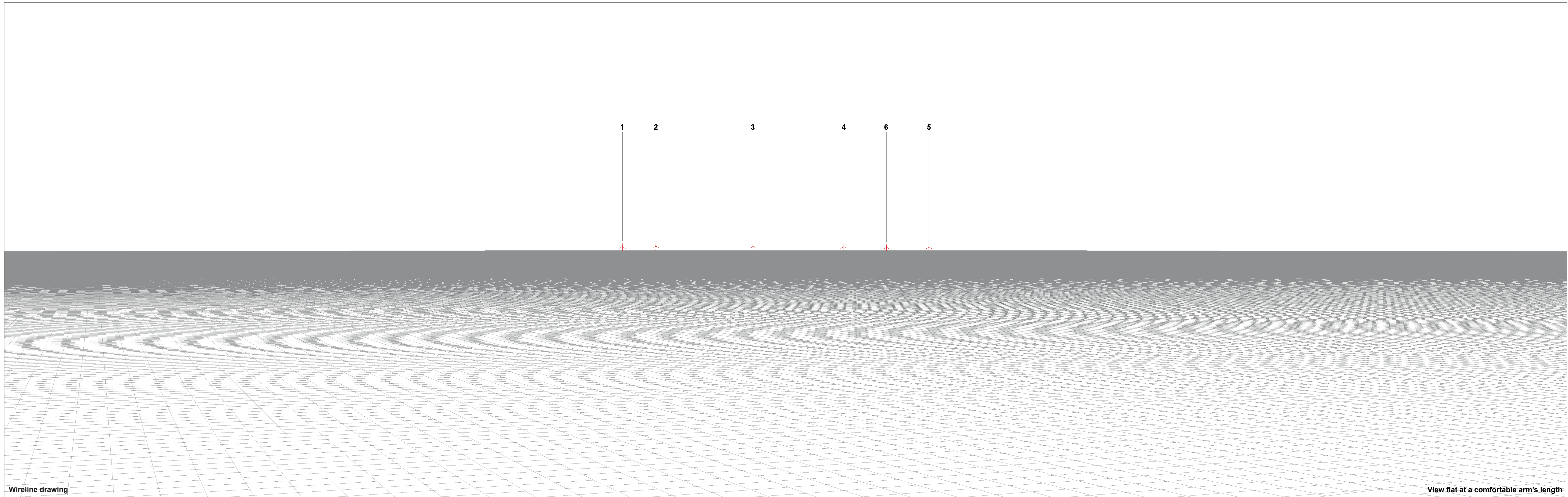
This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b>	223124 E 127578 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D	<b>Figure: 19:27d</b> Vicarage Cliff, west of Morwenstow (on SWCP)
<b>Eye level:</b>	119.31 m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM	
<b>Direction of view:</b>	24°			<b>Camera height:</b>	1.5 m AGL	
<b>Nearest turbine:</b>	53.53 km			<b>Date and time:</b>	19/09/2022, 09:59:08	





Wireline drawing

View flat at a comfortable arm's length

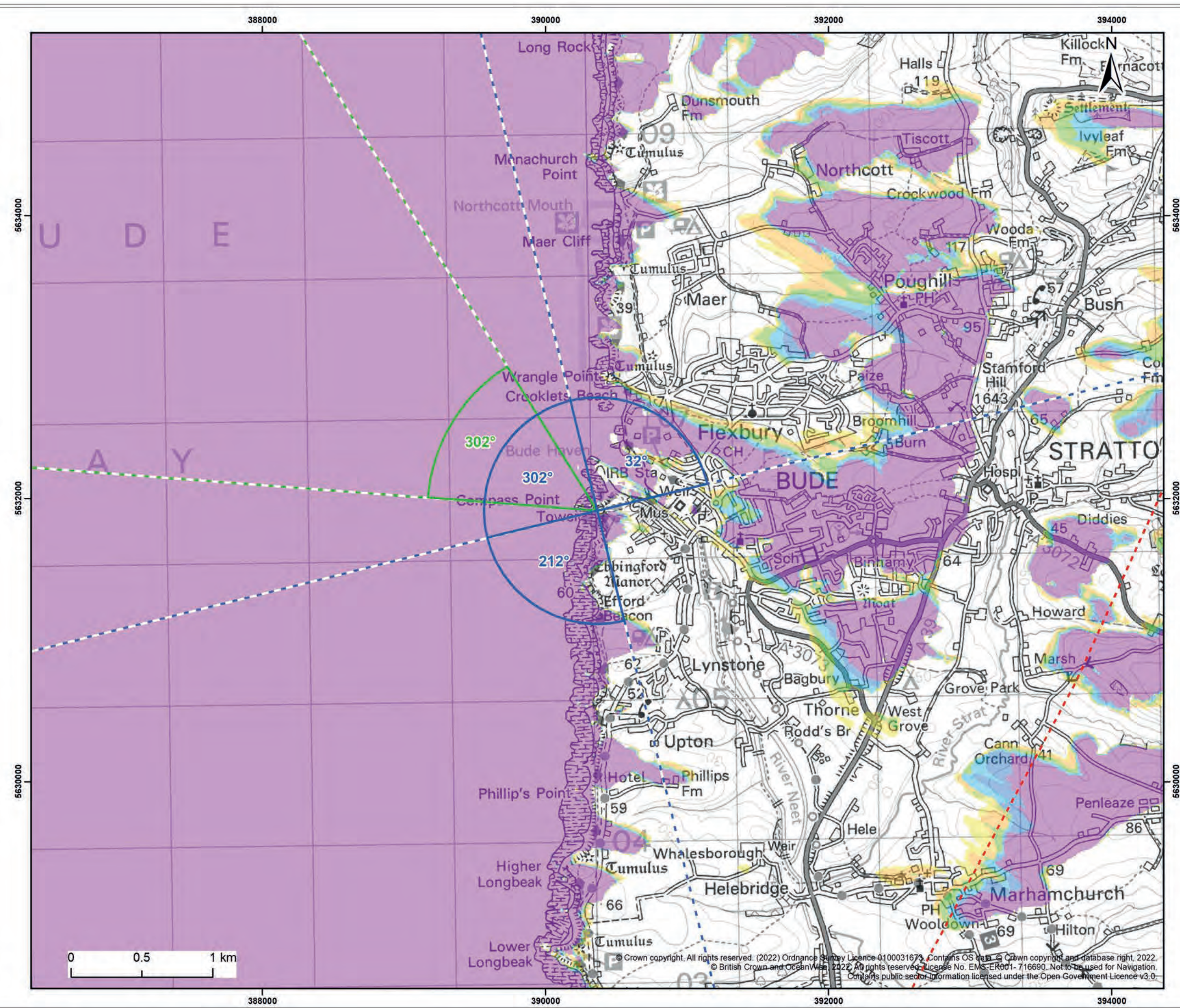
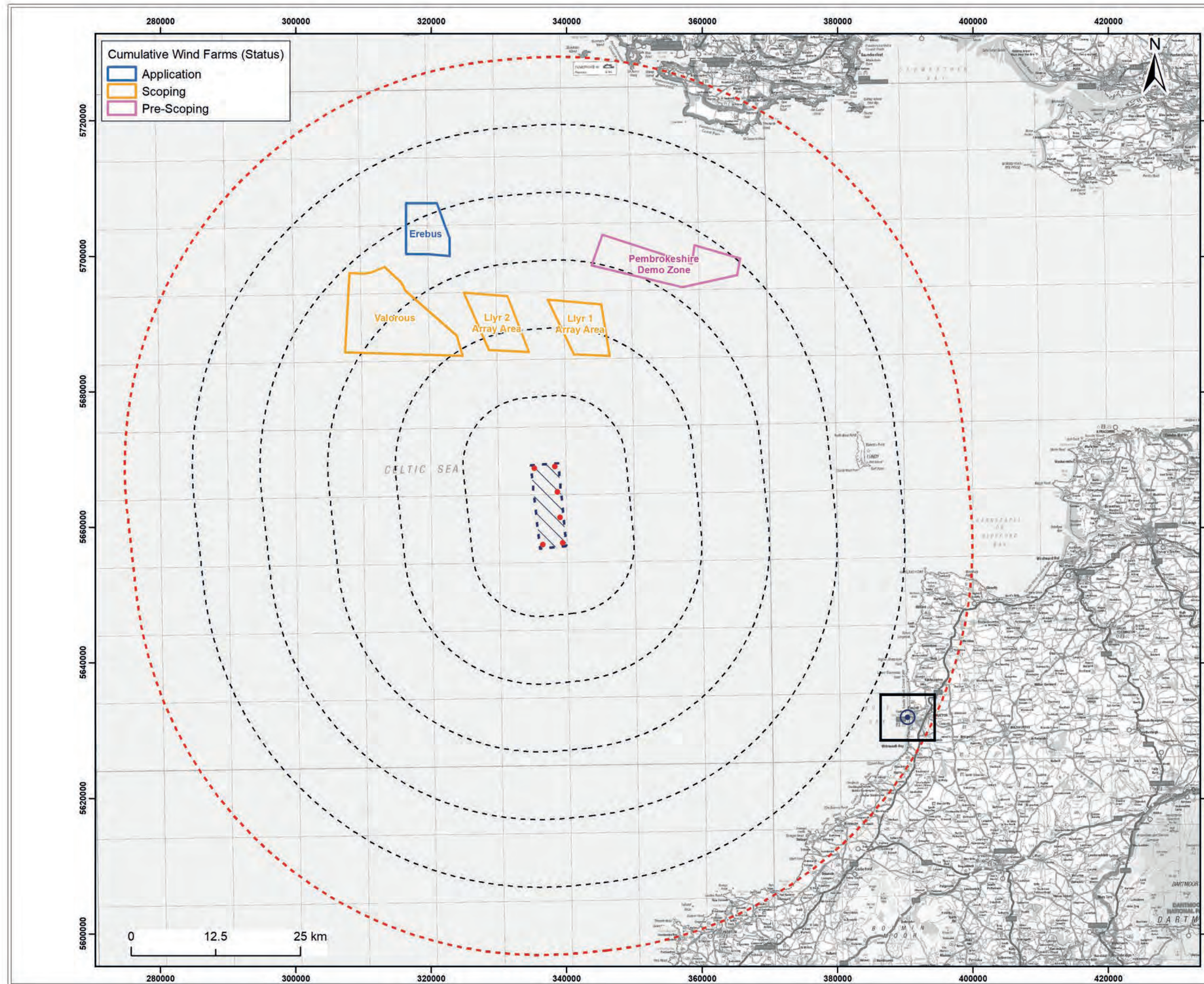
OS reference: 223124 E 127578 N  
Eye level: 119.31 m AOD  
Direction of view: 294°  
Nearest turbine: 53.53 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: 19/09/2022, 09:59:08

Figure: 19:27e  
Vicarage Cliff, west of Morwenstow (on SWCP)





**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- Panorama with Cumulative Wireline (90°HFOV)
- Photomontage and / or Wireline (53.5°HFOV)
- Zone of theoretical visibility (blade tip)
- No. of turbines theoretically visible

1
2
3
4
5
6

Blade tip: 284m above MSL      Observer height: 2m  
 DTM: OS Terrain 5      Surface features: Excluded  
 DTM resolution: 10m      Earth curvature: Included

Client: Offshore Wind Ltd.      Project: White Cross Offshore Windfarm

Title: Viewpoint 4: Compass Point, Storm Tower, south of Bude (on SWCP)

Figure: 19.28a      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0519

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

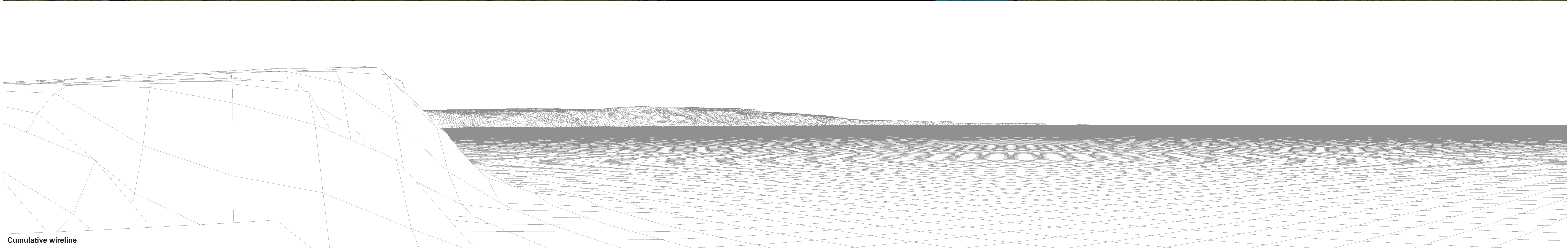
**WHITE CROSS**      **Royal HaskoningDHV**  
 Enhancing Society Together





Baseline photograph

This image provides landscape and visual context only

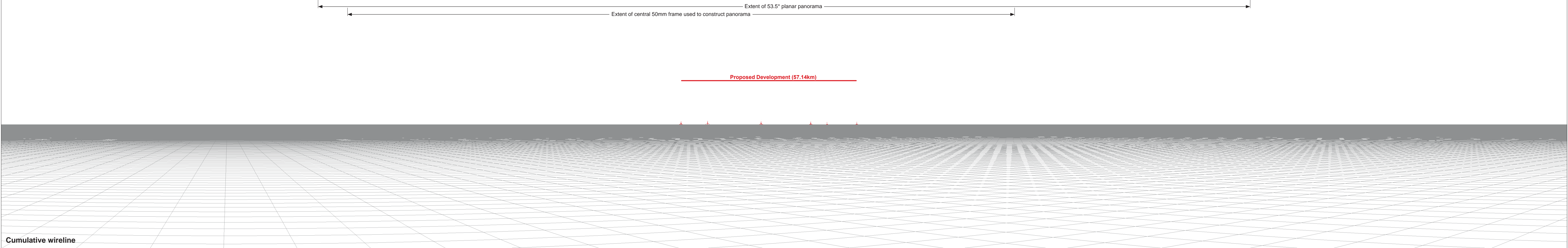


Cumulative wireline

<b>OS reference:</b> 220041 E 106341 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D Mark II
<b>Eye level:</b> 34.44 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 212°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 57.14 km		<b>Date and time:</b> 19/09/2022, 11:42:35

**Figure: 19:28b**  
Compass Point, Storm Tower, south of Bude (on SWCP)





<b>OS reference:</b> 220041 E 106341 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 34.44 m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 302°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 57.14 km		<b>Date and time:</b> 19/09/2022, 11:42:35

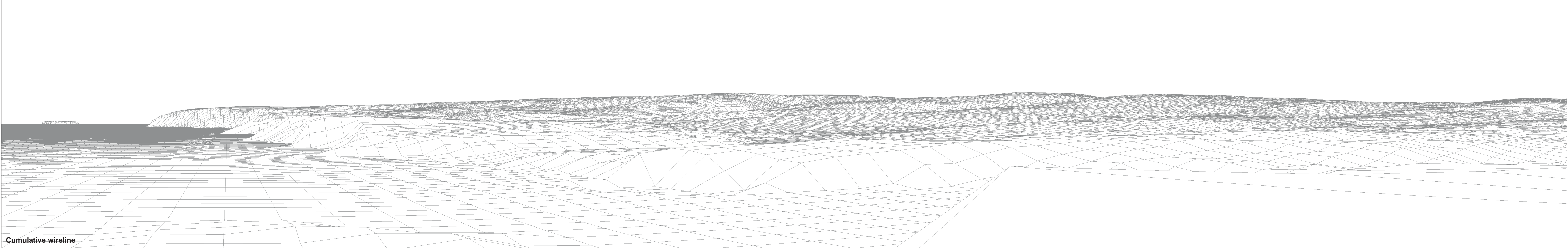
**Figure: 19:28c**  
Compass Point, Storm Tower, south of Bude (on SWCP)





Baseline photograph

This image provides landscape and visual context only

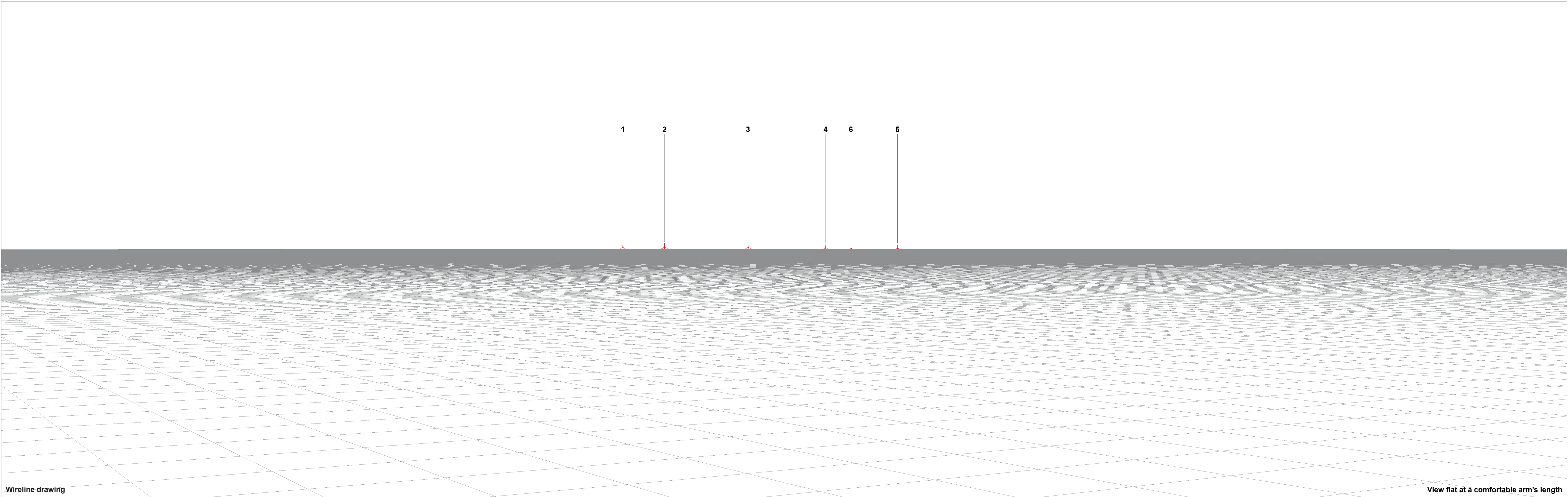


Cumulative wireline

<b>OS reference:</b>	220041 E 106341 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	34.44 m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	32°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	57.14 km			<b>Date and time:</b>	19/09/2022, 11:42:35

Figure: 19:28d  
Compass Point, Storm Tower, south of Bude (on SWCP)





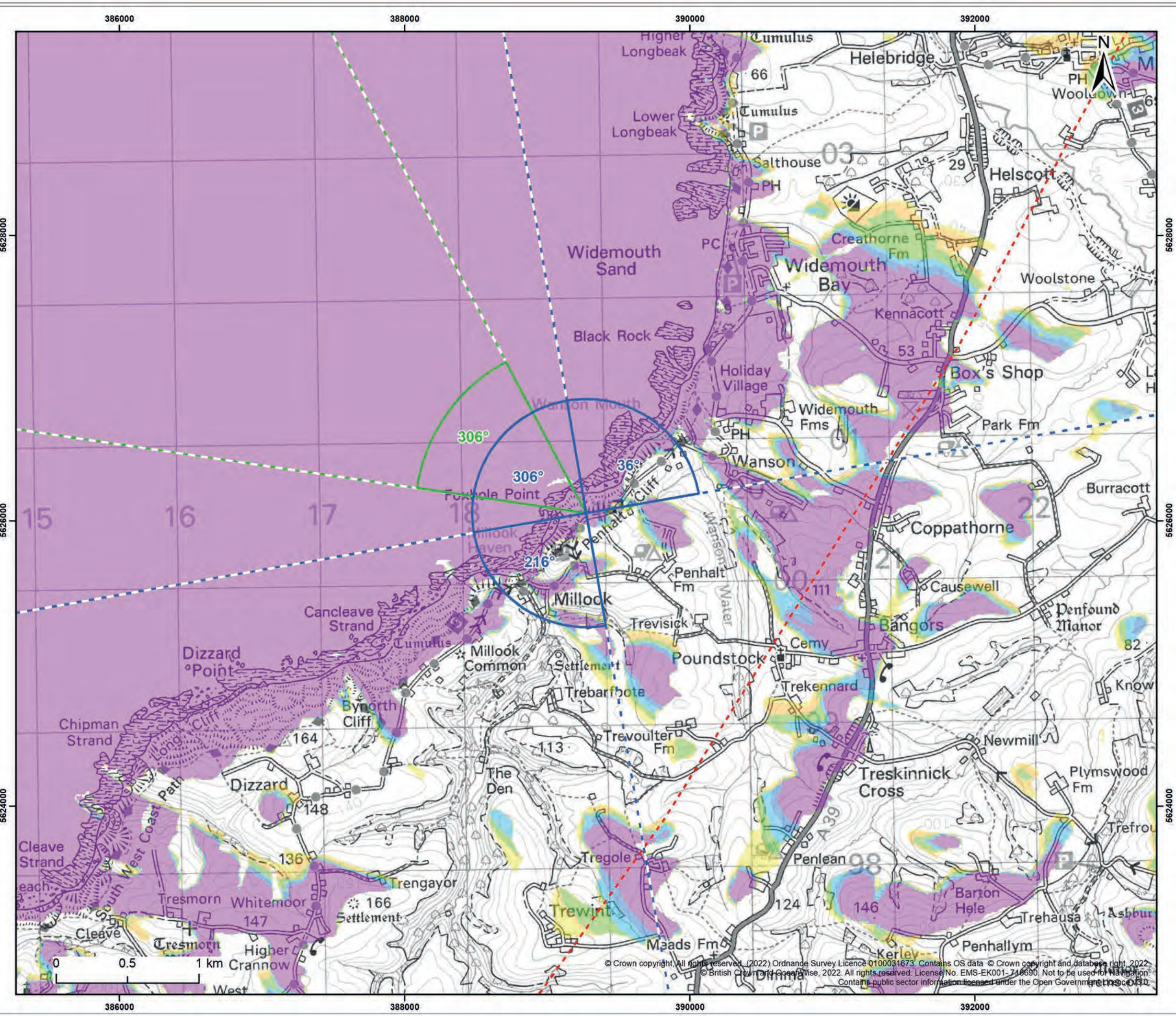
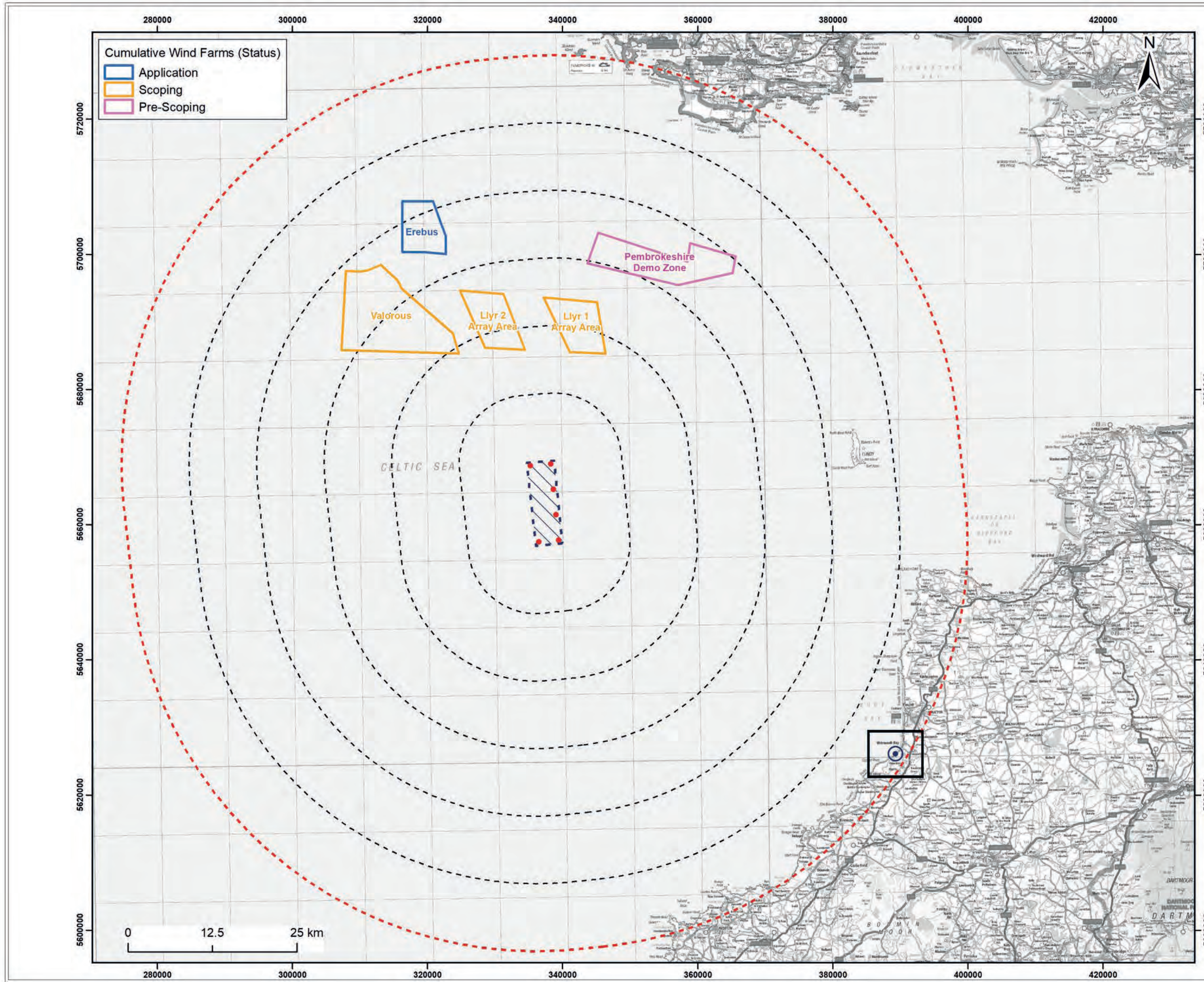
Wireline drawing

View flat at a comfortable arm's length

<b>OS reference:</b> 220041 E 106341 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 34.44 m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 302°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 57.14 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 19/09/2022, 11:42:35

**Figure: 19:28e**  
Compass Point, Storm Tower, south of Bude (on SWCP)





**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- Panorama with Cumulative Wireline (90°HFOV)
- Photomontage and / or Wireline (53.5°HFOV)
- Zone of theoretical visibility (blade tip)
- No. of turbines theoretically visible

1
2
3
4
5
6

Blade tip: 284m above MSL      Observer height: 2m  
DTM: OS Terrain 5      Surface features: Excluded  
DTM resolution: 10m      Earth curvature: Included

Client: Offshore Wind Ltd.      Project: White Cross Offshore Windfarm

Title: Viewpoint 5: Penhalt Cliff, Ordnance Survey Viewpoint

Figure: 19.29a      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0520

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

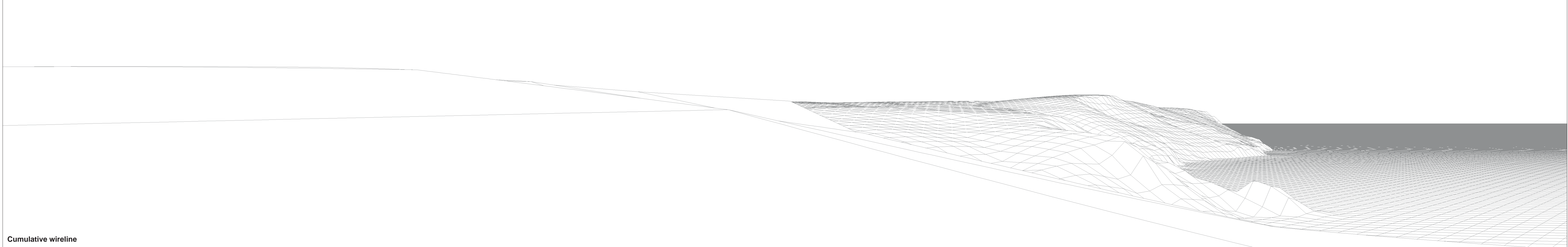
Co-ordinate system: WGS 1984 UTM Zone 30N





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b>	218869 E 100494 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D Mark II
<b>Eye level:</b>	101.21m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	216°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	59.09 km			<b>Date and time:</b>	18/09/2022, 08:26:37

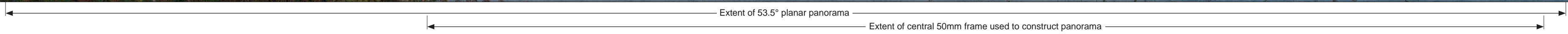
Figure: 19:29b  
Penhalt Cliff, Ordnance Survey Viewpoint



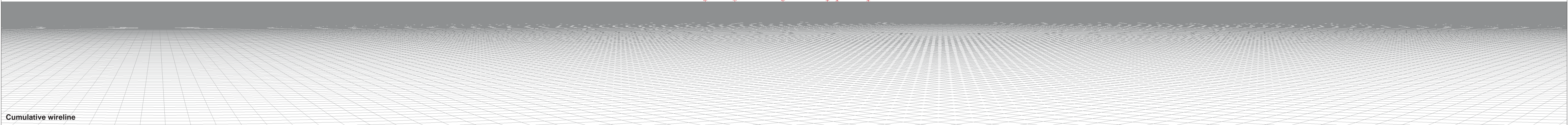


Baseline photograph

This image provides landscape and visual context only



Proposed Development (59.09km)



Cumulative wireline

<b>OS reference:</b>	218869 E 100494 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	101.21m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	306°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	59.09 km			<b>Date and time:</b>	18/09/2022, 08:26:37

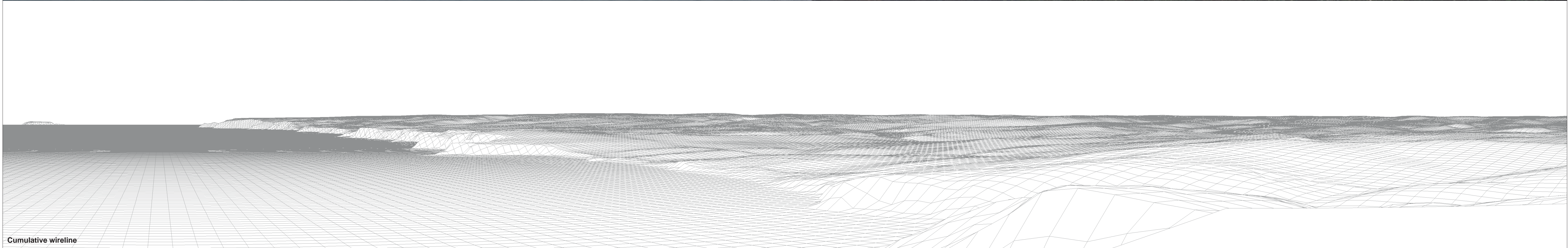
Figure: 19:29c  
Penhalt Cliff, Ordnance Survey Viewpoint





Baseline photograph

This image provides landscape and visual context only

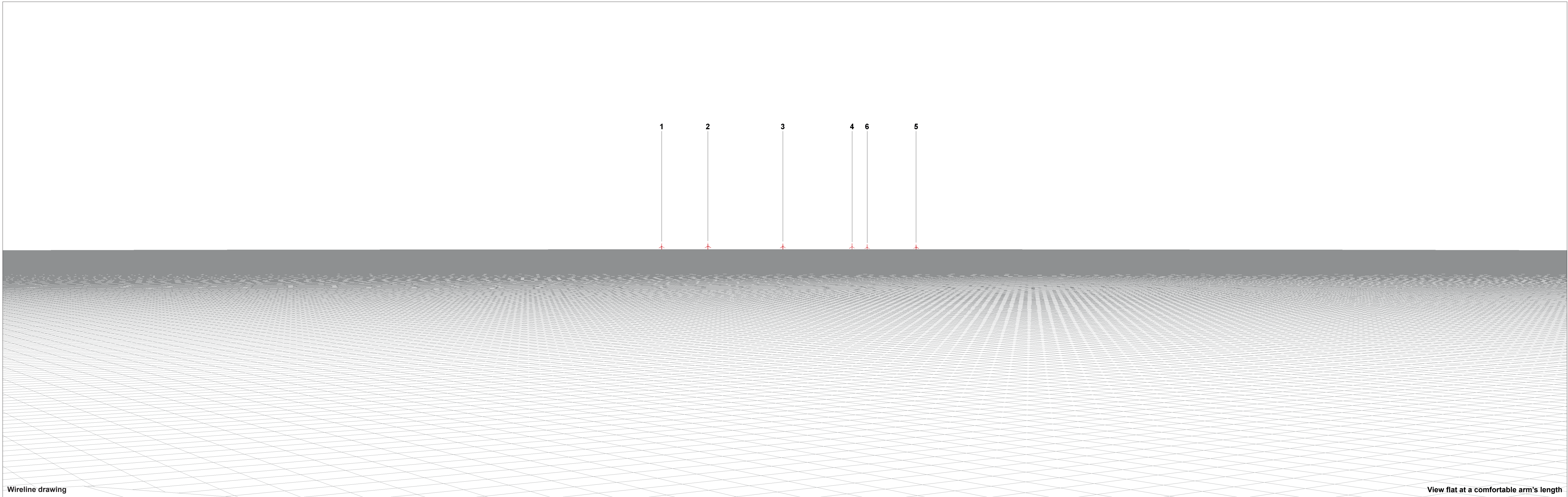


Cumulative wireline

<b>OS reference:</b> 218869 E 100494 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 101.21m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 36°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 59.09 km		<b>Date and time:</b> 18/09/2022, 08:26:37

**Figure: 19:29d**  
**Penhalt Cliff, Ordnance Survey Viewpoint**





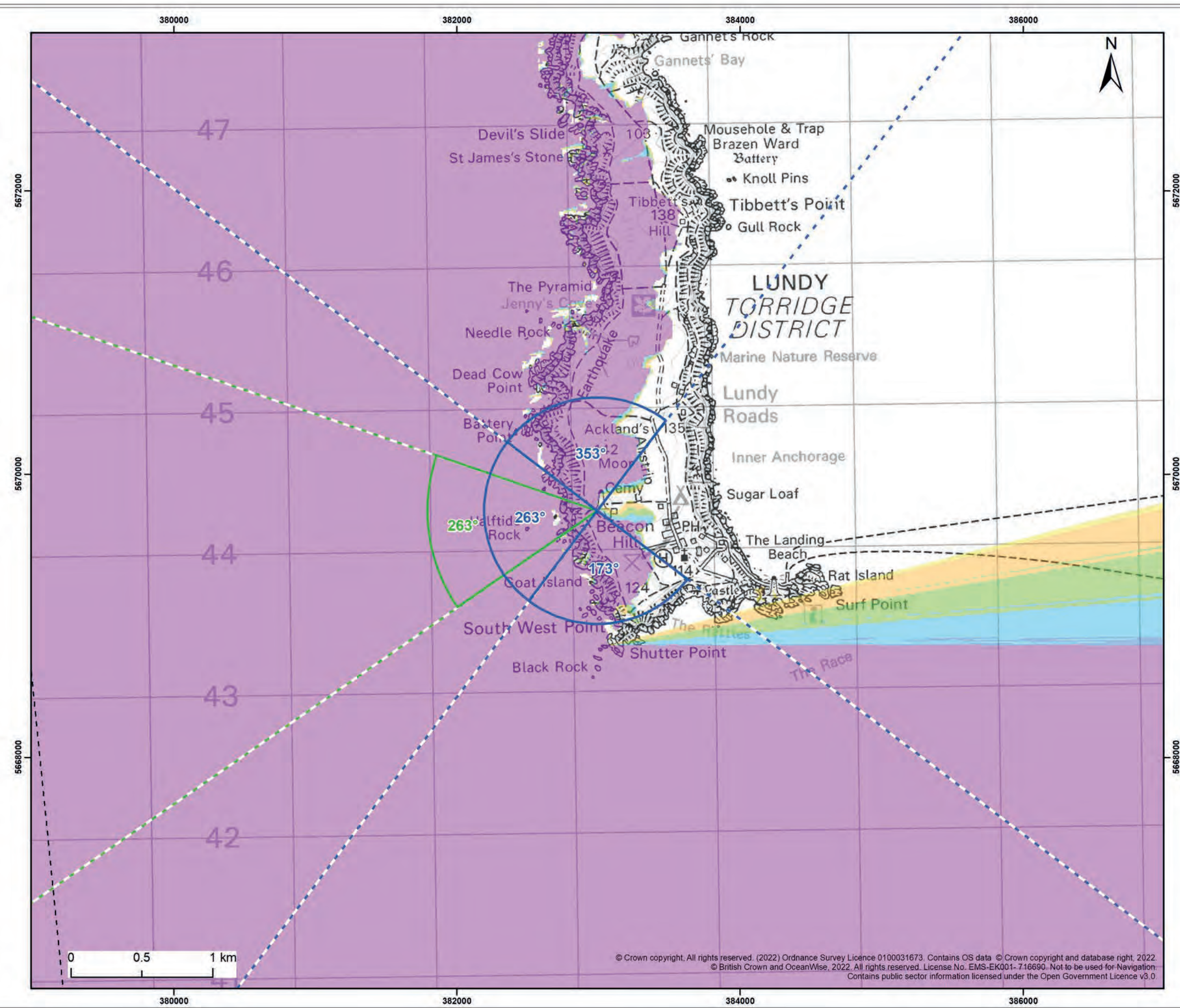
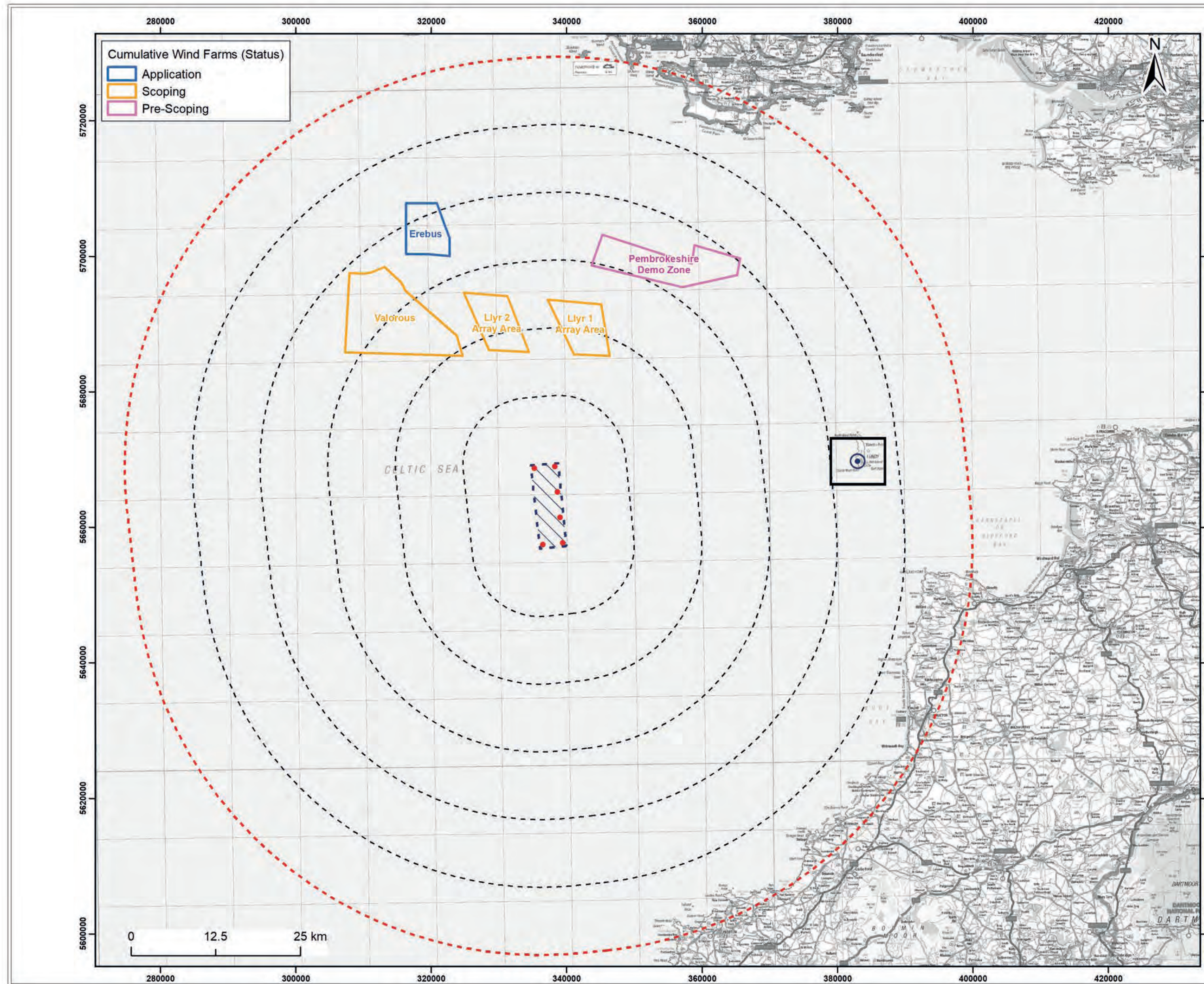
Wireline drawing

View flat at a comfortable arm's length

<b>OS reference:</b> 218869 E 100494 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 101.21m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 306°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 59.09 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 18/09/2022, 08:26:37

**Figure: 19:29e**  
**Penhalt Cliff, Ordnance Survey Viewpoint**





**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- Panorama with Cumulative Wireline (90°HFOV)
- Photomontage and / or Wireline (53.5°HFOV)

Zone of theoretical visibility (blade tip)

No. of turbines theoretically visible

1
2
3
4
5
6

Blade tip: 284m above MSL  
 DTM: OS Terrain 5  
 DTM resolution: 10m

Observer height: 2m  
 Surface features: Excluded  
 Earth curvature: Included

Client: Offshore Wind Ltd.      Project: White Cross Offshore Windfarm

Title: Viewpoint 6: Lundy Island, Old Light

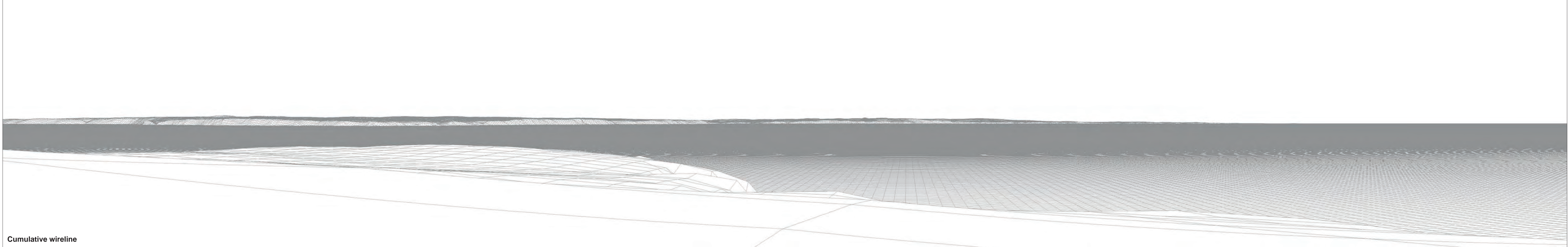
Figure: 19.30a      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0521

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

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**OS reference:** 213178 E 144276 N  
**Eye level:** 143.94m AOD  
**Direction of view:** 173°  
**Nearest turbine:** 44.61 km

**Horizontal field of view:** 90° (cylindrical projection)  
**Principal distance:** 522 mm

**Camera:** Canon EOS 6D Mark II  
**Lens:** EF50mm f/1.4 USM  
**Camera height:** 1.5 m AGL  
**Date and time:** 17/09/2022, 13:05:53

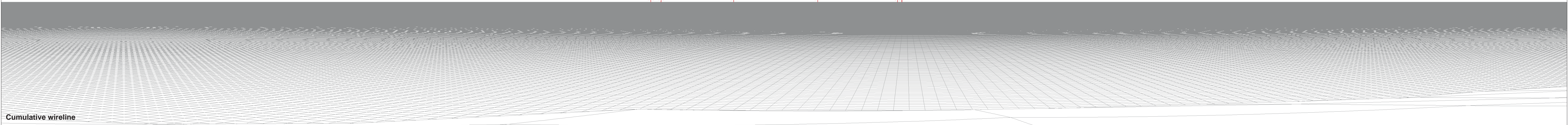
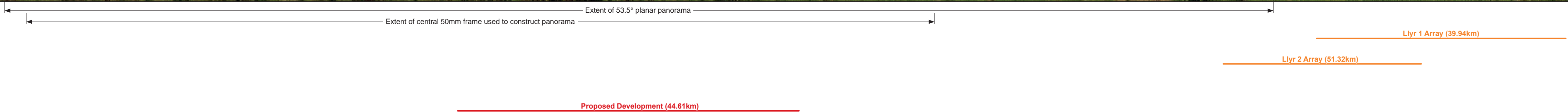
**Figure: 19:30b**  
**Lundy Island, Old Light**





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b>	213178 E 144276 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	143.94m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	263°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	44.61 km			<b>Date and time:</b>	17/09/2022, 13:05:53

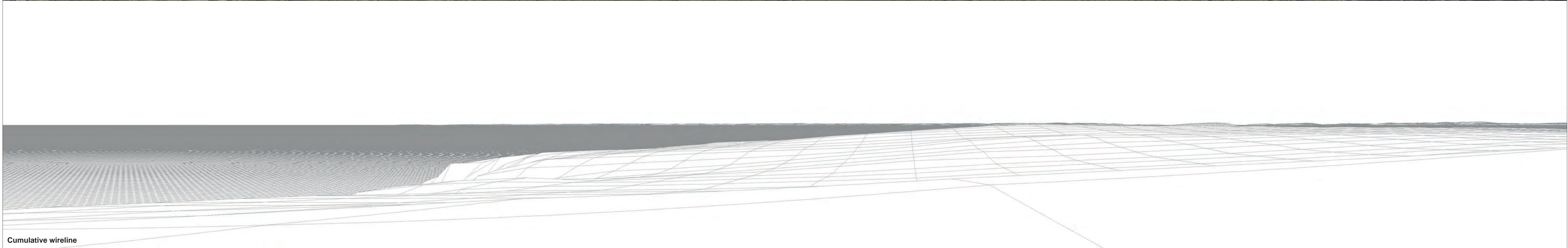
Figure: 19:30c  
Lundy Island, Old Light





Baseline photograph

This image provides landscape and visual context only

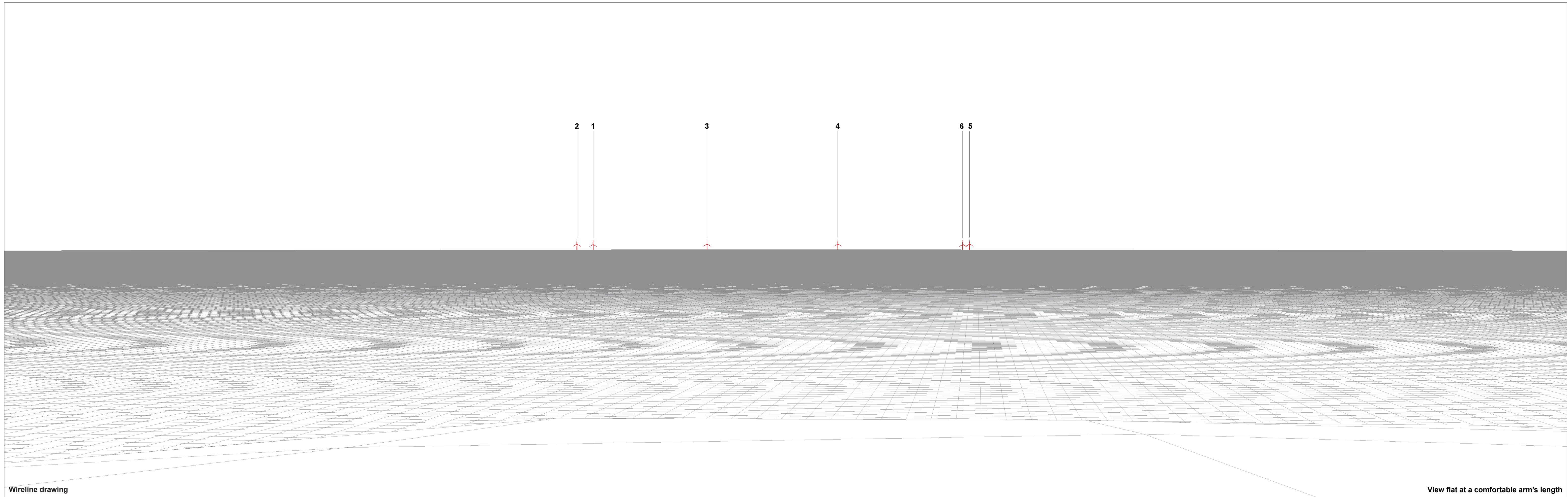


Cumulative wireline

<b>OS reference:</b> 213178 E 144276 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D	
<b>Eye level:</b> 143.94m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM	
<b>Direction of view:</b> 353°		<b>Camera height:</b> 1.5 m AGL	
<b>Nearest turbine:</b> 44.61 km		<b>Date and time:</b> 17/09/2022, 13:05:53	

Figure: 19:30d  
Lundy Island, Old Light





Wireline drawing

View flat at a comfortable arm's length

OS reference: 213178 E 144276 N  
Eye level: 143.94m AOD  
Direction of view: 263°  
Nearest turbine: 44.61 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: 17/09/2022, 13:05:53

Figure: 19:30e  
Lundy Island, Old Light





Photomontage

View flat at a comfortable arm's length

<b>OS reference:</b>	213178 E 144276 N	<b>Horizontal field of view:</b>	53.5° (planar projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	143.94m AOD	<b>Principal distance</b>	812.5 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	263°	<b>Paper size:</b>	841 x 297 mm (half A1)	<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	44.61 km	<b>Correct printed image size:</b>	820 x 260 mm	<b>Date and time:</b>	17/09/2022, 13:05:53

**Figure: 19:30f**  
**Lundy Island, Old Light**



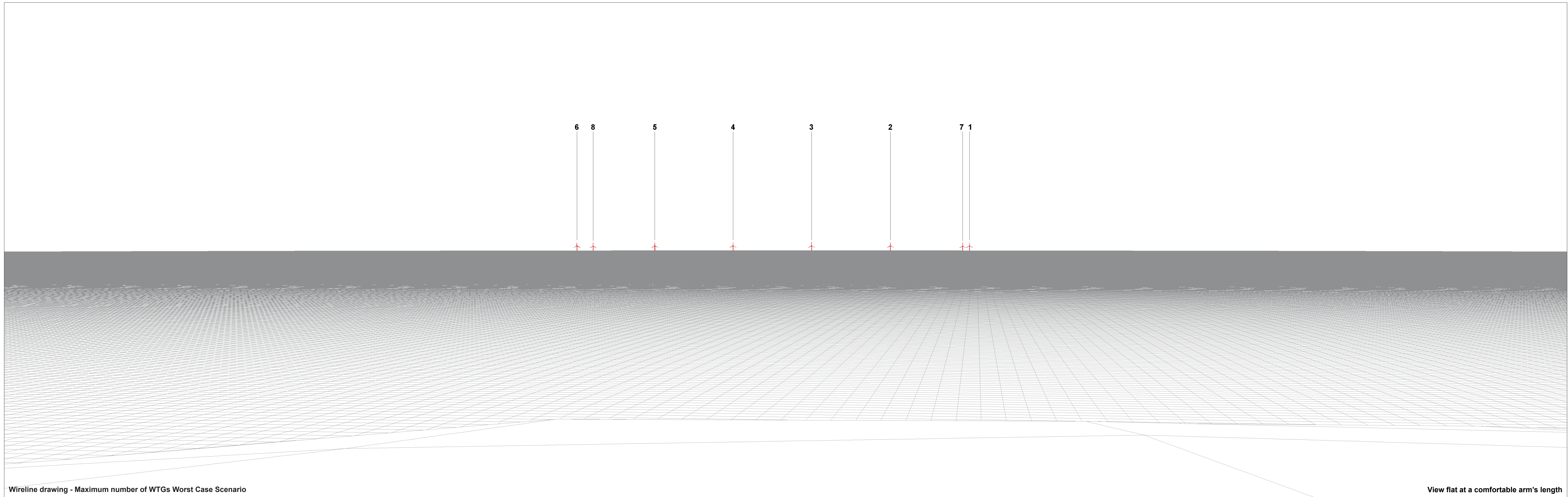


Night-time Baseline Photograph

View flat at a comfortable arm's length

<b>OS reference:</b> 213178 E 144276 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D	<b>Figure: 19:30g</b> <b>Lundy Island, Old Light</b>
<b>Eye level:</b> 143.94m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM	
<b>Direction of view:</b> 263°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL	
<b>Nearest turbine:</b> 44.61 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 17/09/2022	





Wireline drawing - Maximum number of WTGs Worst Case Scenario

View flat at a comfortable arm's length

<b>OS reference:</b>	213178 E 144276 N	<b>Horizontal field of view:</b>	53.5° (planar projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	143.94m AOD	<b>Principal distance:</b>	812.5 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	263°	<b>Paper size:</b>	841 x 297 mm (half A1)	<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	44.61 km	<b>Correct printed image size:</b>	820 x 260 mm	<b>Date and time:</b>	17/09/2022, 13:05:53

**Figure: 19:30h**  
Lundy Island, Old Light





Photomontage - Aviation lighting at 2000 candela (Maximum number of WTGs Worst Case Scenario)

View flat at a comfortable arm's length

<b>OS reference:</b>	213178 E 144276 N	<b>Horizontal field of view:</b>	53.5° (planar projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	143.94m AOD	<b>Principal distance</b>	812.5 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	263°	<b>Paper size:</b>	841 x 297 mm (half A1)	<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	44.61 km	<b>Correct printed image size:</b>	820 x 260 mm	<b>Date and time:</b>	17/09/2022

**Figure: 19:30i**  
Lundy Island, Old Light



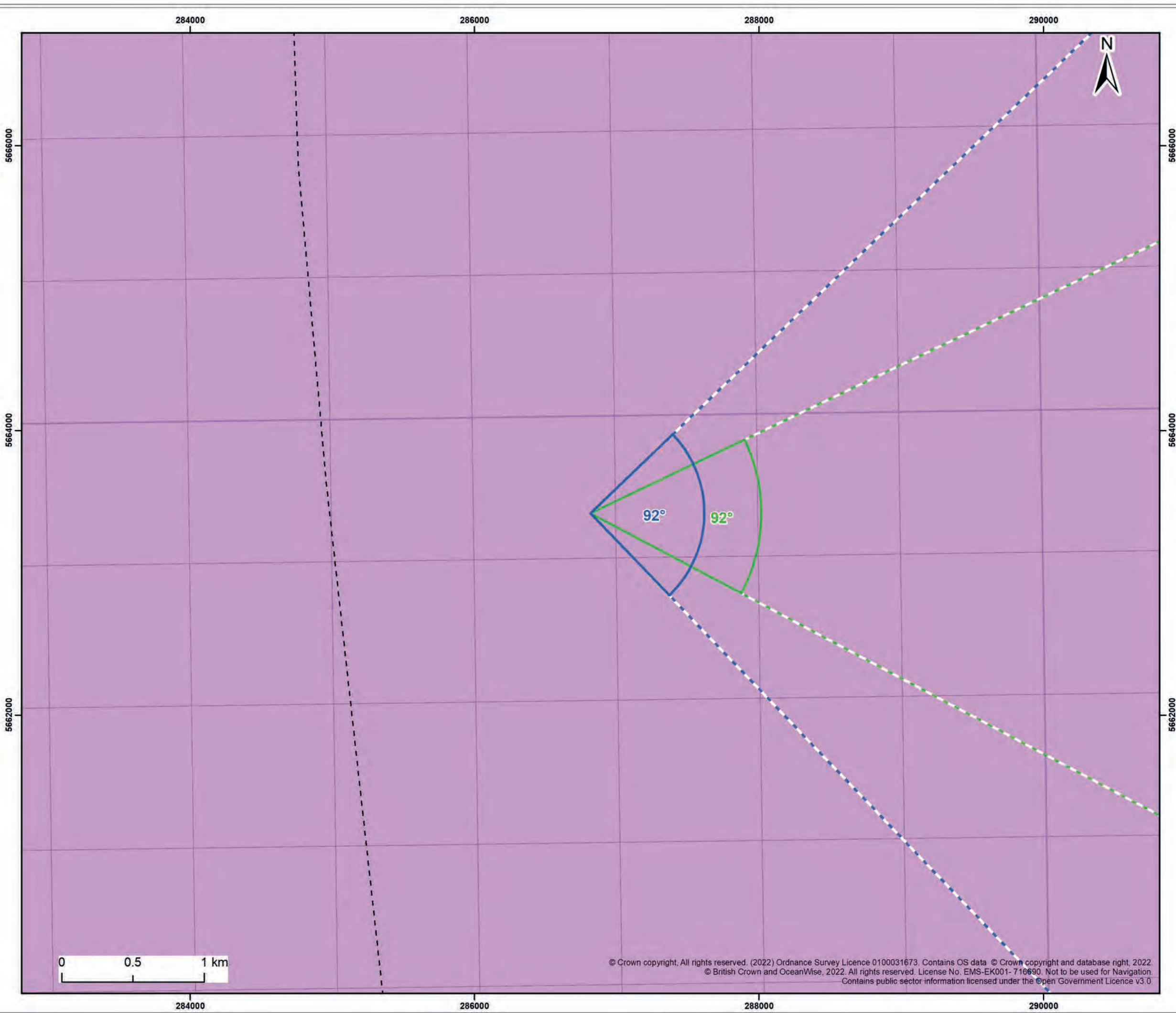
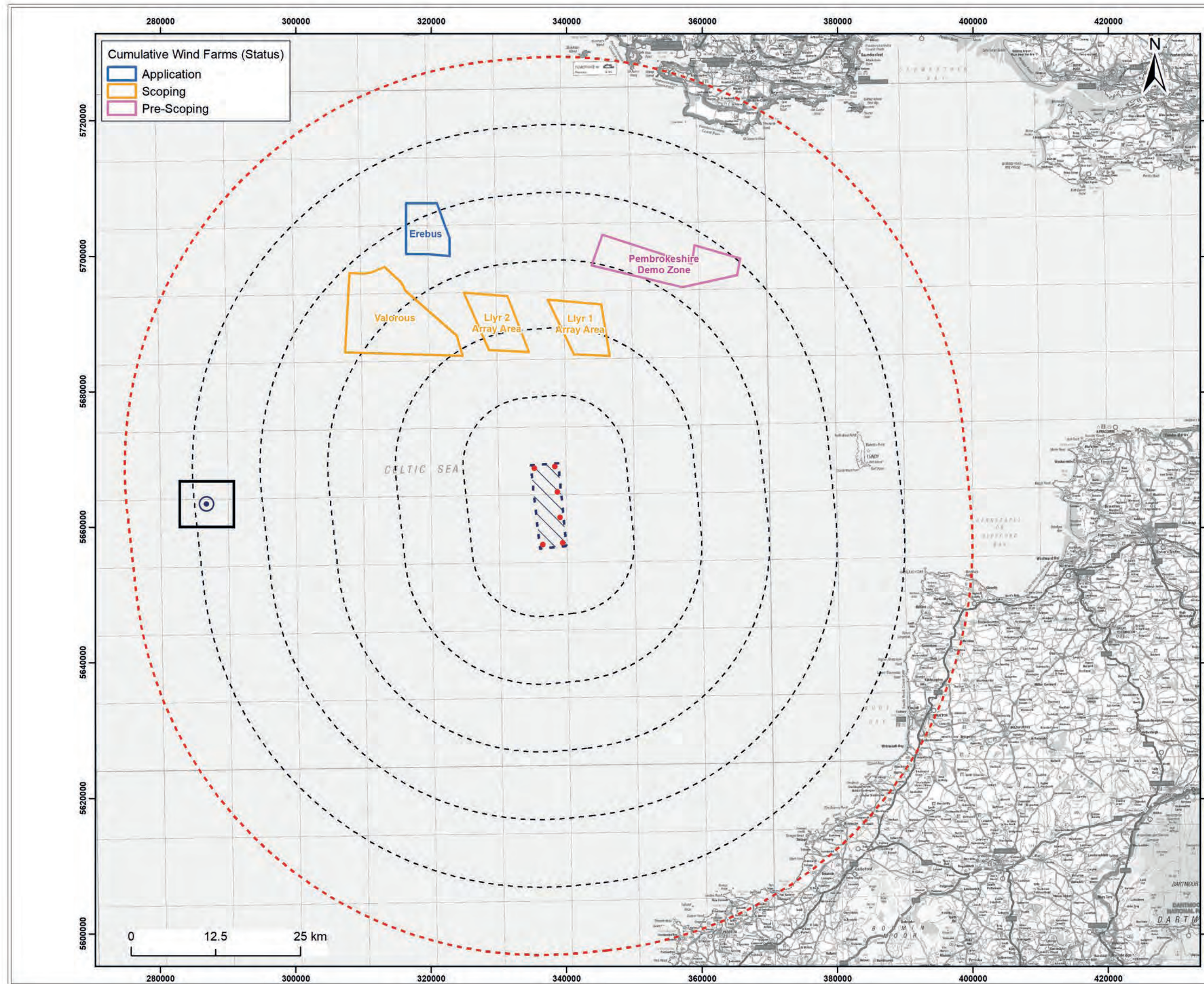


Photomontage - Aviation lighting at 200 candela (Maximum number of WTGs Worst Case Scenario)

View flat at a comfortable arm's length

<b>OS reference:</b>	213178 E 144276 N	<b>Horizontal field of view:</b>	53.5° (planar projection)	<b>Camera:</b>	Canon EOS 6D	<b>Figure: 19:30j</b> <b>Lundy Island, Old Light</b>
<b>Eye level:</b>	143.94m AOD	<b>Principal distance</b>	812.5 mm	<b>Lens:</b>	EF50mm f/1.4 USM	
<b>Direction of view:</b>	263°	<b>Paper size:</b>	841 x 297 mm (half A1)	<b>Camera height:</b>	1.5 m AGL	
<b>Nearest turbine:</b>	44.61 km	<b>Correct printed image size:</b>	820 x 260 mm	<b>Date and time:</b>	17/09/2022	





**Legend:**

- Proposed Turbine (Red dot)
- Windfarm Site (Blue dashed line)
- 10km Radii (Black dashed line)
- 60km Study Area (Red dashed line)
- Viewpoint Location (Blue circle with dot)
- Panorama with Cumulative Wireline (90°HFOV) (Blue outline)
- Photomontage and / or Wireline (53.5°HFOV) (Green outline)
- Zone of theoretical visibility (blade tip) (Green outline)

**Technical Data:**

Blade tip:	284m above MSL	Observer height:	2m
DTM:	OS Terrain 5	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

**Client:** Offshore Wind Ltd. **Project:** White Cross Offshore Windfarm

**Title:** Viewpoint 7: Rosslare to Cherbourg Ferry

**Figure:** 19.31a **Drawing No:** PC2978-OPN-ZZ-XX-DR-Z\_0522

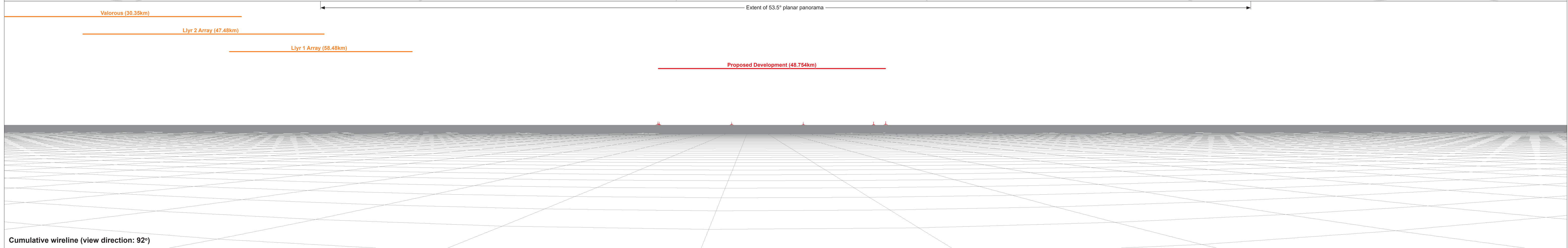
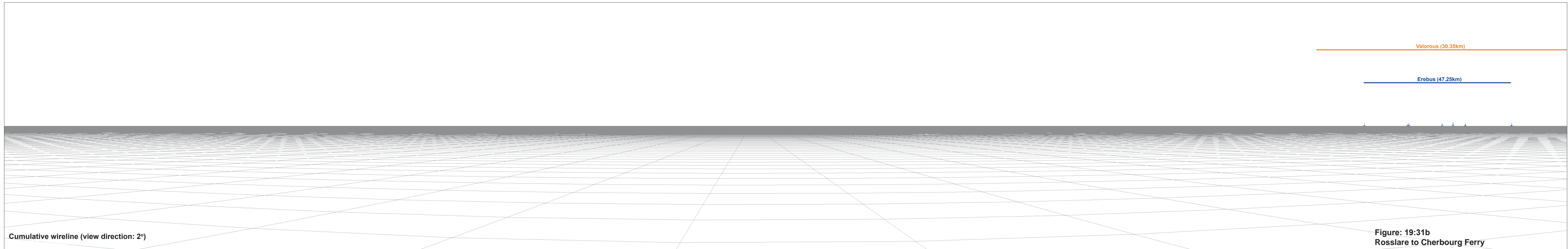
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

**Co-ordinate system:** WGS 1984 UTM Zone 30N

**Logos:** WHITE CROSS, Royal HaskoningDHV

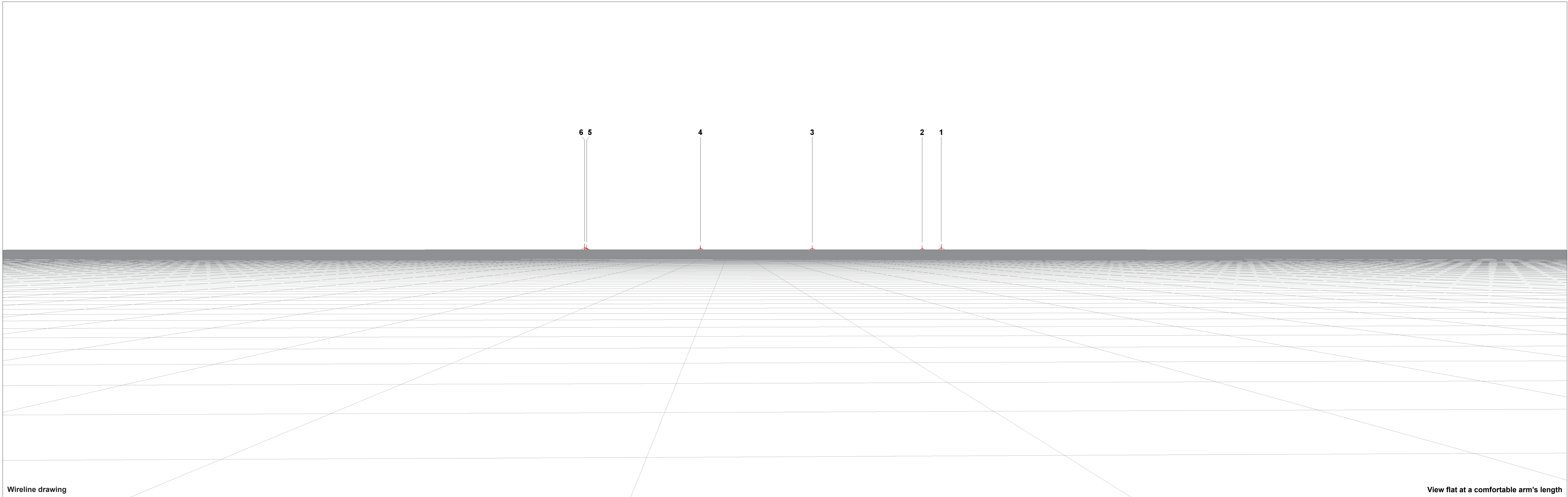
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<b>OS reference:</b>	116826 E 139316 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	10.00m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	2° (top) 92° (bottom)			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	48.75 km			<b>Date and time:</b>	N/A

Figure: 19:31c  
Rosslare to Cherbourg Ferry



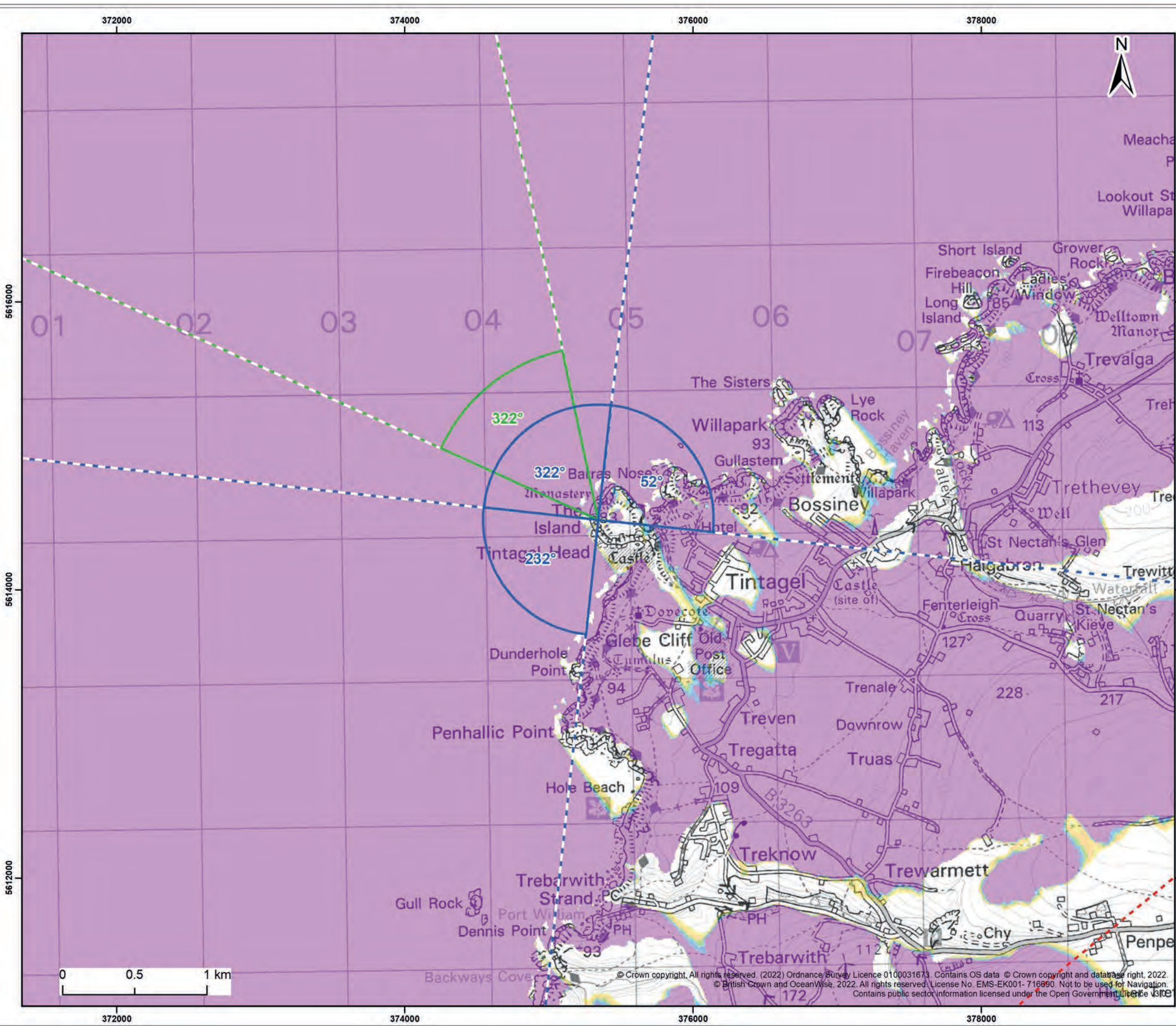
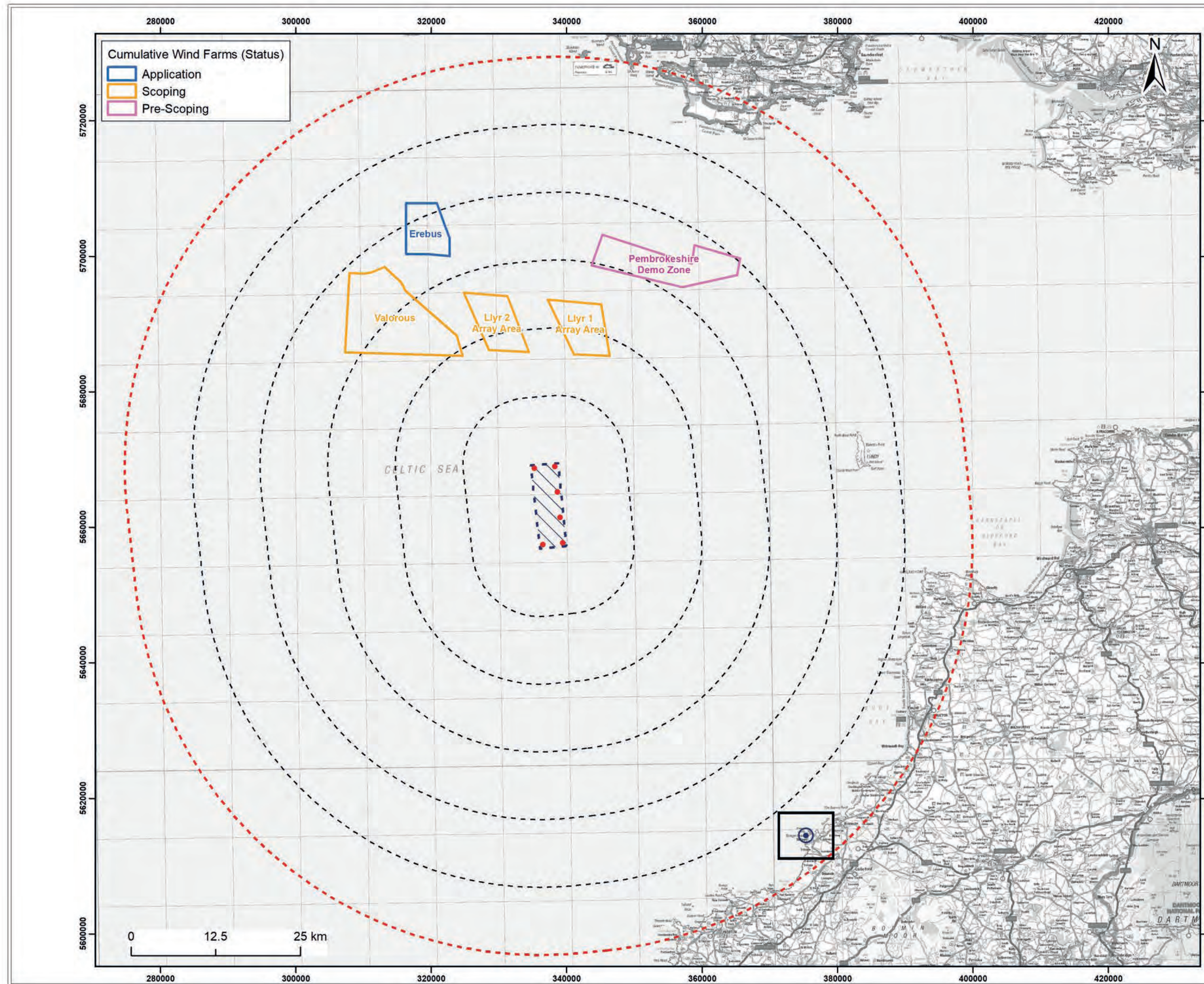
Wireline drawing

View flat at a comfortable arm's length

<b>OS reference:</b> 116826 E 139316 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 10.00m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 92°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 48.75 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> N/A

**Figure: 19:31d**  
Rosslare to Cherbourg Ferry





**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- Panorama with Cumulative Wireline (90°HFOV)
- Photomontage and / or Wireline (53.5°HFOV)
- Zone of theoretical visibility (blade tip)

No. of turbines theoretically visible

1
2
3
4
5
6

Blade tip: 284m above MSL  
 Observer height: 2m  
 DTM: OS Terrain 5  
 Surface features: Excluded  
 DTM resolution: 10m  
 Earth curvature: Included

Client: Offshore Wind Ltd.      Project: White Cross Offshore Windfarm

Title: Viewpoint 8: Tintagel

Figure: 19.32a      Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0523

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

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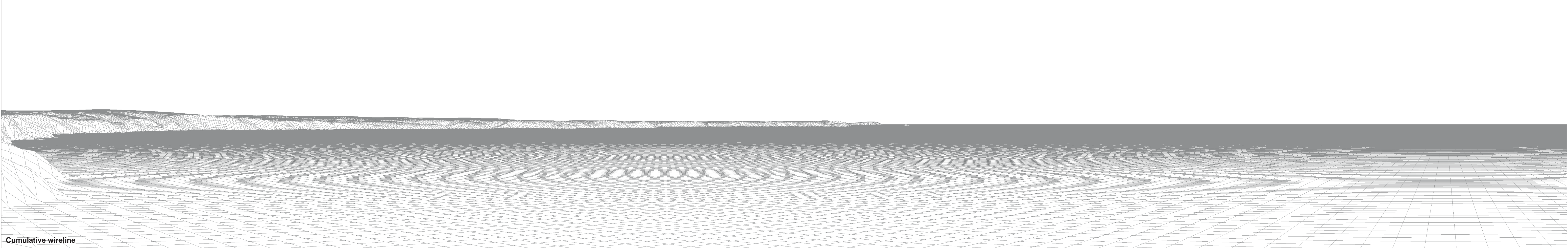
**WHITE CROSS**      **Royal HaskoningDHV**  
 Enhancing Society Together





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

<b>OS reference:</b>	204779 E 89113 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D Mark II
<b>Eye level:</b>	79.99m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	232°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	56.23 km			<b>Date and time:</b>	18/09/2022, 12:19:38

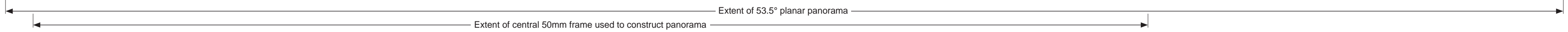
**Figure: 19:32b**  
**Tintagel**



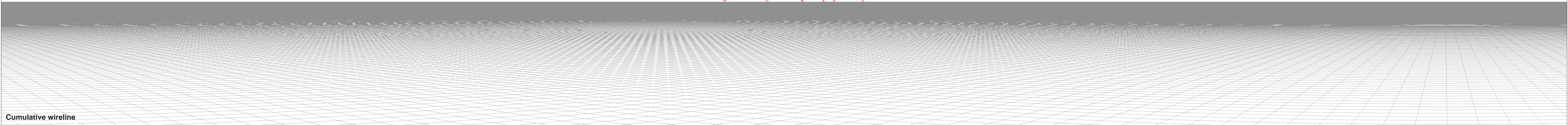


Baseline photograph

This image provides landscape and visual context only



Proposed Development (56.23km)



Cumulative wireline

<b>OS reference:</b>	204779 E 89113 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	79.99m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	322°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	56.23 km			<b>Date and time:</b>	18/09/2022, 12:19:38

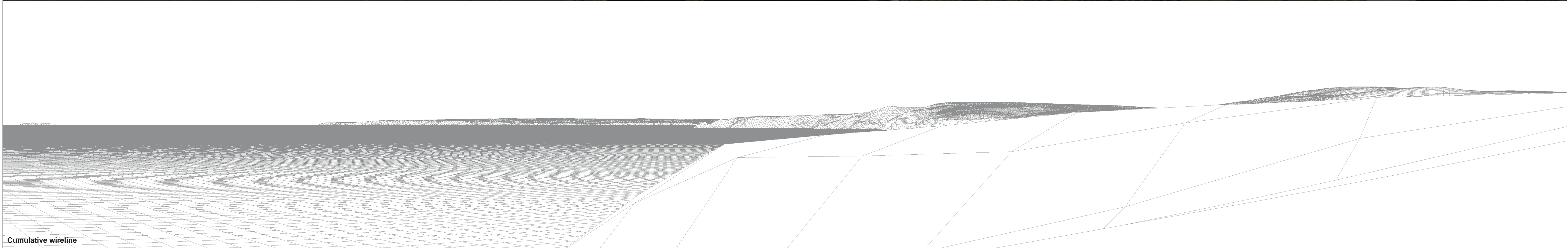
Figure: 19:32c  
Tintagel





Baseline photograph

This image provides landscape and visual context only



Cumulative wireline

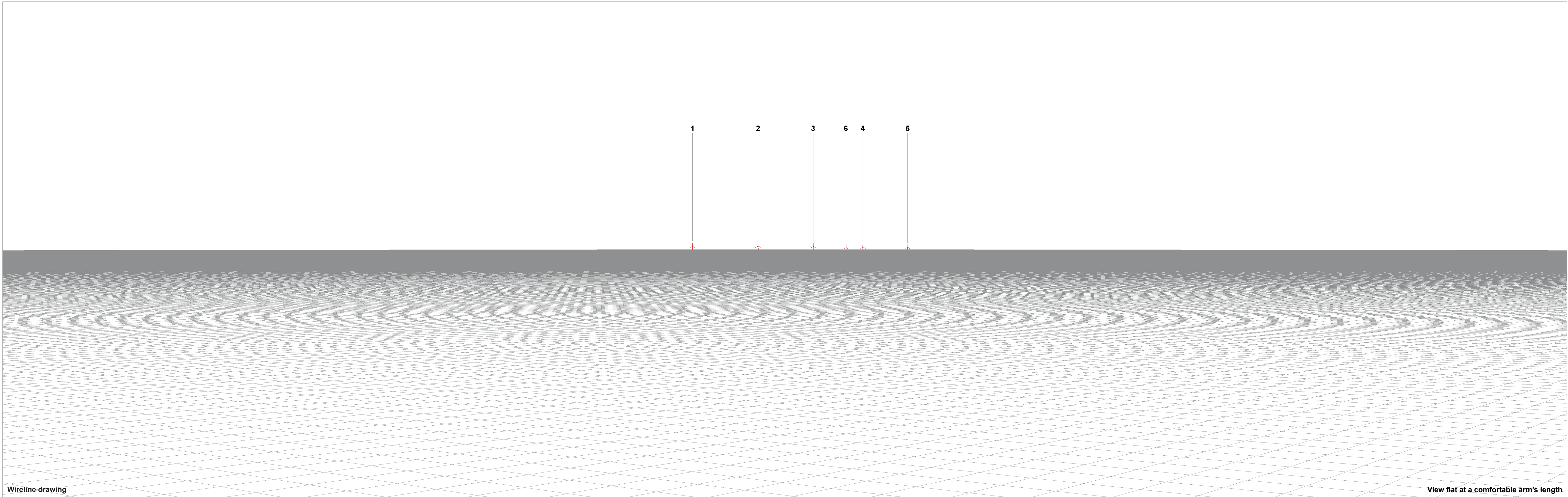
OS reference: 204779 E 89113 N  
Eye level: 79.99m AOD  
Direction of view: 52°  
Nearest turbine: 56.23 km

Horizontal field of view: 90° (cylindrical projection)  
Principal distance: 522 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: 18/09/2022, 12:19:38

Figure: 19:32d  
Tintagel





Wireline drawing

View flat at a comfortable arm's length

OS reference: 204779 E 89113 N  
Eye level: 79.99m AOD  
Direction of view: 322°  
Nearest turbine: 56.23 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: 18/09/2022, 12:19:38

Figure: 19:32e  
Tintagel





Photomontage

View flat at a comfortable arm's length

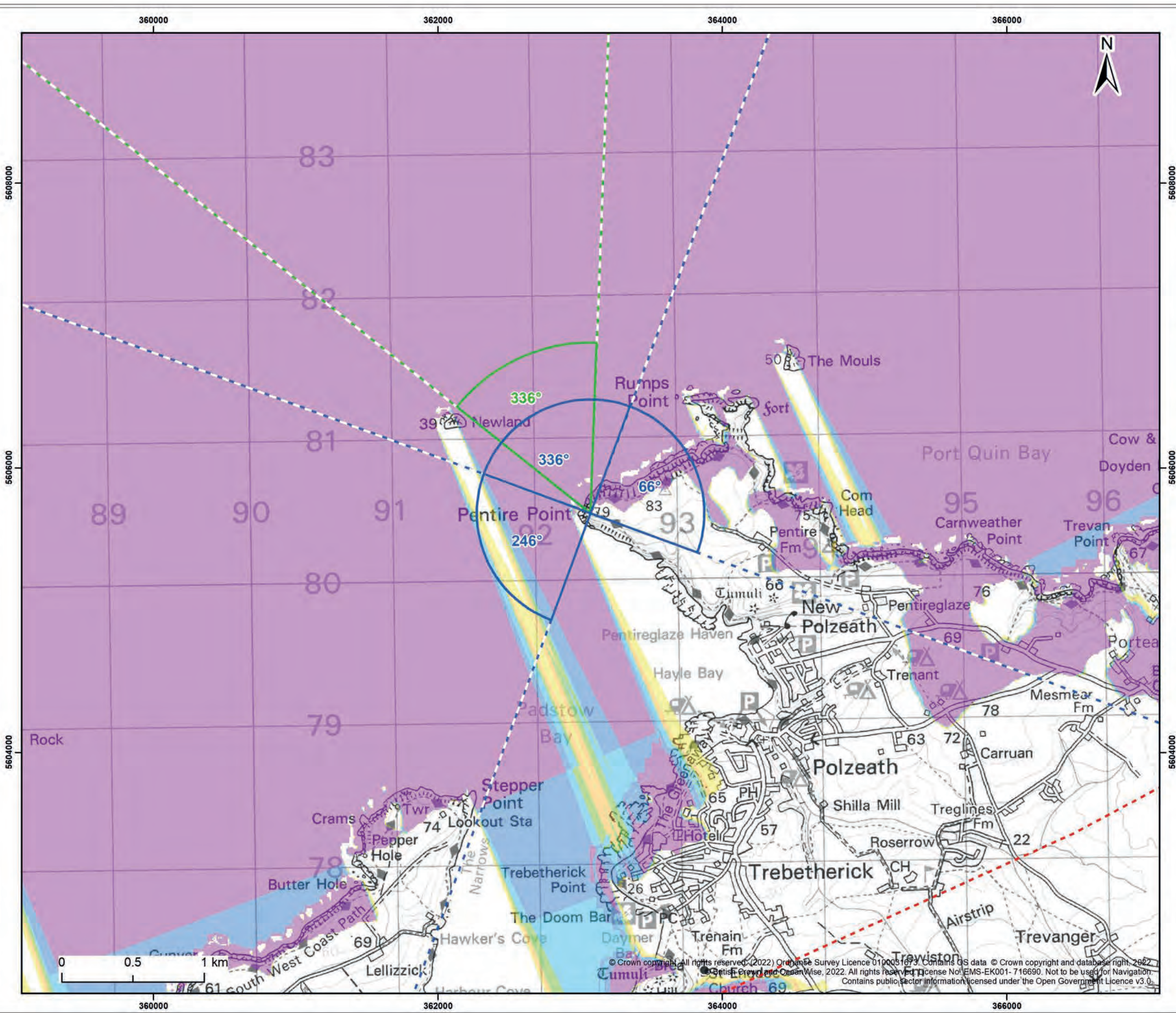
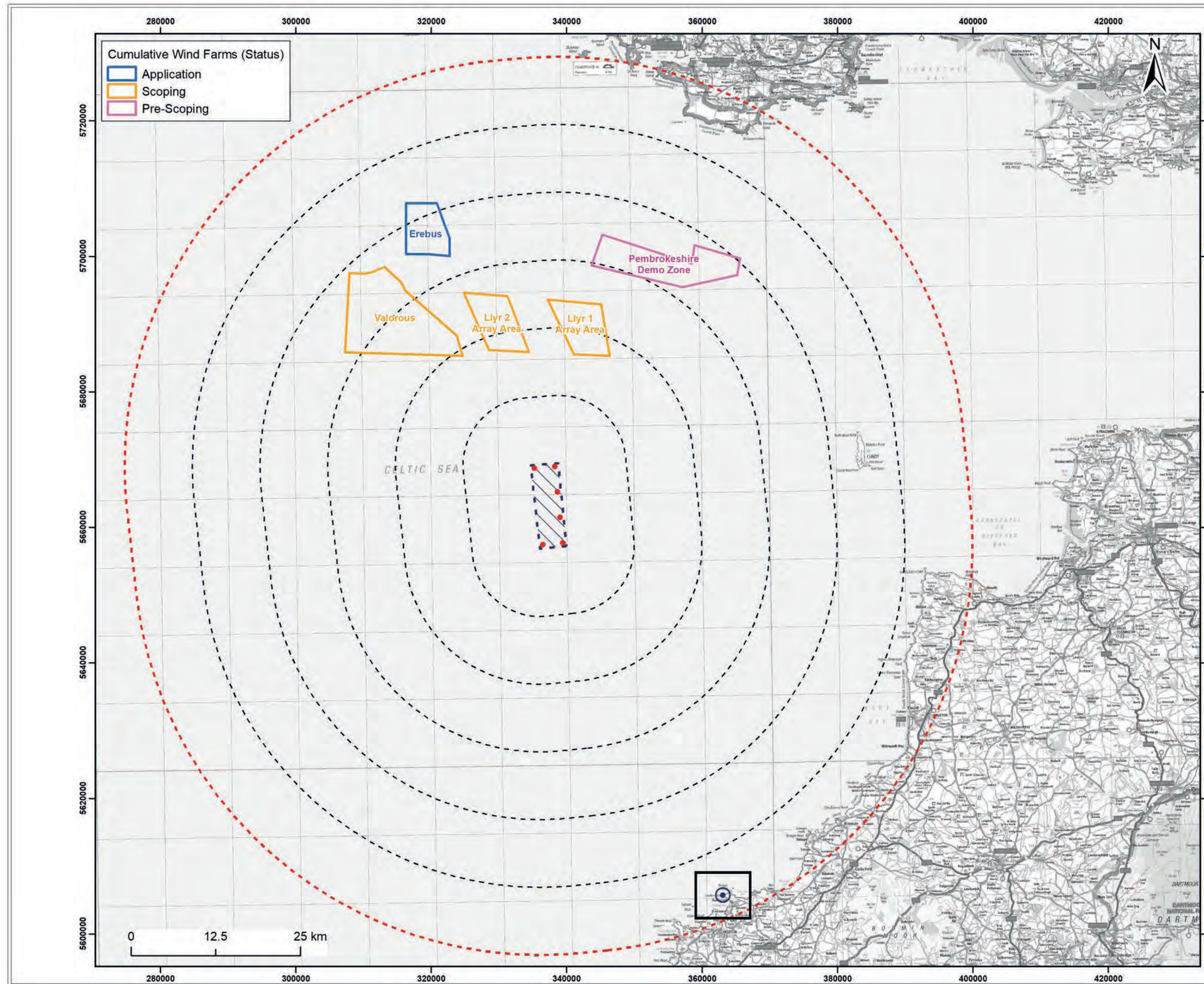
**OS reference:** 204779 E 89113 N  
**Eye level:** 79.99m AOD  
**Direction of view:** 322°  
**Nearest turbine:** 56.23 km

**Horizontal field of view:** 53.5° (planar projection)  
**Principal distance:** 812.5 mm  
**Paper size:** 841 x 297 mm (half A1)  
**Correct printed image size:** 820 x 260 mm

**Camera:** Canon EOS 6D  
**Lens:** EF50mm f/1.4 USM  
**Camera height:** 1.5 m AGL  
**Date and time:** 18/09/2022, 12:19:38

**Figure: 19:32f**  
**Tintagel**





**Legend:**

- Proposed Turbine
- Windfarm Site
- 10km Radii
- 60km Study Area
- Viewpoint Location
- Panorama with Cumulative Wireline (90°HFOV)
- Photomontage and / or Wireline (53.5°HFOV)
- Zone of theoretical visibility (blade tip)

No. of turbines theoretically visible

1
2
3
4
5
6

Blade tip: 284m above MSL  
 Observer height: 2m  
 DTM: OS Terrain 5  
 Surface features: Excluded  
 DTM resolution: 10m  
 Earth curvature: Included

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: Viewpoint 9: Pentire Head (on SWCP)

Figure: 19.33a Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0524

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

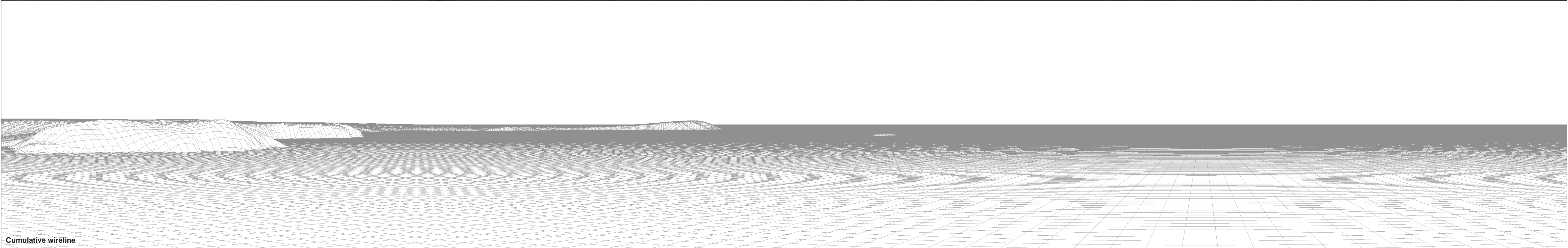
Co-ordinate system: WGS 1984 UTM Zone 30N





Baseline photograph

This image provides landscape and visual context only

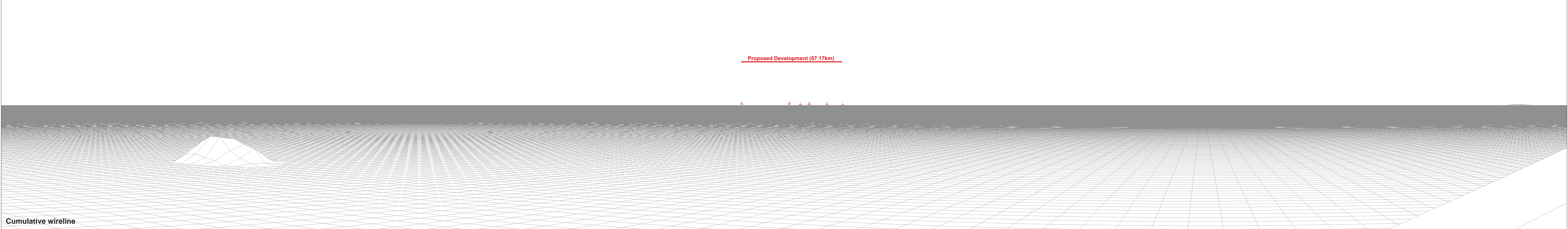
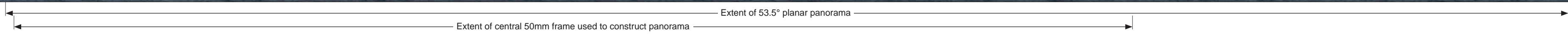


Cumulative wireline

<b>OS reference:</b> 192388 E 80471 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D Mark II
<b>Eye level:</b> 71.14m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 246°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 57.17 km		<b>Date and time:</b> 18/09/2022, 10:33:30

**Figure: 19:33b**  
**Pentire Head (on SWCP)**





<b>OS reference:</b>	192388 E 80471 N	<b>Horizontal field of view:</b>	90° (cylindrical projection)	<b>Camera:</b>	Canon EOS 6D
<b>Eye level:</b>	71.14m AOD	<b>Principal distance</b>	522 mm	<b>Lens:</b>	EF50mm f/1.4 USM
<b>Direction of view:</b>	336°			<b>Camera height:</b>	1.5 m AGL
<b>Nearest turbine:</b>	57.17 km			<b>Date and time:</b>	18/09/2022, 10:33:30

**Figure: 19:33c**  
**Pentire Head (on SWCP)**





Baseline photograph

This image provides landscape and visual context only

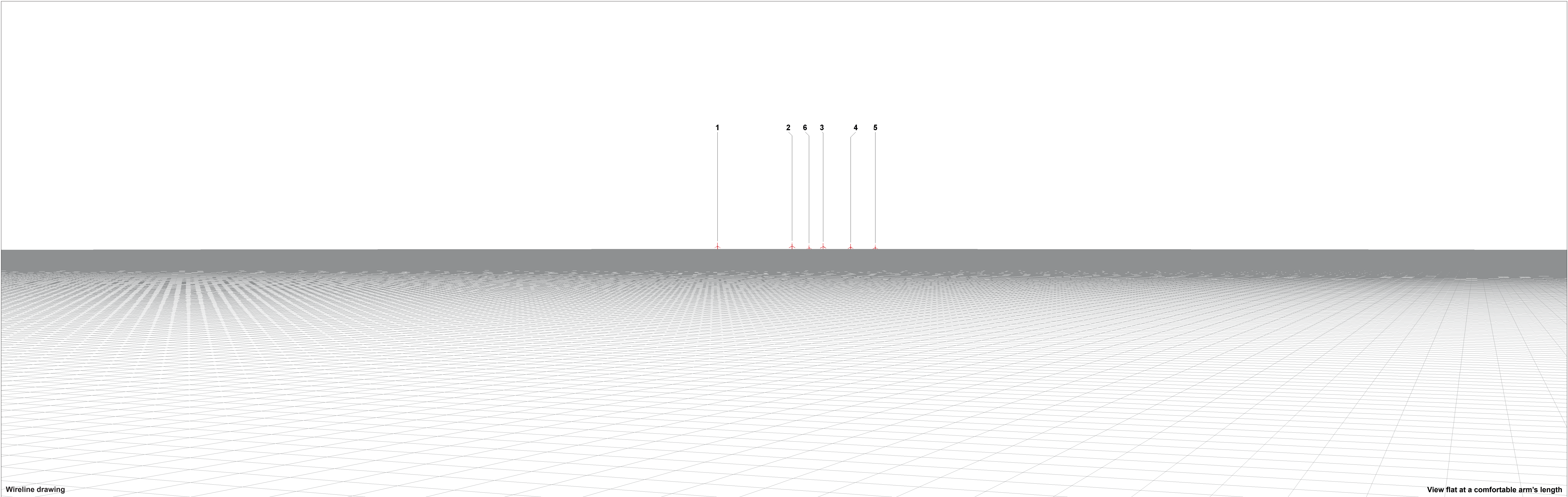


Cumulative wireline

<b>OS reference:</b> 192388 E 80471 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 71.14m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 66°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 57.17 km		<b>Date and time:</b> 18/09/2022, 10:33:30

**Figure: 19:33d**  
**Pentire Head (on SWCP)**





Wireline drawing

View flat at a comfortable arm's length

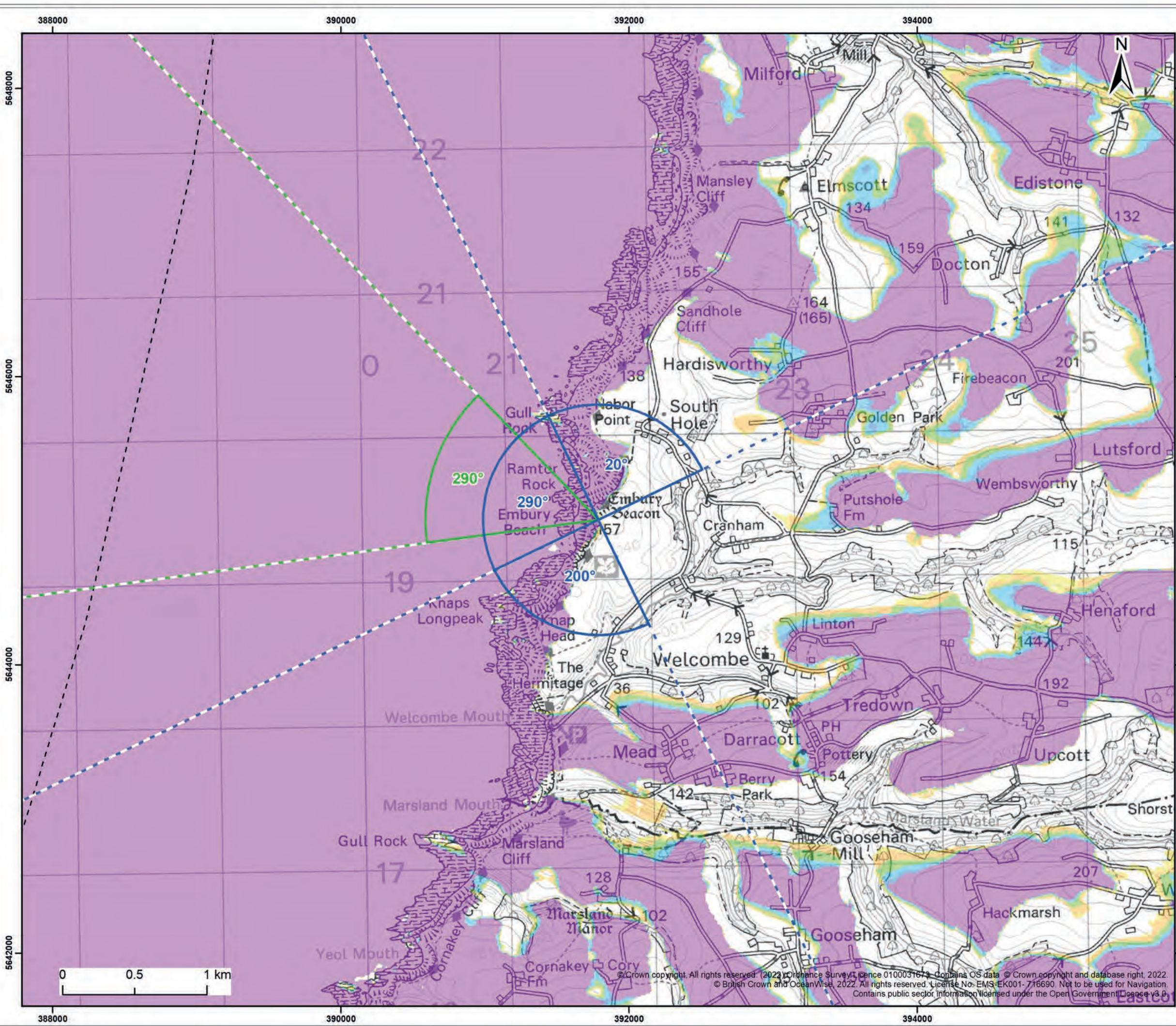
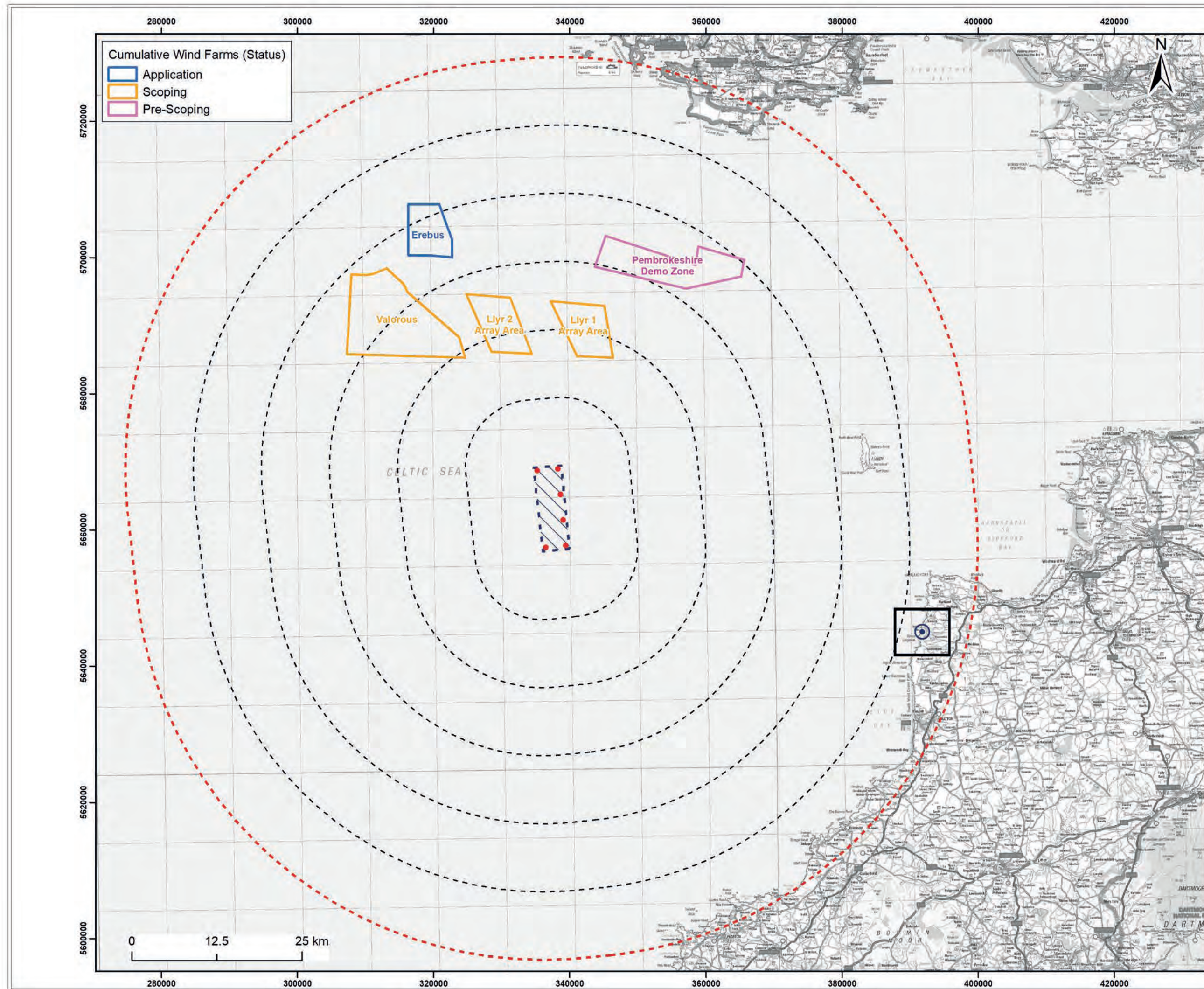
OS reference: 192388 E 80471 N  
Eye level: 71.14m AOD  
Direction of view: 336°  
Nearest turbine: 57.17 km

Horizontal field of view: 53.5° (planar projection)  
Principal distance: 812.5 mm  
Paper size: 841 x 297 mm (half A1)  
Correct printed image size: 820 x 260 mm

Camera: Canon EOS 6D  
Lens: EF50mm f/1.4 USM  
Camera height: 1.5 m AGL  
Date and time: 18/09/2022, 10:33:30

Figure: 19:33e  
Pentire Head (on SWCP)





**Legend:**

- Proposed Turbine (Red dot)
- Windfarm Site (Blue dashed line)
- 10km Radii (Black dashed line)
- 60km Study Area (Red dashed line)
- Viewpoint Location (Blue circle with crosshair)
- Panorama with Cumulative Wireline (90°HFOV) (Blue outline)
- Photomontage and / or Wireline (53.5°HFOV) (Green outline)

**Zone of theoretical visibility (blade tip)**

No. of turbines theoretically visible:

- 1 (Yellow)
- 2 (Orange)
- 3 (Light Green)
- 4 (Light Blue)
- 5 (Medium Blue)
- 6 (Purple)

Blade tip: 284m above MSL | Observer height: 2m  
 DTM: OS Terrain 5 | Surface features: Excluded  
 DTM resolution: 10m | Earth curvature: Included

Client: Offshore Wind Ltd. | Project: White Cross Offshore Windfarm

Title: Viewpoint 10: Embury Beacon

Figure: 19.34a | Drawing No: PC2978-OPN-ZZ-XX-DR-Z\_0525

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	23/02/2023	JM	CW	A3	1:25,000

Co-ordinate system: WGS 1984 UTM Zone 30N

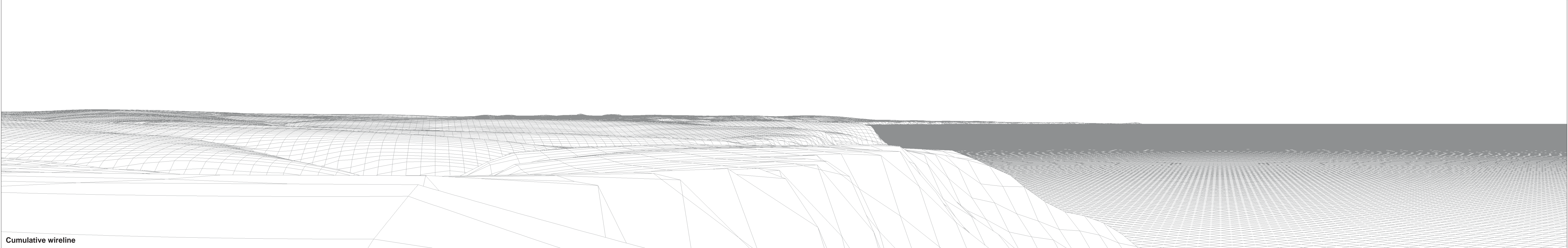
WHITE CROSS | Royal HaskoningDHV  
 Enhancing Society Together





Baseline photograph

This image provides landscape and visual context only

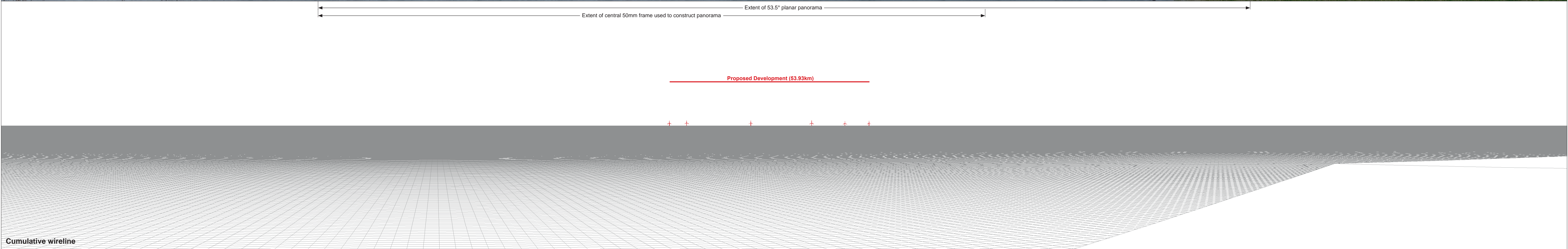


Cumulative wireline

<b>OS reference:</b> 221639 E 119416 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D Mark II
<b>Eye level:</b> 158.00m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 200°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 53.93 km		<b>Date and time:</b> 29/11/2022, 11:14:40

**Figure: 19:34b**  
**Embury Beacon**

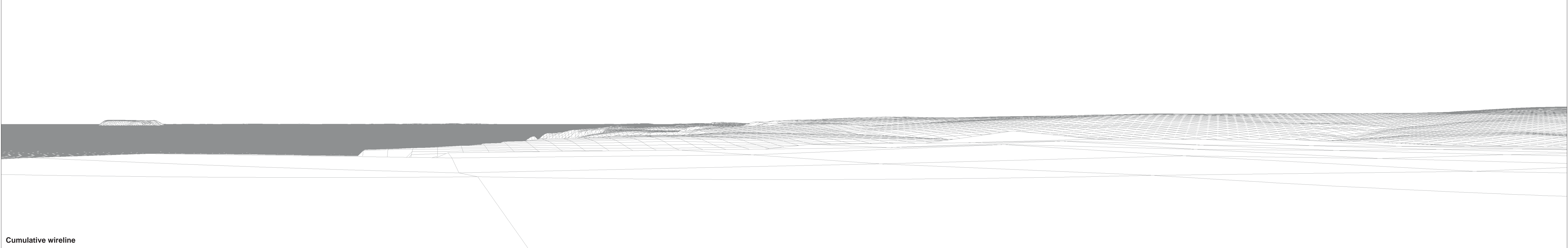




<b>OS reference:</b> 221639 E 119416 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 158.00m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 290°		<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 53.93 km		<b>Date and time:</b> 29/11/2022, 11:14:40

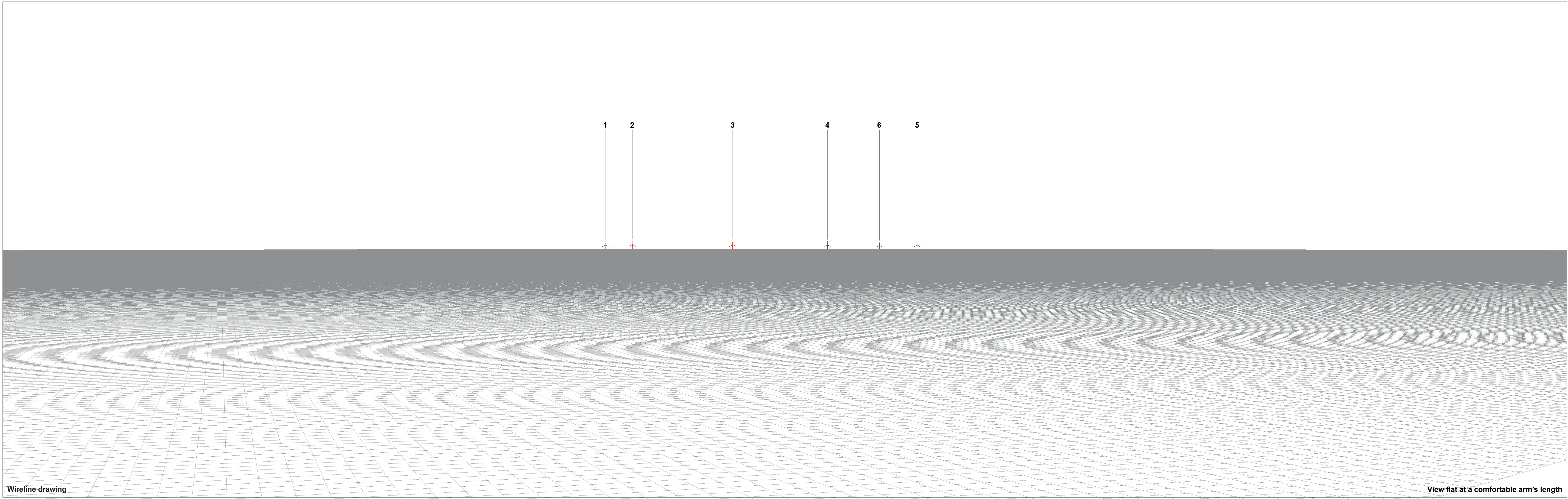
**Figure: 19:34c  
Embury Beacon**





<b>OS reference:</b> 221639 E 119416 N	<b>Horizontal field of view:</b> 90° (cylindrical projection)	<b>Camera:</b> Canon EOS 6D	<b>Figure: 19:34d</b> <b>Embury Beacon</b>
<b>Eye level:</b> 158.00m AOD	<b>Principal distance:</b> 522 mm	<b>Lens:</b> EF50mm f/1.4 USM	
<b>Direction of view:</b> 20°		<b>Camera height:</b> 1.5 m AGL	
<b>Nearest turbine:</b> 53.93 km		<b>Date and time:</b> 29/11/2022, 11:14:40	





Wireline drawing

View flat at a comfortable arm's length

<b>OS reference:</b> 221639 E 119416 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D
<b>Eye level:</b> 158.00m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM
<b>Direction of view:</b> 290°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL
<b>Nearest turbine:</b> 53.93 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 29/11/2022, 11:14:40

Figure: 19:34e  
Embury Beacon





Photomontage

View flat at a comfortable arm's length

<b>OS reference:</b> 221639 E 119416 N	<b>Horizontal field of view:</b> 53.5° (planar projection)	<b>Camera:</b> Canon EOS 6D	<b>Figure: 19:34f</b> <b>Embury Beacon</b>
<b>Eye level:</b> 158.00m AOD	<b>Principal distance:</b> 812.5 mm	<b>Lens:</b> EF50mm f/1.4 USM	
<b>Direction of view:</b> 290°	<b>Paper size:</b> 841 x 297 mm (half A1)	<b>Camera height:</b> 1.5 m AGL	
<b>Nearest turbine:</b> 53.93 km	<b>Correct printed image size:</b> 820 x 260 mm	<b>Date and time:</b> 29/11/2022, 11:14:40	