



LLYR

LLYR FLOATING OFFSHORE WIND PROJECT

Llŷr 1 Floating Offshore Wind Farm

Environmental Statement

Volume 3: Chapter 23 – Seascape, Landscape and Visual

August 2024





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Acronyms and abbreviations

Acronym or Abbreviation	Definition	Acronym or Abbreviation	Definition
CAA	Civil Aviation Authority	NLCA	National Landscape Character Area
cd	Candela	NMCA	National Marine Character Area
DTM	Digital Terrain Model	OS	Ordnance Survey
EEA	European Economic Area	PCC	Pembrokeshire County Council
ELC	European Landscape Convention	PCNP	Pembrokeshire Coast National Park
ES	Environmental Statement	PPW	Planning Policy Wales
GLVIA	Guidelines for Landscape and Visual Impact Assessment	RHPG	Registered Historic Park and Garden
HAT	Highest Astronomical Tide	SCA	Seascape Character Area
LCA	Landscape Character Area	SLVIA	Seascape, Landscape and Visual Impact Assessment
LDP	Local Development Plan	TAN	Technical Advice Note
LVIA	Landscape and Visual Assessment	WTG	Wind Turbine Generator
MCA	Marine Character Area	ZoI	Zone of influence
MLT	Marine Licensing Team	ZTV	Zone of Theoretical Visibility

Glossary of project terms

Term	Definition
The Applicant	The developer of the Project, Llŷr Floating Wind Limited.
Array	All wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure within the Array Area, as defined, when considered collectively, excluding the offshore export cable(s).
Array Area	The area within which the wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure will be located.
Floventis Energy	A joint venture company between Cierco Ltd and SBM Offshore Ltd of which Llŷr Floating Wind Limited is a wholly owned subsidiary.
Landfall	The location where the offshore export cable(s) from the Array Area, as defined, are brought onshore and connected to the onshore export cables (as defined) via the transition joint bays (TJB).
Llŷr 1	The proposed Project, for which the Applicant is applying for Section 36 and Marine Licence consents. Including all offshore and onshore infrastructure and activities, and all project phases.
Marine Licence	A licence required under the Marine and Coastal Access Act 2009 for marine works which is administered by Natural Resources Wales (NRW) Marine Licensing Team (MLT) on behalf of the Welsh Ministers.
Offshore Development Area	The footprint of the offshore infrastructure and associated temporary works, comprised of the Array Area and the Offshore Export Cable



Term	Definition
	Corridor, as defined, that forms the offshore boundary for the S36 Consent and Marine Licence application.
Offshore Export Cable	The cable(s) that transmit electricity produced by the WTGs to landfall.
Offshore Export Cable Corridor (OfECC)	The area within which the offshore export cable circuit(s) will be located, from the Array Area to the Landfall.
Onshore Development Area	The footprint of the onshore infrastructure and associated temporary works, comprised of the Onshore Export Cable Corridor and the Onshore Substation, as defined, and including new access routes and visibility splays, that forms the onshore boundary for the planning application.
Onshore Export Cable(s)	The cable(s) that transmit electricity from the landfall to the onshore substation.
Onshore Export Cable Corridor (OnECC)	The area within which the onshore export cable circuit(s) will be located.
proposed Project	All aspects of the Llŷr 1 development (i.e. the onshore and offshore components).
Onshore Substation	Located within the Onshore Development Area, converts the electricity exported from the turbines at 66/132kV into a higher 400 kV voltage electricity acceptable for the National Grid point of connection at Pembrokeshire Power Station.
Section 36 consent	Consent to construct and operate an offshore generating station, under Section 36 (S.36) of the Electricity Act 1989. This includes deemed planning permission for onshore works.



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23. SEASCAPE, LANDSCAPE AND VISUAL

23.1 Introduction

1. Llŷr Floating Wind Ltd (hereafter the Applicant) is proposing to develop the Llŷr 1 Floating Offshore Wind Farm (hereafter referred to as the proposed Project), located approximately 35 km off the coast of Pembrokeshire in the Celtic Sea.
2. The proposed Project is a test and demonstration wind farm development, comprising up to 10 wind turbine generators (WTGs) and associated infrastructure. The proposed Project will make landfall at Freshwater West before connecting into the national grid network at Pembroke Dock power station.
3. The Applicant is seeking a Section 36 consent and Marine Licence for the offshore components and deemed planning permission as part of the Section 36 consent for the onshore components of the proposed Project. This chapter forms part of the Environmental Statement (ES) which is submitted in support of those consent applications.
4. This chapter describes the potential impacts and effects of the proposed Project on seascape and landscape character and visual amenity during the construction, operation and maintenance and decommissioning phases, and includes mitigation and good practice measures to avoid or reduce impacts.
5. **Section 23.10** of this ES chapter provides a summary of the impact assessment undertaken and any residual significant effects on seascape and landscape character and visual amenity following consideration of any mitigation measures.
6. The assessment presented in this chapter should be read in conjunction with the following linked and supporting chapters:
 - **Chapter 04: Description of the Proposed Project** provides further details of the project design parameters.
 - **Chapter 05: EIA Methodology** - provides details of the general framework and approach to the EIA.
7. Additional information to support the assessment includes:
 - **Appendix 23A - Seascape, Landscape and Visual Assessment Methodology**
 - **Appendix 23B – SLVIA Preliminary Assessment**
 - **Appendix 23C – SLVIA Detailed Assessment**
 - **Appendix 23D – Night-time Visual Assessment**
 - **Appendix 23E – SLVIA Cumulative Assessment**
8. The assessment has been undertaken by AECOM Chartered Landscape Architects. Further details of the Project Team’s competency are provided in **Appendix 1A – Statement of Competence**.

23.2 Legislation, Policy and Guidance

9. The following sections identify specific legislation, policy and guidance that is applicable to the assessment of seascape and landscape character and visual amenity. Further detail on the wider legislation, policy and guidance relevant to this ES is provided in **Chapter 02: Regulatory and Planning Policy Context**.



23.2.1. *Legislation*

10. The legislation that is applicable to the assessment of seascape and landscape character and visual amenity is summarised below.
 - The European Landscape Convention (ELC) focuses specifically on the importance of integration of landscape issues into areas of policy, to promote protection, management and planning of all landscapes in Europe. The ELC defines landscape as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and / or human factors’. The ELC considers landscape as a whole (land or marine), from urban to rural areas, and whether special or degraded. The ELC was signed by the UK Government in 2006 and became binding from the 1st of March 2007.
 - The National Parks and Access to the Countryside Act 1949 provided the basis for establishment of National Parks. The statutory purposes of National Park designation are:
 - Conservation and enhancement: “to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Parks.”
 - Understanding and enjoyment: “to promote opportunities for the understanding and enjoyment of the special qualities (of the Parks) by the public.”
 - The Environment Act 1995, Section 66, places a duty on National Park Authorities to prepare a Management Plan for the delivery of National Park purposes.

23.2.2. *National Planning Policy*

11. The national planning policy that is applicable and/or considered relevant to the assessment of seascape and landscape character and visual amenity is summarised in **Table 23-1**, below.

Table 23-1. A summary of national planning policy relevant to seascape, landscape and visual

Summary of policy	How and where it is considered in the chapter
Although not directly applicable to the proposed Project, National Policy Statement for Energy (EN-1) is considered relevant as it relates to energy generation including offshore wind farms. EN-1 identifies that development of new energy infrastructure is likely to result in negative effects on landscape and visual amenity. It therefore advises on the need to undertake a landscape and visual assessment, highlighting current good practice guidance and the broad scope for assessments and design mitigation.	This chapter and supporting appendices provide an assessment of potential impacts on seascape, landscape and visual amenity, undertaken in accordance with good practice guidance.
National Policy Statement for Renewable Energy Infrastructure (EN-3) highlights the importance of good design to help mitigate adverse landscape and visual effects. In relation to offshore development, it highlights the need to consider effects on seascape character.	As set out in Section 23.7 , seascape, landscape and visual considerations have helped to inform the siting and design of the proposed Project. As indicated above, potential effects on seascape character resulting from the proposed Project are considered within this chapter.
Future Wales: The National Plan 2040 sets out the need for renewable energy developments to	This chapter and supporting appendices provide an assessment of potential impacts



Summary of policy	How and where it is considered in the chapter
demonstrate that they will not have unacceptable impact on the environment, including landscapes and visual amenity of communities and dwellings.	on seascape, landscape and visual, undertaken in accordance with good practice guidance.
Planning Policy Wales (PPW) (Edition 12, February 2024) indicates that the landscapes of Wales are valued and requires local authorities to protect and enhance the special characteristics of landscapes, whilst paying due regard to the social, economic, environmental and cultural benefits they provide, and to their role in creating valued places.	This chapter and supporting appendices provide an assessment of potential impacts on landscape character, including identified special qualities and key characteristics and sense of place.
PPW Technical Advice Note (TAN) 12 provides advice on how developments should promote sustainability through good design. Specifically, in relation to landscape, it states <i>“appraisal of the landscape should focus on its quality in terms of geology and geomorphology, vegetation and habitats, visual and sensory quality and historic and cultural quality.”</i>	This chapter and supporting appendices provide an assessment of potential impacts on landscape character, taking account of a range of key characteristics informed by consideration and understanding of the aspects outlined in TAN 12.
PPW TAN 24 provides advice on development in relation to the historic environment. Specifically, in relation to landscape it sets out the need for developers to understand the significance and assess the potential impact upon Registered Historic Parks and Gardens (RHPG).	This chapter and supporting appendices provide an assessment of potential impacts on identified landscape designations, including consideration of RHPG. Appendix 23B – SLVIA Preliminary Assessment provides a preliminary assessment of potential impacts on each RHPG found within the study area, identifying no potential for significant effects.
Welsh National Marine Plan Policy SOC_06 sets out requirements to demonstrate how potential impacts on the purpose and special qualities of National Parks have been considered and advocates the following hierarchy of approach: avoid, minimise, mitigate.	This chapter and supporting appendices provide an assessment of potential impacts on the Pembrokeshire Coast National Park (PCNP). A detailed assessment of potential effects on each of the relevant special qualities of PCNP is provided in Appendix 23C – SLVIA Detailed Assessment , and the approach to mitigation is set out in Section 23.7 of this chapter.
Wales National Marine Plan Policy SOC_07 sets out requirements to demonstrate how potential impacts on seascapes have been considered, applying the avoid, minimise, mitigate hierarchy of approach.	This chapter and supporting appendices provide an assessment of potential impacts on seascape character. A detailed assessment of potential effects on relevant seascape character units is provided in Appendix 23C – SLVIA Detailed Assessment , and the approach to mitigation is set out in Section 23.7 of this chapter.



Summary of policy	How and where it is considered in the chapter
<p>Marine Planning Policy Statement (2011) outlines requirements to consider the existing seascape character, including quality, value and capacity to accommodate change. It also highlights the need to consider the statutory purposes of nearby nationally designated areas and consider design as an aid to mitigation.</p>	<p>This chapter and supporting appendices provide an assessment of potential impacts on seascape character and the PCNP. A detailed assessment of potential effects on relevant seascape character units and the special qualities of the PCNP are provided in Appendix 23C – SLVIA Detailed Assessment, and the approach to mitigation is set out in Section 23.7 of this chapter.</p>

23.2.3. Local Planning Policy

- 12. The local planning policy that is applicable to the assessment of seascape and landscape character and visual amenity is summarised in **Table 23-2**, below.

Table 23-2. A summary of local planning policy relevant to seascape, landscape and visual

Summary of policy	How and where it is considered in the chapter
<p>Pembrokeshire County Council (PCC) Local Development Plan (LDP) policy GN 1: provides criteria against which development will be considered, highlighting that development should be <i>“compatible with the capacity and character of the site and the area within which it is located”</i> and should not <i>“result in a significant detrimental impact on local amenity in terms of visual impact”</i> or <i>“adversely affect landscape character, quality or diversity, including the special qualities of the Pembrokeshire Coast National Park and neighbouring authorities”</i>.</p>	<p>This chapter and supporting appendices provide an assessment of potential impacts on seascape, landscape and visual amenity, undertaken in accordance with good practice guidance.</p>
<p>PCC LDP Supplementary Guidance: Landscape Character Assessment sets out the key characteristics of the landscapes of Pembrokeshire, defining a series of character areas, and is intended to support decision making in relation to policy GN 1.</p>	<p>The LDP Supplementary Guidance has been reviewed and used to help inform establishment of the landscape character baseline, including identification of landscape character units and associated key characteristics. A baseline description of relevant landscape character units is provided in Appendix 23C – SLVIA Detailed Assessment.</p>
<p>Pembrokeshire Coast National Park Local Development Plan 2 (LDP2) Policy 8 sets out protection for the special qualities of the PCNP, including the sense of remoteness and tranquillity, pattern and diversity of the landscape, and the unsettled coast. This policy also highlights the importance of potential</p>	<p>This chapter and supporting appendices provide an assessment of potential impacts on the PCNP. A detailed assessment of potential effects on each of the relevant special qualities of PCNP is provided in Appendix 23C – SLVIA Detailed Assessment, and an assessment of potential cumulative</p>



Summary of policy	How and where it is considered in the chapter
cumulative impacts in relation to the special qualities.	effects is provided in Appendix 23E – SLVIA Cumulative Assessment .
PCNP LDP2 Policy 9 identifies that development with significant levels of external lighting will only be permitted where there are <i>“no unacceptable adverse effects on the character of the area, local residents, vehicle users, pedestrians, biodiversity and the visibility of the night sky”</i> .	This chapter considered potential night-time seascape, landscape and visual effects resulting from lighting included within the proposed Project. Appendix 23C – SLVIA Detailed Assessment provides a detailed assessment of potential effects on seascape and landscape character, and Appendix 23D – Night-time Visual Assessment provides an assessment of potential night-time visual effects based on agreed representative viewpoint locations.
PCNP LDP2 Policy 14 states that <i>“Development will not be permitted where this will have an unacceptable adverse effect on the qualities and special landscape and seascape character of the Pembrokeshire Coast National Park including locally distinctive characteristics”</i> .	This chapter and supporting appendices provide an assessment of potential impacts on the PCNP. A detailed assessment of potential effects on each of the relevant special qualities of PCNP is provided in Appendix 23C – SLVIA Detailed Assessment .
PCNP LDP2 Policy 33 sets out support for renewable energy development provided it meets a set of criteria including no unacceptable adverse effects on visual amenity, landscape character, the special qualities of the national park and the undeveloped coast. It also sets out the need for development to demonstrate that measures have been taken to minimise impacts on the landscape and result in no unacceptable impacts on residential amenity.	This chapter provides an overview of potential effects on the special qualities of the PCNP, seascape and landscape character and visual amenity. A detailed assessment is provided in Appendix 23C – SLVIA Detailed Assessment and details of mitigation measures are set out in Section 23.7 of this chapter.
PCNP Supplementary Planning Guidance documents relevant to SLVIA include Landscape Character; Renewable Energy; Cumulative Impact of Wind Turbines on Landscape and Visual Amenity; and Seascape Character Assessment.	This chapter and supporting appendices provide an assessment of potential impacts on seascape, landscape and visual, undertaken in accordance with good practice guidance. Appendix 23C – SLVIA Detailed Assessment provides a detailed assessment on relevant receptors, and Appendix 23E – SLVIA Cumulative Assessment provides an assessment of potential cumulative effects.
PCNP Authority Management Plan 2020-2024 Policy L1 seeks to protect and enhance landscape and seascape character.	This chapter provides an overview of potential effects on seascape and landscape character. A detailed assessment is provided in Appendix 23C – SLVIA Detailed Assessment and details of mitigation measures are set out in Section 23.7 of this chapter.
PCNP Authority Management Plan 2020-2024 Policy L2 recognises the need to develop	Details of aviation lighting on proposed WTGs and potential mitigation measures and night-



Summary of policy	How and where it is considered in the chapter
guidance in relation to lighting for development and seeks to promote good practice in lighting design.	time visual effects are provided in Appendix 23D – Night-time Visual Assessment.

23.2.4. *Guidance*

13. **Table 23-3** provides a summary of key guidance relevant to the assessment of seascape and landscape character and visual amenity.

Table 23-3. A summary of guidance relevant to seascape, landscape and visual

Summary of Guidance	How and where it is considered in the chapter
<i>Guidelines for Landscape and Visual Impact Assessment (GLVIA)</i> , Third Edition, Landscape Institute and Institute of Environmental Management and Assessment, 2013 provides guidance on approach and methodology for Seascale, Landscape and Visual Impact Assessment (SLVIA).	As detailed in Appendix 23A – SLVIA Methodology , GLVIA forms the basis of the approach and methodology adopted for the SLVIA.
<i>Assessing landscape value outside national designations</i> , Technical Guidance Note 02/21, Landscape Institute 2021 provides supplementary guidance to GLVIA specific to identification of landscape value.	As detailed in Appendix 23A – SLVIA Methodology , this technical guidance note has helped to inform determination of seascape and landscape value.
<i>Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report</i> , Department of Trade and Industry, 2005 provides advice on assessment of seascape and visual impact in relation to offshore wind farms.	Relevant sections not superseded by more recent guidance have helped inform the approach to cumulative assessment. Details of the cumulative methodology are set out in Appendix 23A – SLVIA Methodology.
<i>Seascape and visual sensitivity to offshore wind farms in Wales</i> , Stage 1 to 3, NRW 2019 consists of 3 separate but related documents. Stage 1 provides strategic level guidance relating to turbine height and distance from national landscape designations. Stage 2 provides high level guidance on siting offshore wind farms. Stage 3 provides strategic level guidance relating to seascape sensitivity.	This strategic level guidance has been reviewed and considered as part of siting and design of the indicative WTG layout adopted for the purposes of this SLVIA.
<i>Using LANDMAP in Landscape and Visual Impact Assessments</i> , NRW 2016, provides guidance on use of LANDMAP data in the assessment process.	LANDMAP data has helped to inform an understanding of the existing landscape and contributed towards the landscape character baseline descriptions provided in Appendix 23C – SLVIA Detailed Assessment.
<i>Siting and Designing Wind farms in the Landscape</i> , NatureScot 2017, sets out a number of principles to help guide design of wind farms.	This guidance has been taken into consideration, where applicable to offshore wind farms, as part of siting and design of the



Summary of Guidance	How and where it is considered in the chapter
	indicative WTG layout adopted for the purposes of this SLVIA.
<i>Assessing the Cumulative Impact of Onshore Wind Energy Developments</i> , NatureScot 2021, provides guidance relating to assessment of landscape and visual cumulative effects.	This guidance has informed the approach to cumulative assessment as outlined in Section 23.4.1 and detailed in Appendix 23A – SLVIA Methodology .
<i>Visual Representation of Wind Farms</i> , NatureScot 2017, provides guidance relating to production of Zone of Theoretical Visibility (ZTV) diagrams and visualisations for wind farm development.	This guidance has informed the approach to production of many of the graphics and figures which accompany this chapter, including ZTVs (Volume 5: Figures 23.8 to 23.10) and visualisations (Volume 5: Figures VP 01.1 to VP 15.3).

23.3 Stakeholder Engagement and Consultation

- 14. Consultation with statutory and non-statutory organisations is a key element of the EIA process. Consultation with regards to seascape, landscape and visual has been undertaken to inform the approach to, and scope of, the assessment.
- 15. Stakeholders for the proposed Project include statutory consultees, landowners, local communities and other sea users. In addition to the statutory consultation process, there has been ongoing engagement with statutory and non-statutory consultees to steer the development of the proposed Project and this is detailed in **Table 23-4**.

23.3.5. Summary of Stakeholder Consultations

Table 23-4. Summary of the key issues raised by consultees and how each issue was addressed

Consultee	Consultation type and date	Comment raised	How issue has been addressed and location of response in chapter
Scoping			
NRW	Response to request for Scoping Opinion, 23 May 2022	Account should be taken of NRW’s evidence reports on Offshore Wind Development, including <i>Seascape and Visual Sensitivity to Offshore Windfarms in Wales</i> .	These strategic level documents have been reviewed and considered as part of the SLVIA process.
NRW	Response to request for Scoping Opinion, 23 May 2022	A night-time assessment and visualisations should be undertaken. Suggested viewpoints: Martins Haven; Kete; and Freshwater West.	An assessment of potential visual effects of aviation lighting is provided in Appendix 23D – Night-time Visual Assessment and is based on viewpoints at Martin’s Haven, Kete and Freshwater



Consultee	Consultation type and date	Comment raised	How issue has been addressed and location of response in chapter
			West, as recommended.
NRW	Response to request for Scoping Opinion, 23 May 2022	Seascape Character Areas (SCA) should be considered in the SLVIA, including those which are entirely offshore.	All SCA identified within the study area are considered within the preliminary assessment in Appendix 23B – SLVIA Preliminary Assessment and those with potential for significant effects considered in Appendix 23C – SLVIA Detailed Assessment .
NRW	Response to request for Scoping Opinion, 23 May 2022	Suggest additional viewpoints from Skokholm Island, West Angle Bay, Hooper’s Point and St Govan’s Head.	The visual assessment includes viewpoints at each suggested location with the exception of West Angle Bay. This location was initially considered, but later scoped out due to being outside the ZTV.
NRW	Response to request for Scoping Opinion, 23 May 2022	Assessment of sequential visual impacts on sections of the Wales Coast Path will also be required.	Appendix 23C – SLVIA Detailed Assessment provides an assessment of potential visual effects on a series of viewpoints and relevant sections of the Pembrokeshire Coast Path.
NRW	Response to request for Scoping Opinion, 23 May 2022	Recommend inclusion of photomontages from more than 5 of the representative viewpoints.	Volume 5: Figures VP 01.2 to VP 15.3 provide visualisations for each representative viewpoint, including photomontages for 13 locations.



Consultee	Consultation type and date	Comment raised	How issue has been addressed and location of response in chapter
NRW	Response to request for Scoping Opinion, 23 May 2022	Rhoscrowther Wind Farm, Project Erebus and Project Valorous are likely to result in cumulative effects.	A shortlist of projects included in the cumulative assessment is provided in Table 23-10. Project include Erebus and Valorous, but not Rhoscrowther Wind Farm which has been refused consent and therefore no longer relevant.
PCNP Authority	Response to request for Scoping Opinion, 18 May 2022	Highlighted the relevance of policy SOC_06 of the Welsh National Marine Plan, and the potential requirement for mitigation.	Policy SOC_06 of the Welsh National Marine Plan considered as part of assessment process. A detailed assessment of potential effects on each of the relevant special qualities of PCNP is provided in Appendix 23C – SLVIA Detailed Assessment , and the approach to mitigation is set out in Section 23.7 of this chapter.
Pre-application			
NRW	Letter of 15 May 2023	ZTVs should be provided on OS 1:50k or 1:25k based mapping and based on OS Terrain 5 data.	Volume 5: Figures 23.8b, 23.9b and 23.10b provide ZTVs presented on OS 1:50k mapping. All ZTVs are based on OS Terrain 5 data.
NRW	Letter of 15 May 2023	ZTV and photomontages should reflect the proposed Project at Highest Astronomical Tide (HAT).	As set out in Appendix 23A – SLVIA Methodology , the ZTV and visualisations which accompany this chapter have been prepared based on appearance of the proposed Project during HAT.



Consultee	Consultation type and date	Comment raised	How issue has been addressed and location of response in chapter
NRW	Letter of 15 May 2023	Additional ZTVs indicating the following should be submitted with the application: number of turbines visible; sectional analysis of Pembrokeshire Coast Path; and horizontal field of view (including cumulative with Erebus).	<p>Volume 5: Figure 23.8 provides a ZTV indicating the number of WTGs theoretically visible.</p> <p>Sectional analysis of potential visibility and effects on the Pembroke Coast Path is provided in Appendix 23C – SLVIA Detailed Assessment.</p> <p>Details of the horizontal field of view occupied by the proposed Project and cumulative projects for each viewpoint are provided in Appendix 23C – SLVIA Detailed Assessment and 23E – SLVIA Cumulative Assessment.</p>
NRW	Letter of 15 May 2023	Additional viewpoints requested from Ynys Bŷr Caldey Island, coast path at Lindsway Bay, and to represent users of the sea.	The visual assessment includes viewpoints on Ynys Bŷr Caldey Island (VP 13), the coast path at Lindsway Bay (VP 07) and a location within the sea (VP 03).
NRW	Letter of 15 May 2023	Photomontages should be provided for all assessment viewpoints and should include the consented Erebus development.	<p>Volume 5: Figures VP 01.2 to VP 15.3 provide visualisations for each assessment viewpoint.</p> <p>Photomontages are provided from each location, with the exception of VP 03 Pembroke-Rosslare Ferry and VP 15 Lundy Island.</p> <p>The consented Erebus scheme has not been included in the</p>



Consultee	Consultation type and date	Comment raised	How issue has been addressed and location of response in chapter
			photomontages as it is not part of the existing baseline, there is no certainty it would be constructed, and the final design is not yet known. However, cumulative wirelines indicating Erebus and other existing and proposed wind farms are provided for each viewpoint in line with good practice guidance.
NRW	Letter of 15 May 2023	Broad Haven South Car Park may be suitable as an additional night-time viewpoint.	Desk based ZTV modelling, and site survey have confirmed no potential visibility of the proposed Project from this location and therefore it has been scoped out of assessment.
PCNP Authority	Meeting on 17 July 2023	Important to be clear on the basis of the assessment and any assumptions made in relation to siting and design.	Table 23-6 provides details of the design scenarios which form the basis of the SLVIA.

23.4 Approach to Assessment

23.4.1. Assessment Methodology

- 16. **Chapter 05: EIA Approach and Methodology** provides a summary of the general impact assessment methodology applied in this ES. The following sections provide an overview of the specific methodology used to assess the potential impacts on seascape and landscape character and visual amenity which are aligned to GLVIA and differ slightly from that set out in **Chapter 05: EIA Approach and Methodology**. A more detailed description of the SLVIA methodology is provided in **Appendix 23A – SLVIA Methodology**.
- 17. The significance of potential effects has been evaluated using a systematic approach together with application of professional judgement. The assessment is based upon the identification of the importance/value of receptors and their susceptibility and sensitivity to the proposed Project together with the predicted magnitude of the potential impact.
- 18. For clarity and in accordance with good practice, the assessment of potential effects on landscape character and visual amenity, although closely related, are undertaken separately.



Preliminary Assessment

19. The initial stage of assessment involved a process of desk and field-based survey to refine the scope of the detailed assessment in order to ensure a proportionate approach, focused on potential significant effects. This process involved preparation and analysis of ZTV calculations to determine the extent of potential visibility of the proposed Project. Those receptors located fully or predominantly outside the extent of the ZTV were then scoped out of the assessment. The remaining receptors were then subject to a preliminary assessment in order to identify those with the potential for significant effects and therefore taken forward to detailed assessment. An explanation and reasoned justification are provided for any receptors scoped out at the preliminary assessment stage.

23.4.2. Significance Criteria

20. The detailed assessment first establishes and describes the existing baseline conditions and value of each identified seascape, landscape and visual receptor before making judgements on the sensitivity, magnitude of impact and significance of effect resulting from the proposed Project.

Sensitivity of Receptor

Seascape and Landscape

21. The sensitivity of a seascape or landscape receptor is a combination of the value of the seascape/landscape (undertaken as part of the baseline study) and the susceptibility to change of the receptor to the specific type of development being assessed.
22. Seascape and landscape value is frequently informed with reference to designations, determined by statutory bodies and planning agencies. However, a range of other factors such as local scarcity, condition and quality are also considered.
23. Seascape and landscape susceptibility relates to the ability of a particular landscape to accommodate the proposed Project and is appraised through consideration of the baseline characteristics, and in particular, the scale or complexity of a given seascape/landscape.
24. The overall sensitivity assessment is made by employing professional judgement to combine and analyse the identified value and susceptibility, guided by defined criteria with overall levels given from very high, high, medium, low and negligible.

Visual

25. Sensitivity of visual receptors is defined through appraisal of the viewing expectation, or value placed on the view, as identified as part of the baseline study, and its susceptibility to change.
26. Value of the view is often informed by the appearance on Ordnance Survey or tourist maps and in guidebooks, literature or art or identification in policy. Value can also be indicated by the provision of parking or services, signage, and interpretation. The nature and composition of the view and its scenic quality is also an indicator.
27. The susceptibility of visual receptors is a function of the occupation or activity of people experiencing the view and the extent to which their attention or interest is focussed on the view.
28. The overall sensitivity assessment of the visual receptor is determined by employing professional judgement to combine and analyse the identified value and susceptibility and described on a scale of very high, high, medium, low and negligible.



Magnitude of Impact

Seascape and Landscape

29. Magnitude of seascape/landscape impact refers to the extent to which the proposed Project would alter the existing characteristics of the seascape/landscape. It is an expression of the size or scale of change, the geographical extent of the area influenced, distance from the receptor and the duration and reversibility. The overall magnitude of change is determined by combining the above considerations using evidence and professional judgement, guided by defined criteria with levels described as being large, medium, small or negligible. Weather can also have a strong influence on the impression of seascape/landscape change. However, the assessment is undertaken on the basis of excellent visibility (>40 km) in order to represent the worst case scenario.

Visual

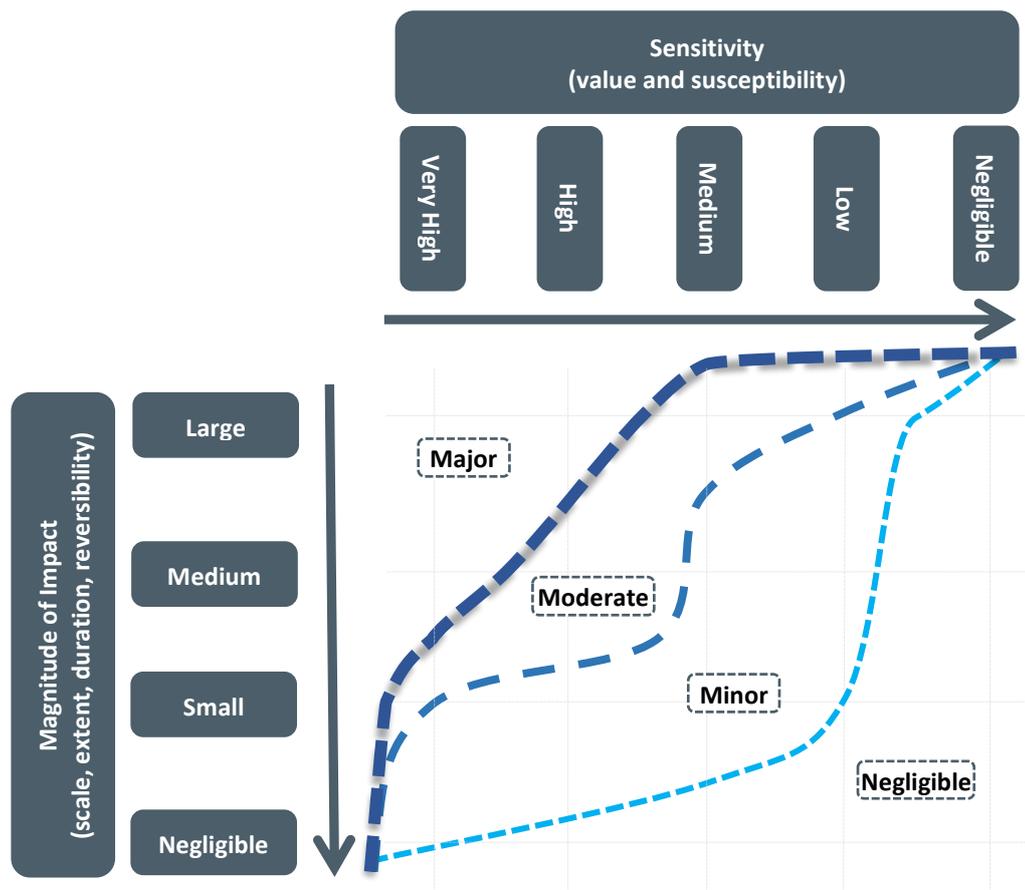
30. Magnitude of visual impact relates to the extent to which the proposed Project would alter the existing view and is an expression of the size or scale of change in the view, the geographical extent of the area influenced, the angle of view, distance from the receptor, potential number of viewers and the duration and reversibility. The overall magnitude of visual change is determined by combining the above considerations using evidence and professional judgement, guided by defined criteria, with levels described as being large, medium, small or negligible. As for seascape/landscape, weather can have a strong influence on impression of visual change. The assessment takes a worst case approach based on excellent visibility.

Significance of Effect

31. Determination of the significance of seascape, landscape and visual effects has been undertaken by employing professional judgement and experience to combine and analyse the magnitude of impact against the identified sensitivity of the receptor.
32. The seascape and landscape assessment takes account of direct and indirect change on existing key physical and perceptual characteristics and evaluate the extent to which these would be lost or modified, in the context of their importance in determining the existing baseline character.
33. The visual assessment considers likely changes to the visual composition, including the extent to which new features would distract or screen existing elements in the view or disrupt the scale, structure, or focus of the existing view.
34. **Diagram 23-1** provides an indication of how sensitivity and magnitude are considered together to inform the determination of the significance of effect.



Diagram 23-1. Indicative approach to determine significance of effect



35. Levels of effect significance are described on a scale ranging from major to negligible. Assignment of significance is carried out with consideration of embedded mitigation measures relevant to seascape, landscape and visual as set out in **Section 23.7**. For the purposes of this assessment, moderate and major levels of effect are defined as significant, and where relevant additional mitigation measures may be required, whilst negligible or minor effects are defined as not significant.

Night-time Effects

36. The proposed Project includes medium intensity aviation obstruction lighting on the nacelle of each of the proposed WTGs, in line with Civil Aviation Authority (CAA) requirements. Aviation lighting has the potential to contribute to seascape, landscape and visual effects and as such is considered in the SLVIA. **Appendix 23D – Night-time Visual Assessment** provides background information related to the requirements for aviation lighting, an overview of the approach taken for the proposed Project.

37. Potential impacts related to identified dark sky characteristics are considered as part of the overall judgements of potential effects of the proposed Project on seascape and landscape character, including in relation to the PCNP. A detailed assessment of potential visual effects on identified night-time viewpoints is provided in **Appendix 23D – Night-time Visual Assessment**.



Cumulative Effects

38. The assessment of cumulative effects follows a similar process to that described above, first identifying and describing the baseline, followed by an assessment of the magnitude of change and significance of effect.
39. The cumulative baseline includes other onshore and offshore wind farms that are either operational, consented/under construction or for which a consent application has been submitted and is not yet determined or is under appeal. Wind farms at EIA Scoping or pre-application stages are not generally included unless specifically requested by consultees as they are subject to change during the design process and as such are regarded as not sufficiently finalised to contribute to the assessment of cumulative effects.
40. The cumulative assessment focuses on the potential change and impacts resulting from the addition of the proposed Project to that experienced in the identified cumulative scenarios. However, an overview of potential total cumulative impact of the proposed Project in combination with the identified cumulative projects is also provided.

23.4.3. Study Area

41. The Study Area for the assessment of seascape, landscape and visual impacts has been defined on the basis of the maximum parameters of the proposed Project, mapping and desk-based research and modelling, professional judgement and good practice guidance, including *Visual Representation of Wind Farms*.
42. The extent of the Study Area, as shown on **Volume 5: Figure 23.1**, has been defined as 45 km from the outermost proposed Wind Turbine Generators (WTGs). It is acknowledged that there may be potential visibility of the proposed Project beyond 45 km in certain conditions. However, the Study Area extent is considered to be the outer limit of potential for significant seascape, landscape and visual effects. The extent of the Study Area has been agreed in consultation with NRW and PCNP Authority.

23.4.4. Data Sources

Site Specific Surveys

43. In order to provide site specific information on which to base the impact assessment for seascape and landscape character and visual amenity, site specific surveys were conducted. This involved travel throughout the study area and immediate surroundings, including visiting each of the identified landscape and land based seascape character areas. Offshore seascape areas were surveyed from the nearest section of accessible coast. The majority of assessment viewpoints and associated visual receptors, with the exception of Lundy Island and the Pembroke-Rosslare Ferry, were visited and baseline photography captured. Lundy Island is located in excess of 56 km from the proposed Project. Effects on visitors to Lundy Island and users of the Pembroke-Rosslare Ferry are assessed but without an accompanying photographic visualisation, due to difficulties of capturing the view from a vessel at sea and limited value of an image at 56 km. Survey also included walking many of the sections of the Pembrokeshire Coast Path found within the study area and ZTV extent.
44. Site survey was undertaken both during the daytime and at night and has helped to identify and define seascape, landscape and visual receptors, review and verify the findings of desk-based study, refine baseline descriptions and inform consultation with stakeholders in order to agree the scope of the assessment and location of viewpoints.



Desk Study

45. A comprehensive desk-based review was undertaken to inform the baseline for the SLVIA. Key data sources used to inform the assessment include:
- Ordnance Survey (OS) mapping, and aerial photography;
 - OS Digital Terrain Model (DTM);
 - Relevant national, regional, and local planning policy and guidance;
 - Published citations and descriptions of landscape designations;
 - LANDMAP aspect area descriptions;
 - National and local landscape and seascape character descriptions; and
 - Strategic seascape and visual sensitivity assessment and guidance.

23.5 Baseline

46. The following sections provide an overview of the baseline environment relating to seascape and landscape character and visual amenity.

23.5.1. Existing Baseline

Landscape Designations

47. Landscapes can be recognised as of international, national, or local importance and designated through statute, development plans or other documents. The following landscape designations have been identified within the study area, as shown on **Volume 5: Figure 23.1:**
- Pembrokeshire Coast National Park (PCNP);
 - Four Registered Historic Parks and Gardens (RHPG):
 - Orielson;
 - Stackpole Court;
 - St Brides Castle; and
 - Trewarren.
 - Two Heritage Coasts:
 - Marloes and Dale; and
 - South Pembrokeshire.

48. Details of the initial scoping and preliminary assessment are provided in **Appendix 23B – SLVIA Preliminary Assessment** and a baseline description of the landscape character and/or special qualities of those landscape designations included within the detailed assessment is provided in **Appendix 23C – SLVIA Detailed Assessment**.

Seascape and Landscape Character

49. Seascape and landscape character can be defined and described at different levels of scale and detail. At the national level the study area for the Project is covered by the following broad landscape and coastal seascape character units, as shown on **Volume 5: Figures 23.2 and 23.4:**
- National Marine Character Areas (NMCA) and Marine Character Areas (MCA):
 - Milford Haven NMCA
 - South Pembrokeshire Coastal and Inshore Waters NMCA;



- West and North Pembrokeshire Coastal Waters and Islands NMCA;
 - Lundy and Outer Bristol Channel MCA; and
 - Bristol Channel Approaches MCA.
 - National Landscape Character Areas (NLCA):
 - Milford Haven NLCA;
 - South Pembrokeshire Coast NLCA; and
 - West and North Pembrokeshire Coast NLCA.
50. The national level character descriptions help to inform the landscape context of the study area but are considered too broad to act as the basis for defining the baseline for the assessment. The SLVIA has therefore been undertaken on the basis of the smaller scale local seascape and landscape units identified within the following publications, in combination with relevant LANDMAP aspect areas:
- Pembrokeshire Coast National Park Seascape Character Assessment;
 - North Devon and Exmoor Seascape Character Assessment;
 - Pembrokeshire Coast National Park Landscape Character Assessment; and
 - Pembrokeshire County Landscape Character Assessment, Consultation Draft.
51. Details of the initial scoping and preliminary assessment are provided in **Appendix 23B – SLVIA Preliminary Assessment** and a baseline description of each of the Landscape Character Areas (LCA) and Seascape Character Areas (SCA) included within the detailed assessment is provided in **Appendix 23C – SLVIA Detailed Assessment**. The locations of SCAs are shown in **Volume 5: Figure 23.3** and the LCAs in **Volume 5: Figure 23.5**. LANDMAP Visual and Sensory areas are shown in **Volume 5: Figure 23.6** and indication of existing night-time light sources provided in **Volume 5: Figure 23.7**.

Visual

52. Visual receptors with the potential to experience views of the offshore elements of the proposed Project are largely located along the Pembrokeshire coast and adjacent islands of Skomer and Skokholm.
53. The visual assessment is based on a series of representative viewpoints, selected in consultation with NRW, PCC and PCNP Authority, to provide a cross section of sensitive receptor types and locations within the study area. **Table 23-5**, below, provides details of the representative viewpoint locations, with a baseline description of each provided in **Appendix 23C – SLVIA Detailed Assessment**. The locations of the viewpoints are shown on **Volume 5: Figures 23.8** and **23.9**.

Table 23-5. Visual assessment viewpoint locations

Viewpoint reference	Location	Receptor type	Reason for inclusion
VP 01	Skomer Island	Recreational	Local high point, representative of views experienced by visitors to Skomer Island.
VP 02	Skokholm Island	Recreational	Adjacent to the lighthouse at the south of the island, representative of views experienced by visitors.



Viewpoint reference	Location	Receptor type	Reason for inclusion
VP 03	Pembroke to Rosslare Ferry	Recreational	Representative of views experienced from the Pembroke – Rosslare Ferry, and recreational water craft
VP 04	Marloes Beacon	Recreational and Residential	Local high point, representative of views from nearby recreational routes and the settlement of Marloes.
VP 05	Hooper's Point	Recreational	Representative of views from the Pembrokeshire Coast Path south of Marloes.
VP 06	St Ann's Head	Recreational and Residential	Southernmost point on the peninsula, representative of views from the Pembrokeshire Coast Path and adjacent residential properties.
VP 07	Lindsway Bay	Recreational	Representative of views from the Pembrokeshire Coast Path, north of Milford Haven.
VP 08	Castles Bay/ Sheep Island	Recreational	Representative of views from the Pembrokeshire Coast Path south of Angle.
VP 09	Freshwater West Beach	Recreational	Representative of views from the beach and the adjacent Pembrokeshire Coast Path.
VP 10	Castlemartin Range Trail	Recreational and Residential	Representative of views from inland locations on recreational routes (including Pembrokeshire Coast Path) and nearby residential properties.
VP 11	Elegug Stacks	Recreational	Representative of views from the south Pembrokeshire coast between Linney Head and St Govan's Head.
VP 12	St Govan's Head	Recreational	Representative of views from St Govan's Head and nearby Pembrokeshire Coast Path.
VP 13	Manorbier Beach	Recreational and Residential	Representative of views from the beach, adjacent coastline and nearby settlement.
VP 14	Caldey Island	Recreational	Elevated location, representative of open views from south coast of the island.
VP 15	Beacon Hill, Lundy Island	Recreational	Elevated location, selected to be representative of views from Lundy Island.

54. Details of night-time viewpoints are provided in **Appendix 23D – Night-time Visual Assessment** and the locations shown on **Volume 5: Figure 23.10**.

23.5.2. Future Baseline

55. This section considers any changes to the baseline conditions described above that might occur over the 30 year operational lifespan of the proposed Project, but in the absence of the proposed Project.
56. There is potential for a change to the seascape, landscape and visual baseline as a result of the introduction of offshore wind farms and other offshore development to the south and west



of the Pembrokeshire coast. Consent has been granted for Project Erebus; an offshore wind farm located approximately 35 km southwest of Pembrokeshire. A future baseline scenario including operational and consented wind energy schemes is considered as part of the cumulative assessment in **Section 23.11**.

57. It is understood that a number of other offshore wind farm developments are being considered within the Celtic Sea. A consent application has recently been submitted for White Cross Offshore Wind Farm, with a number of others currently at initial scoping and pre-applications phases. The Crown Estate announced the establishment of an offshore wind leasing round (Round 5) seeking to establish a new floating wind sector in the Celtic Sea off the coasts of South Wales and Southwest England. It is expected to be the first phase of commercial development of up to 4.5 GW in the Celtic Sea to be brought forward in the 2030s. In its Autumn Statement in November 2023, the UK Government confirmed its intention to unlock space for a further 12 GW of capacity in the Celtic Sea. Change to the seascape character is therefore likely. A future baseline scenario including application stage wind farms alongside those which are operational and consented is considered as part of the cumulative assessment in **Section 23.11**. A further scenario including select scoping stage wind farms alongside those in the above scenario is also considered as part of the cumulative assessment.
58. There is also potential for additional onshore development within the study area. The focus of this is likely to be in the area around Milford Haven which is already influenced by considerable industrial development. Future development is likely to be in part linked to the energy transition, with a move away from existing oil and gas towards more renewable sources and associated infrastructure. An application for an onshore wind farm (Dragon Energy Park) has recently been submitted and is considered as part of the cumulative baseline in **Section 23.11**.
59. It is anticipated that the nature and character of the wider study area, and particularly the areas within PCNP, would remain largely similar to that of the existing baseline.

23.6 Scope of the Assessment

60. An EIA Scoping Report for the proposed Project was submitted to NRW Marine Licensing Team (MLT) in April 2022. The Scoping Report was also shared with relevant consultees, inviting comment on the proposed approach adopted by the Applicant. A Scoping Opinion was provided to the Applicant by NRW MLT in July 2022. Based on the Scoping Opinion received, and further consultation undertaken, potential impacts on seascape and landscape character and visual amenity scoped into the assessment are listed below in **Table 23-6**. Impacts scoped out of the assessment are listed in **Section 23.6.1**.
61. As set out in **Section 23.4.1**, this assessment considers the design parameters of the proposed Project which are predicted to result in the greatest environmental impact, known as the 'realistic worst case scenario'. The realistic worst case scenario represents, for any given receptor and potential impact on that receptor, various options in the Design Envelope (as set out in **Chapter 04: Description of the Proposed Project**) that would result in the greatest potential for change to the receptor in question. Given that the realistic worst case scenario is based on the design option (or combination of options) that represents the greatest potential for change, confidence can be held that the development of any alternative options within the design parameters would give rise to effects no greater or worse than those included in this impact assessment.
62. Accordingly, the design scenarios identified in **Table 23-6** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group within the SLVIA Study Area. These scenarios have been selected from the details provided in **Chapter 04: Description of the Proposed Project**.



Table 23-6. Design scenario considered for the assessment

Potential impact	Design scenario	Justification
Construction		
Increased movement and activity within the array area and along the Offshore Export Cable Corridor (OfECC) with potential to affect perceptual aspects of seascape and landscape character and views.	Maximum extent of activity and number of vessels within the offshore array area and along the OfECC, as set out in Section 4.5.10 of Chapter 04: Description of the Proposed Project. The maximum duration over which works could occur.	Scale, extent and duration are factors which contribute to magnitude of change in relation to seascape, landscape and visual impacts and therefore considering the maximum scenarios for each of these aspects represents the likely worst case.
Operation and maintenance		
Potential impact on perceptual aspects of seascape and landscape character and on views resulting from introduction of proposed WTG and associated aviation lighting.	Maximum height (325.5 m) and number of WTGs (10) based on a layout which extends across the full array area and therefore occupying the maximum horizontal field of view. Aviation lighting operating in full intensity mode (2000 candela (cd)).	The reasonable worst case scenario presented involves the maximum scale and extent of development and greatest intensity of aviation lighting as this presents the greatest potential for impacts on seascape, landscape and visual.
Decommissioning		
Increased movement and activity within the array area, with potential to affect perceptual aspects of seascape and landscape character and views.	Maximum extent of activity and number of vessels. The maximum duration over which works could occur. Assumed to be the reverse of construction as set out in Section 4.5.10 of Chapter 04: Description of the Proposed Project.	The reasonable worst case scenario presents the maximum scale, extent and duration and as such represents the greatest potential magnitude of change to seascape, landscape and visual.

23.6.1. *Impacts scoped out of assessment*

- 63. Potential impacts relating to the operation and maintenance of the offshore export cable and other subsea elements of the proposed Project have been scoped out of the SLVIA during EIA scoping and subsequent consultation. Subsea elements are unlikely to be visible from or result in impacts on an appreciation of seascape and landscape character or views.

23.6.2. *Assessment Assumptions and Limitations*

- 64. Details of the assumptions and limitations of the assessment are provided in **Appendix 23A – SLVIA Methodology** and are summarised below:
 - Duration of operational effects are assumed to be long-term based on a 30-year operational lifespan of the Project;



- Graphics and visualisations have been provided to support the assessment. It is important that these are read in conjunction with the assessment text and should be viewed in the field and with an understanding of their inherent limitations;
- Baseline panorama is provided for the majority of assessment viewpoints, with every effort made to capture photography in suitable conditions. Baseline photography is not provided for Viewpoint 03: Pembroke – Rosslare Ferry as it is not possible to capture suitable photography from a moving vessel at sea, or from Viewpoint 15: Lundy Island which is located in excess of 56 km from the proposed Project.
- A cumulative cut-off date of 31 October 2023 was set to allow progress with the cumulative assessment and visualisations. Any subsequent changes to the cumulative baseline have not been assessed;
- The night-time baseline is based on targeted site survey at night coupled with daytime observations;
- Wind direction, weather and prevailing atmospheric conditions can all have an influence on the visibility and impression of WTGs, particularly from more distant locations. The assessment adopts a ‘worst case’ approach to daytime effects which assumes clear weather conditions and excellent visibility (>40 km as defined by the Met Office). In relation to night-time effects a realistic worse case approach is taken, highlighting the theoretical, but unlikely, scenario of the lights operating at peak intensity in clear conditions, and qualifying this with the more likely scenario of the lights operating in the lower intensity mode during clear conditions, and higher intensity mode in poorer conditions.
- It is proposed that the WTGs would be installed on the floating platform at a nearby port facility and/or nearby sheltered waters prior to being towed to the Array Area. The final stages of the platform assembly, prior to the WTG integration are also undertaken at the same local port(s) whenever possible (i.e., if facilities are determined sufficient to support this work). If not fabricated at the assembly location, the WTG and substructure components would be transported by sea to the assembly port. The location for assembly of WTGs and platforms would be confirmed at a later stage. As a result, the installation port and fabrication of the WTGs has not been considered in detail in this assessment. However, it is anticipated that potential temporary effects relating to these elements would be minimised through siting within an existing port and/or industrial setting.

23.7 Embedded Mitigation, Management Plans and Best Practice

65. As part of the project design process, a number of designed-in measures have been proposed to reduce the potential for impacts on seascape and landscape character and visual amenity (see **Table 23-7**). The design of the proposed Project therefore includes embedded mitigation measures and reference to various management plans that would be produced as conditions of consent. This approach has been employed in order to demonstrate commitment to mitigation measures by including them in the design of the proposed Project and as such the embedded measures have been considered within the assessment presented in **Section 23.8** below. Assessment of sensitivity, magnitude and therefore significance includes the implementation of these measures.



Table 23-7. Mitigation measures adopted as part of the proposed Project

Embedded Mitigation Measures, Management Plans and Best Practice	Justification
Design Embedded Measures	
Siting of WTG at a distance of over 35 km from the Pembrokeshire coast.	Siting at considerable distance from the coasts helps to minimise potential impacts.
Siting of WTG within an extensive, large-scale simple seascape context.	Nature of the WTGs would relate well to the location and context, reducing perception of scale and minimising impacts.
Use of aviation lighting with two intensity modes for use in different atmospheric conditions.	This allows a low intensity mode (10% of full intensity) to be utilised in periods when atmospheric conditions allow visibility of greater than 5 km which helps to minimise the potential for night-time visual effects.
Management Plans	
Lighting and Marking Plan would include measures to limit the type and range of visible lighting within the Array Area based on minimum requirements for operational safety.	Limiting the use, type and visible range of lighting would help limit potential impacts on night-time views and dark sky characteristics.
Project (Array) Layout Plan would seek to define a well-balanced layout and minimise the horizontal extent occupied by the WTGs, based on the principles set out in <i>Siting and Designing Wind Farms in the Landscape</i> (NatureScot, 2017), while taking account of other technical and environmental constraints.	A well-balanced and simple composition of WTGs helps reduce visual intrusion and better relate to the simple, large scale nature of the seascape context. Minimising horizontal extent helps reduce the amount of the view occupied by WTGs.

23.8 Assessment of Environmental Effects

66. The impacts and effects (both beneficial and adverse) associated with the construction and decommissioning of the proposed Project are outlined below. The assessments take into account the embedded mitigation measures described in **Section 23.7**.

23.8.1. Construction and Decommissioning Effects

- 67. Construction and decommissioning of the proposed Project have the potential to influence certain perceptual aspects of seascape and landscape character and views. Due to the location and nature of the proposed Project there would be no impacts on the physical elements which contribute to the seascape and landscape character.
- 68. Potential construction and decommissioning impacts would principally occur as a result of activity associated with laying of the proposed offshore export cables and installation (or removal) of proposed WTGs within the array area.
- 69. Laying of the offshore export cables would be undertaken from vessels in the sea and therefore would not appear out of character in the context of existing commercial shipping, with large scale vessels travelling to/from Milford Haven or anchored offshore common.
- 70. Construction activity within the array area would involve installation of WTGs and other ancillary elements such as navigational markers and laying of cables and would occupy a small area within an expansive large scale seascape. Construction would largely be undertaken from sea vessels and therefore would not appear out of character given the context of commercial



shipping. The concentration of vessels within a relatively small area may increase potential visibility of construction (or decommissioning). However, this would be tempered by the considerable distance of the array area from the coast and the temporary nature of construction, limiting the potential influence on perceptual aspects of seascape and landscape character and on views.

71. There is also potential for impacts to occur as a result of transportation of WTGs from the fabrication yard/port to the array area. While the structures would appear different than typical commercial shipping, they would be experienced in this context and any changes would be temporary in nature and of a short duration.
72. Overall, it is considered that impacts and effects from construction and decommissioning would be similar to or less than those relating to operation and maintenance, set out below. The considerable distance of the majority of activity from the coast, the small part of the expansive seascape it would occupy, the existing context of commercial shipping as a characteristic of the seascape and views, the temporary nature and short duration (up to 2 years) would all contribute to a reduced impression of change and no potential for significant effects.

23.8.2. *Operation and Maintenance (O&M) Effects*

73. A detailed assessment of potential impacts and effects of operation and maintenance of the proposed Project on relevant receptors is set out in **Appendix 23C – SLVIA Detailed Assessment** and summarised below.

Landscape Designations

74. The following provides a summary of potential effects on PCNP and related Heritage Coasts. More detailed assessment, including in relation to each of the identified special qualities, is provided in **Appendix 23C – SLVIA Detailed Assessment**.
75. The remaining landscape designations identified within the study area have been scoped out of detailed assessment as a result of the very limited and/or localised nature of potential visibility and therefore no potential for significant effects.

Sensitivity of the receptor

76. PCNP is a nationally designated landscape and as such the landscape value is considered to be very high. Taking account of the variable context and influence of existing energy and other development adjacent to the PCNP and Heritage Coasts, and the importance of the relationship with the coastal waters and open sea beyond, overall susceptibility to change is considered to be high. The overall sensitivity of the PCNP and Heritage Coasts is therefore considered to be **high**.

Magnitude of impact

77. The proposed WTGs would be located outside and at a distance of over 35 km from the PCNP boundary at its closest point and as such would not result in any change to the physical characteristics which contribute to the identified special qualities. Potential change would therefore be indirect in nature, relating to the influence of visibility of the Proposed Project on perceptual aspects of PCNP. The assessment has identified that the considerable intervening distance of the proposed Project from the PCNP and the clear separation from the coast provided by expansive areas of open seascape, would limit the potential for change on each of the identified special qualities and overall character of the PCNP. The magnitude of impact is therefore considered to be **small**.

*Significance of the effect*

78. The sensitivity of PCNP and related Heritage Coasts is considered to be **high**, and the magnitude of the impact is assessed as **small**. Therefore, the effect would be **minor adverse**, which is **not significant** in EIA terms.

Seascape and Landscape Character

79. The following provides a summary of potential effects on seascape and landscape character. Detailed assessment of potential effects on each of the relevant SCAs and LCAs is provided in **Appendix 23C – SLVIA Detailed Assessment**.

Sensitivity of the receptor

80. An evaluation of the baseline characteristics of each of the relevant SCAs and LCAs indicated that the majority are of very high value. The more restricted access and influence from military activity would slightly reduce the value of Castlemartin Coastal Waters SCA and Castlemartin/Merrion Ranges LCA to high. Susceptibility to change is variable with the majority of the SCAs and LCA considered to be medium and the remaining high. The main factors which have affected the level of susceptibility relate to the scale and complexity of the seascape or landscape and the level of influence from existing wind and energy development. When evaluating the identified value and susceptibility, the overall sensitivity of each SCA and LCA is considered to be **high**.

Magnitude of impact

81. The proposed WTGs would be located outside and at a distance of greater than 35 km from each of the relevant SCAs and LCAs and as such would not result in any change to the physical features which contribute to the character of each area. Potential change would therefore be indirect in nature, relating to the influence of visibility of the proposed Project on perceptual aspects of character. The assessment has identified that potential change to the perceptual attributes and overall impression of each of the SCAs and LCAs would be limited in nature due to the considerable distance and clear separation from the proposed Project and/or the limited nature of potential visibility. In each case, the magnitude of impact is considered to be **small**.

Significance of the effect

82. The sensitivity of each relevant SCA and LCA is considered to be **high**, and the magnitude of the impact is assessed as **small**. Therefore, the effect would be **minor adverse**, which is **not significant** in EIA terms.

Representative Viewpoints

83. The following provides a summary of potential effects on visual receptors based on the assessment viewpoints. Detailed assessment of potential effects on each of the representative viewpoints is provided in **Appendix 23C – SLVIA Detailed Assessment**.

Sensitivity of the receptor

84. Evaluation of the location and nature of existing views from each of the representative viewpoints has indicated that the majority are of high value. The exceptions are Viewpoint 04: Marloes Beacon, Viewpoint 09: Freshwater West Beach and Viewpoint 14: Caldey Island where value is considered to be very high, and Viewpoint 10: Castlemartin Range Trail where the value is considered to be medium. The majority of the viewpoint are representative of recreational receptors, visitors or residents where the view is of primary importance, indicating a very high susceptibility to change. The exception is Viewpoint 10: Castlemartin



Range Trail where the susceptibility is considered to be high as a result of the main focus of receptors at this location being activity within the military firing range.

85. The sensitivity of receptors represented by the majority of the assessment viewpoints is considered to be **high**. However, the sensitivity of receptors represented by Viewpoint 04: Marloes Beacon, Viewpoint 09: Freshwater West Beach and Viewpoint 14: Caldey Island is considered to be **very high**, and sensitivity of receptors represented by Viewpoint 10: Castlemartin Range Trail is considered to be **medium**.

Magnitude of impact

86. The proposed WTGs would be located at a distance of approximately 35 km or greater from each of the viewpoint locations. At these distances atmospheric conditions are likely to have a strong influence on potential visibility of the proposed WTGs.
87. When visible, the WTGs would appear as a relatively small feature on the broad seascape horizon in the far background of views from each receptor. The proposed WTGs would relate well to the large scale and simple composition of open seas and would not appear out of scale with other structures, such as oil refinery stacks and onshore wind turbines, already present in views from many locations. The proposed Project would occupy a very small part (approximately 9 - 12°) of the often expansive horizontal extent of views, with the majority of the view from most locations unaffected.
88. Overall, although the proposed Project would introduce a new feature into views from each of the viewpoint locations, the intervening distance and very small part of the view affected would limit the sense of change. Magnitude of impact is therefore considered to be **small** for the majority of location, reducing to **negligible** for Viewpoint 14: Caldey island and Viewpoint 15: Beacon Hill, Lundy Island as a result of the greater distance from the proposed Project.

Significance of the effect

89. For the majority of the assessment viewpoints the sensitivity is considered to be **high** or **very high** and the magnitude of the impact assessed as **small**, resulting in a **minor adverse** significance of effect, which is **not significant** in EIA terms.
90. A lower sensitivity of **medium** is anticipated for receptors at Viewpoint 10: Castlemartin Range Trail and when combined with the identified **small** magnitude of impact is considered to result in a **minor adverse** significance of effect, which is **not significant** in EIA terms.
91. For Viewpoint 13: Manorbier Beach, Viewpoint 14: Caldey island and Viewpoint 15: Beacon Hill, Lundy Island the sensitivity is considered to be **high** or **very high** and the magnitude of the impact assessed as **negligible** as a result of the considerable intervening distance, resulting in a **negligible adverse** significance of effect, which is **not significant** in EIA terms.

Pembrokeshire Coast Path

92. The following provides a summary of potential visual effects on users of the Pembrokeshire Coast Path, and a more detailed assessment is provided in **Appendix 23C – SLVIA Detailed Assessment**.

Sensitivity of the receptor

93. The Pembrokeshire Coast Path is a long distance walking route stretching approximately 300 km from St Dogmaels in the north to Amroth in the south. Within the study area, views from the route vary considerably, from elevated open coast and sea views to more limited and enclosed views from bays and settlements, and close range views of wind turbines, oil and gas



and other industrial development around Milford Haven. Although the nature of views and scenic quality varies along the length of the route overall sensitivity is considered to be **high**.

Magnitude of impact

94. Potential visibility of the proposed Project varies along the route, with large sections gaining no visibility as a result of screening from landform, vegetation and/or built form. Greatest potential for visibility would be along the south and/or west coasts of Marloes, Dale and Angle peninsula and between Elegug Stacks and St Govan's Head.
95. Overall, although the proposed Project would introduce a new offshore feature into views from parts of this route, the intervening distance, very small part of the view affected and general lack of influence on important views of the coastline, sea cliffs and near shore waters and offshore islands contribute to a reduced magnitude of impact. The proposed Project would have a limited influence on the range and type of views available, which often include existing wind farms and other onshore development and commercial shipping offshore. On balance, magnitude of impact is considered to be **small**.

Significance of the effect

96. The sensitivity of users of the Pembrokeshire Coast path is considered to be **high** and the magnitude of the impact is assessed as **small**. Therefore, the effect would be **minor adverse**, which is **not significant** in EIA terms.

Night-time viewpoints

97. The following provides a summary of potential night-time visual effects with detailed assessment of potential effects on receptors at the identified night-time viewpoints provided in **Appendix 23D – Night-time Visual Assessment**.

Sensitivity of the receptor

98. Viewpoint N1: Martin's Haven car park and Viewpoint N2: Kete car park are locations recognised as dark sky discovery sites and promoted for appreciation of the night sky and as such night-time views are considered to be of very high value. People are likely to be at these locations at night to star gaze or view the night sky and as such are considered to be of a very high susceptibility and **very high** sensitivity.
99. Viewpoint N3: Freshwater West Beach is not a dark sky discovery site although is within the PCNP where dark skies are recognised as a feature and as such value of night-time views is considered to be high. Susceptibility to change is also considered to be high and the overall sensitivity of receptors at this location at night would be **high**.

Magnitude of impact

100. The proposed WTGs would be located at a distance of approximately 38 km or greater from each of the night-time viewpoint locations. At these distances atmospheric conditions are likely to have a strong influence on potential visibility of the proposed WTGs.
101. When visible, the aviation lighting on the proposed WTGs would appear as relatively small features occupying a very small part of the night sky. The aviation lighting would add to existing light sources visible within the sea but would not result in glare on the water surface or skyglow. The position of the lights low towards the horizon would further limit potential change and would not impede views to the night sky and stars overhead.
102. Overall, although the proposed Project would introduce additional light sources into views from the viewpoint locations, the intervening distance, location low on the horizon and very



small part of the night sky and view affected would limit the sense of change. Magnitude of impact is therefore considered to be **small**.

103. When viewed from these locations, it is likely that aviation lighting would be operating in the low intensity mode (200 cd), further reducing the impression of change.

Significance of the effect

104. The sensitivity of receptors at each night-time viewpoint is considered to be **very high** or **high** and the magnitude of the impact from the aviation lighting is assessed as **small**. Therefore, the effect would be **minor adverse**, which is **not significant** in EIA terms.

23.8.3. *Summary of Residual Environmental Effects*

105. This chapter of the ES has assessed the potential environmental effects on seascape and landscape character and visual amenity from the construction, operation and maintenance and decommissioning phases of the proposed Project. Mitigation measures have been embedded in the siting and design of the proposed Project and have been considered and incorporated into the assessment.

106. **Table 23-8** summarises the impact assessment undertaken and confirms the significance of any residual effects resulting from the operation and maintenance of the proposed Project. As highlighted above, potential effects from construction and decommissioning of the proposed Project would be similar or less than those related to operation and would be of a short duration and temporary in nature.

23.9 **Summary of Additional Mitigation Measures**

107. The SLVIA has identified that the proposed Project would not result in any significant effects on landscape designations, seascape and landscape character, or visual amenity and as such no additional mitigation is required.

23.10 **Summary of Effects and Conclusions**

108. This section summarises the residual significant effects of the proposed Project on seascape and landscape character and visual amenity.



Table 23-8. Assessment summary

Potential Impact	Receptor	Receptor Sensitivity	Magnitude of impact	Significance of effect	Additional Mitigation	Residual Significance of Effect
Operation and Maintenance						
Impacts on seascape and landscape character	PCNP (and Heritage Coasts)	High	Small	Minor (adverse)	None required	Minor (adverse) Not Significant
	All SCA and LCA in detailed assessment	High	Small	Minor (adverse)	None required	Minor (adverse) Not Significant
Visual impact resulting from WTGs	Viewpoints 01 - 03, 05 - 08, 11 and 12	High	Small	Minor (adverse)	None required	Minor (adverse) Not Significant
	Viewpoints 04 and 09	Very High	Small	Minor (adverse)	None required	Minor (adverse) Not Significant
	Viewpoint 10	Medium	Small	Minor (adverse)	None required	Minor (adverse) Not Significant
	Viewpoint 12	Very High	Negligible	Negligible (adverse)	None required	Negligible (adverse) Not Significant
	Viewpoints 13 and 14	High	Negligible	Negligible (adverse)	None required	Negligible (adverse) Not Significant
Night-time visual impact resulting from aviation lighting on WTGs	Viewpoints N1 and N2	Very High	Small	Minor (adverse)	None required	Minor (adverse) Not Significant
	Viewpoint N3	High	Small	Minor (adverse)	None required	Minor (adverse) Not Significant



23.11 Cumulative Effects of the Project

23.11.1 Introduction

- 109. Cumulative effects are those effects upon receptors arising from the proposed Project alongside all existing, and/ or reasonably foreseeable projects, plans and activities that result in cumulative effects with any element of the proposed Project. Existing Projects are generally considered as part of the baseline and as such are considered within the impact assessment presented in **Section 23.8** above.
- 110. This section assesses potential cumulative effects on seascape and landscape character and visual amenity from the addition of the proposed Project to other identified projects, plans and activities that have the potential to act cumulatively with the proposed Project. Summary analysis of the potential total cumulative effects resulting from all of the shortlisted cumulative projects in combination with the proposed Project is also provided.
- 111. PINS Advice 17: Cumulative Effects Assessment (2019) suggests that CEA follows a four-stage process. The aim of this approach is to accurately determine relevant projects and associated relationships with scoped in receptors identified in the ES, to be included within the interproject CEA.
- 112. The general approach to the assessment of cumulative effects is set out in **Appendix 5B – Approach to Cumulative Effects Assessment** and is also summarised in **Table 23-9**. Details of the specific methodology used to assess the potential cumulative impacts on seascape and landscape character and visual amenity is set out in **Section 23.9 of Appendix 23A – SLVIA Methodology**.

Table 23-9 PINS Advice 17 Stages of the CEA process

CEA Stage	Activity
<i>Stage 1</i>	Determine a zone of influence (Zoi) via desk study for each topic receptor scoped into the ES. This will establish a <i>long list</i> of projects within each Zoi that will be shortlisted in Stage 2. This list of plans and projects/activities is drawn up through a desk study of planning applications, development plan documents, relevant development frameworks and any other available sources to identify ‘other development’ within the Zoi. Information on each project (location, development type, status, etc.) is documented, along with the certainty or tier assigned to the ‘other development’ (i.e. confidence it will take place in the current form and when it will take place in relation to the project). PINS notes that the project should then consult with the relevant planning authority/ authorities and statutory consultees regarding the long list.
<i>Stage 2</i>	Screening of the long list identified in Stage 1, to establish a short list for the CEA. Screening is based on the criteria presented in the scoping report and subsequent comments by the regulator and statutory consultees. PINS has provided inclusions/ exclusion threshold criteria, against which the potential for ‘other development to give rise to significant cumulative effects by virtue of overlaps in temporal scope, the scale and nature of the ‘other developments’ and /or receiving environment, or any other relevant factors is assessed. From this assessment, a shortlist of ‘other developments’ to be included in the CEA is produced. It is noted that documented information on each of the ‘other developments’ is likely to be high level at this stage, outlining the key issues to take forward.
<i>Stage 3</i>	Gathering of all information available on short listed projects generated in Stage 2. At this stage all available data and information about the shortlisted projects that will be included in the CEA is collected to inform the assessment. This should utilise the most current information for each project in the public domain and



CEA Stage	Activity
	assess the assumptions and limitations of the information collected on each shortlisted project.
Stage 4	Each of the shortlisted projects are reviewed in turn by the different topics to assess whether cumulative effects may arise and the nature of those effects (i.e. beneficial or adverse). The significance of the effects on environmental receptors is established within each ES technical chapters. Where significant adverse cumulative effects are identified, mitigation measures are also considered within the CEA alongside the mechanism to secure that mitigation, e.g. consent condition requirements.

23.11.2. *Scope of Cumulative Seascape, Landscape and Visual Effects Assessment*

113. The following impacts have been scoped into the CEA for seascape and landscape character and visual amenity:

- Construction
 - Potential cumulative change to landscape and visual receptors resulting from construction of the proposed Project in addition to construction of one or more of the identified cumulative schemes.
- Operation and maintenance
 - Potential cumulative change to landscape designations, SCAs and LCAs resulting from the addition of the proposed WTGs into the cumulative baseline; and
 - Potential cumulative change to views resulting from the addition of the proposed WTGs into the cumulative baseline.
- Decommissioning
 - Potential cumulative change to landscape and visual receptors resulting from decommissioning of the proposed Project in addition to decommissioning of one or more of the identified cumulative schemes.

114. The assessment considers the cumulative effects resulting from the addition of the proposed Project to the following three cumulative scenarios:

- Scenario 1: Consented schemes in addition to existing developments;
- Scenario 2: Application stage scheme in addition to consented and existing developments; and
- Scenario 3: Select scoping stage schemes in addition to those at application stage, consented or existing.

115. **Table 23-10** presents the short list of projects identified and included within the CEA for seascape, landscape and visual, the locations of which are shown in **Volume 5: Figure 23.11**. These have been identified through desk based analysis and modelling and include those onshore and offshore wind farm schemes located within the 45 km Study Area (as agreed with NRW) and with the potential to contribute to a cumulative effect. Existing wind turbines located immediately adjacent to the Study Area have also been included as part of the existing baseline. The remaining projects on the long list have been scoped out due to the distance from the proposed Project, lack of available information and/ or being of an unrelated type of development.



Table 23-10 List of projects considered for the seascape, landscape and visual cumulative effects assessment

Project Name/Developer	Project Type	Tier and Status	Approx. distance from the proposed Project
Castle Pill Wind Farm	Onshore wind farm	Tier 1: Existing/operational	46 km (from proposed Array Area)
Dragon Energy Park	Onshore wind farm	Tier 2: Scoping/pre-application	45 km (from proposed Array Area)
Erebus	Offshore wind farm	Tier 1: Consented	5 km (from proposed Array Area)
Llŷr 2	Offshore wind farm	Tier 2: Scoping/pre-application	4 km (from proposed Array Area)
Lower Scoveston and Scoveston Park	Onshore wind turbines	Tier 1: Existing/operational	47 km (from proposed Array Area)
Valorous	Offshore wind farm	Tier 2: Scoping/pre-application	8 km (from proposed Array Area)
Wear Point	Onshore wind farm	Tier 1: Existing/operational	45 km (from proposed Array Area)
White Cross	Offshore wind farm	Tier 1: Application submitted	18 km (from proposed Array Area)

116. In addition to the above, initial consideration was given to inclusion of the South Pembrokeshire Demonstration Zone within the shortlisted projects. However, this was scoped out due to a lack of available information on any potential schemes coming forward.
117. The Crown Estate and UK Government are seeking to establish a new floating wind sector in the Celtic Sea off the coasts of South Wales and Southwest England. It is expected that the first phase of commercial development in this area will be brought forward in the 2030s and as such no information on potential schemes is currently available to allow inclusion in the cumulative assessment. It is anticipated that each of these developments would be subject to an EIA, including assessment of relevant cumulative effects, if and when they progress towards an application for consent.

23.11.3. Cumulative Effect Assessment

Construction and Decommissioning

118. Potential cumulative effects resulting from construction and decommissioning of the proposed Project would only occur if these activities happened concurrently or sequentially with construction or decommissioning of one or more of the identified cumulative schemes. There is no certainty on timing of construction and decommissioning activity and therefore no certainty whether a cumulative effect would occur.



119. Construction and decommissioning of Erebus, Llŷr 2 and Valorous is likely to be broadly similar to that of the proposed Project, with potential for relatively limited influence on the baseline due to the location and nature of activity. The distant nature of White Cross would result in construction and decommissioning being largely imperceptible from the Pembrokeshire coast and as such it would not contribute to the impression of a cumulative effect. Construction and decommissioning of Dragon Energy Park would occur in the context of adjacent industrial development and activity and would be different in nature to that associated with the offshore schemes such that it would not contribute to the perception of a cumulative effect.
120. If occurring concurrently with other offshore cumulative schemes, construction or decommissioning of the proposed Project would add to the movement of vessels at sea and/or transportation of WTG towards the associated array areas. This may result in a slight increase in the impression of activity within the sea, often at considerable distance from the coast, reducing the potential change to seascape and landscape character and views. Potential additional change resulting from the proposed Project would occur within a relatively small part of the expansive seascape and would be of a short duration.
121. If occurring sequentially, immediately after and/or before construction or decommissioning of one or more of the offshore cumulative schemes, potential cumulative change resulting from the proposed Project would be related to extension of time period, rather than introduction of new/additional change. The increase in time period would be of a short duration resulting in only a temporary and slight increase in the impression of change.
122. Overall, it is considered that cumulative impacts and effects from construction and decommissioning of the proposed Project in addition to that of the identified cumulative schemes would be similar to or less than those relating to operation and maintenance, set out below. The considerable distance of the majority of activity from the coast, the small additional part of the expansive seascape it would occupy, the existing context of commercial shipping as a characteristic of the seascape and views, the temporary nature and short duration would all contribute to a reduced impression of additional change and no potential for significant cumulative effects.

Operation and Maintenance

Landscape Designations

123. For the purposes of cumulative assessment sensitivity is considered to be the same as that identified within the main assessment, **high** for the PCNP and Heritage Coasts.
124. In cumulative scenario 1, the consented Erebus scheme would be present within the distant seascape to the southwest of the PCNP and Heritage Coasts. This is likely to result in a small influence on some of the perceptual attributes of these designations, and particularly aspects relating to sense of wildness, remoteness, tranquillity and dark skies.
125. In cumulative scenario 2, Dragon Energy Park would add to, and slightly increase, the presence of energy and industrial development around Milford Haven. White Cross would be located at considerable distance from these designations and although theoretically visible is likely to have limited influence on the baseline.
126. In cumulative scenario 3, Llŷr 2 and Valorous scoping stage schemes would add further offshore wind development into the extensive seascape to the southwest. Llŷr 2 would add a further cluster of turbines, appearing similar to but separate from Erebus and in a similar part of the view as White Cross, albeit closer to the PCNP. Valorous would add a larger group of turbines, generally perceived beyond the consented Erebus scheme. This would increase the



horizontal extent, depth and density of offshore wind development within the distant seascape, slightly adding to the influence on perceptual attributes.

127. Addition of the proposed Project to each of the cumulative scenarios would add further offshore development within the extensive open seascape at considerable distance from PCNP and Heritage Coasts. The proposed Project would be experienced in the context of and appear similar to other offshore develop present in the cumulative baseline. While the proposed Project would add slightly to the impression of development within the broad seascape, potential additional change to perceptual attributes would be limited by the separation distance from the PCNP and as such the magnitude of impact would be **small** for each cumulative scenario.
128. The sensitivity of PCNP and related Heritage Coasts is considered to be **high** and the magnitude of the cumulative impact for each scenario is assessed as **small**. Therefore, the cumulative effect would be **minor adverse** and **not significant**.

Seascape and Landscape Character

129. The following provides a summary of potential cumulative effects on seascape and landscape character. Detailed assessment of potential cumulative effects on relevant SCAs and LCAs is provided in **Appendix 23E – SLVIA Cumulative Assessment**.
130. For the purposes of cumulative assessment sensitivity is considered to be the same as that identified within the main assessment, **high** for each of the included SCAs and LCAs.
131. In cumulative scenario 1, the consented Erebus scheme would be present within the distant seascape to the southwest of the Pembrokeshire coast and would exert a small influence on some of the perceptual attributes of some of the SCAs and LCAs.
132. In cumulative scenario 2, Dragon Energy Park would add to, and slightly increase, the presence of energy and industrial development around Milford Haven adding to the context of development in the area. White Cross would be located at considerable distance from the Pembrokeshire coast and although theoretically visible is likely to have limited influence on the baseline of this scenario.
133. In cumulative scenario 3, Llŷr 2 and Valorous would add further offshore wind developments, with Llŷr 2 appearing similar to but separate from consented Erebus scheme and Valorous generally perceived behind Erebus. These two schemes would add slightly to the localised influence on perceptual attributes of some of the SLAs and LCAs.
134. Addition of the proposed Project to each of the cumulative scenarios would add further offshore development within the extensive open seascape at considerable distance from the Pembrokeshire coast. Where visible, the proposed Project would largely be experienced in the context of and appear similar to other offshore develop present in the cumulative baseline, with only a limited and localised increase in the extent of potential indirect change. While the proposed Project would add slightly to the impression of development within the broad seascape from parts of the identified SCAs and LCAs, potential additional change to perceptual attributes would be limited by the separation distance from most receptors. The magnitude of impact on each of the identified SLAs and LCAs would be **small** for each cumulative scenario.
135. The sensitivity of the SCAs and LCAs is considered to be **high** and the magnitude of the cumulative impact for each scenario is assessed as **small**. Therefore, the cumulative effect would be **minor adverse** and **not significant**.



Representative viewpoints

136. The following provides a summary of potential cumulative effects on visual receptors based on the assessment viewpoints. Detailed assessment of potential cumulative effects on each of the representative viewpoints is provided in **Appendix 23E – SLVIA Cumulative Assessment**.
137. For the purposes of cumulative assessment sensitivity is considered to be the same as that identified within the main assessment, **high** for each of the viewpoints with the exception of Viewpoint 04: Marloes Beacon, Viewpoint 09: Freshwater West Beach and Viewpoint 14: Caldey Island which would be **very high**, and Viewpoint 10: Castlemartin Range Trail which would be **medium**.
138. In cumulative scenario 1 the consented Erebus scheme would be visible from the majority of viewpoints within the broad seascape to the southwest, adding a new distant feature into the view and resulting in a slight alteration to the baseline. There would be no potential for cumulative change in this scenario from Viewpoint 7: Linsway Bay, Viewpoint 13: Manorbier Beach, Viewpoint 14: Caldey island and Viewpoint 15: Beacon Hill, Lundy Island as a result of the lack of visibility and/or distance of greater than 60 km from Erebus.
139. In cumulative scenario 2, Dragon Energy Park would be seen adjacent to a range of other existing wind farms and oil and gas developments and would add slightly to the concentration of development in small part of the view from most viewpoints. White Cross would be located at considerable distance from the majority of viewpoints and although theoretically visible would be largely imperceptible in most conditions. Both schemes would contribute very little to the impression of a cumulative impact from most viewpoint.
140. In cumulative scenario 3, the scoping stage schemes of Llŷr 2 and Valorous would add further and in the case of Valorous, larger, offshore wind farms into the distant seascape. Llŷr 2 would appear separate but related to Erebus and Valorous, extending the influence of wind farm development to a slightly greater extent of the often expansive seaward views. Valorous would be located in a similar part of the view as the consented Erebus scheme adding to the horizontal extent and density and depth of offshore development within views. Valorous would add very little, if any, impression of cumulative change from Viewpoint 7: Linsway Bay, Viewpoint 13: Manorbier Beach, Viewpoint 14: Caldey island and Viewpoint 15: Beacon Hill, Lundy Island as a result of the lack of visibility and/or intervening distance of greater than 60 km.
141. From most viewpoints the proposed Project would be seen in the context of Erebus, Llŷr 2 and Valorous, appearing similar to, but generally separate from, these other projects as a result of the separation distances and/or differing distance from the viewpoint. From some locations, particularly further east (viewpoints 12 and 13), the proposed Project may appear more closely related and as an extension to Llŷr 2. The proposed Project would be at greater distance from White Cross which would have a limited presence in views from most locations. Similarly, the proposed Project would be at considerable distance and with little cumulative relationship to the onshore Dragon Energy Park.
142. In each scenario the proposed Project would slightly extend the influence of wind farms to an additional part of the extensive open seascape which forms the distant backdrop to views from the Pembrokeshire coast and Lundy Island. This would represent a very small part of the expansive views available from each viewpoint and therefore, although the proposed Project may slightly increase the influence of wind development in the background it would not alter or fundamentally change the nature of the view. Magnitude of cumulative impact for each of the cumulative scenarios is therefore considered to be **small** for the majority of locations,



- reducing to **negligible** for Viewpoint 13: Manorbier, and with little or no potential for cumulative effects on Viewpoint 14: Caldey island and Viewpoint 15: Beacon Hill, Lundy Island as a result of the greater distance from the proposed Project.
143. For the majority of the assessment viewpoints the sensitivity is considered to be **high**, and the magnitude of cumulative impact assessed as **small**, resulting in a **minor adverse** and **not significant** cumulative effect for each cumulative scenario.
144. A higher sensitivity of **very high** is anticipated at Viewpoint 04: Marloes Beacon and Viewpoint 09: Freshwater West Beach when combined with the identified **small** magnitude of cumulative impact is considered to result in a **minor adverse**, and **not significant**, cumulative effect for each cumulative scenario.
145. A lower sensitivity of **medium** is anticipated for receptors at Viewpoint 10: Castlemartin Range Trail and when combined with the identified **small** magnitude of cumulative impact is considered to result in a **minor adverse**, and **not significant**, cumulative effect for each cumulative scenario.
146. For Viewpoint 13: Manorbier Beach the sensitivity is considered to be **high**, and the magnitude of cumulative impact assessed as **negligible**, resulting in a **negligible adverse**, and **not significant**, effect for cumulative scenario 3, with no potential for cumulative effects for the other two scenarios.
147. Viewpoint 14: Caldey island and Viewpoint 15: Beacon Hill, Lundy Island were not considered in detail in the cumulative assessment due to the considerable distance from the proposed Project and therefore little or no potential for a cumulative effect.

Pembrokeshire Coast Path

148. The following provides a summary of potential cumulative visual effects on users of the Pembrokeshire Coast Path, and a more detailed assessment is provided in **Appendix 23E – SLVIA Cumulative Assessment**.
149. For the purposes of cumulative assessment sensitivity is considered to be the same as that identified within the main assessment, **high** for users of the Pembrokeshire Coast Path.
150. In cumulative Scenario 1, the consented Erebus scheme would be visible from multiple sections of the Pembrokeshire coast path, particularly between Martin's Haven and St Ann's Head, a localised part on the north side of Milford Haven and from the south side of the Angle peninsula east towards St Govan's Head.
151. In cumulative Scenario 2, Dragon Energy Park would be located close to a number of existing onshore wind farms to the north of Milford Haven, slightly adding to the prominence of such development from localised area, but not extending visibility to new sections of the route. White Cross would be located at considerable distance from the Pembrokeshire coast and although theoretically visible from elevated sections of this route would be largely imperceptible in most conditions. Both schemes would contribute very little to the impression of a cumulative impact.
152. In cumulative Scenario 3, Llŷr 2 would be visible as an additional distant offshore development, similar to but separate from Erebus and slightly extending visibility to additional localised sections of the route west of Milford Haven. Valorous would theoretically be visible as a distant feature beyond the consented Erebus scheme. The addition of Valorous would not introduce visibility of offshore development to new sections of the route. Llŷr 2 and Valorous would combine with Erebus to slightly increase the horizontal extent, depth and density of offshore development in views from parts of the route.



153. Analysis of the ZTVs (**Volume 5: Figures 23.12 to 23.15**) indicates that in each scenario visibility of the proposed Project would predominantly be restricted to the same sections of the route which would gain visibility of one or more of the cumulative schemes. The proposed Project would therefore add a further offshore development into views which would already include wind farms. The proposed Project would generally appear similar to, but separate from Erebus Llŷr 2 and Valorous, slightly increasing the horizontal field of view affected, although still representing a small part of the wide views available.
154. While the proposed Project would introduce an additional offshore feature into views from parts of this route, the intervening distance and relatively small increase in the extent of the view affected contribute to a reduced impression of cumulative change. Magnitude of cumulative impact is therefore considered to be **small**.
155. The sensitivity of users of the Pembrokeshire Coast path is considered to be **high** and the magnitude of the cumulative impact is assessed as **small**, resulting in a **minor adverse**, and **not significant**, effect for each cumulative scenario.

Night-time viewpoints

156. For the purposes of cumulative assessment sensitivity at night is considered to be the same as that identified within the main night-time assessment, **very high** for Viewpoint N1: Martin's Haven car park and Viewpoint N2: Kete car park, and **high** for Viewpoint N3: Freshwater West Beach.
157. In cumulative scenario 1, the aviation lights on the consented Erebus scheme would theoretically be visible from each of the night-time viewpoints, although one light would be screened by Skokholm from Viewpoint N1: Martin's Haven car park. The extent of theoretical visibility of the aviation lighting on Erebus is shown in **Volume 5: Figure 23.16**. Erebus would add to existing light sources within the view and result in a slight alteration to the night-time baseline, limited by the intervening distance and low position close to the horizon.
158. In cumulative scenario 2, Dragon Energy Park would not include visible aviation lighting and as such is not considered further with regards to night-time cumulative effects. The extent of theoretical visibility of the aviation lighting on schemes included in scenario 2 is shown in **Volume 5: Figure 23.17**. There is potential for aviation lighting on up to four of the White Cross turbines to be visible from Viewpoint N2: Kete car park. However, at a distance of over 60 km is likely to be a very minor or barely perceptible feature and as such would contribute very little to the impression of a cumulative impact. No visibility of aviation lighting on White Cross is anticipated from Viewpoint N1: Martin's Haven car park or Viewpoint N3: Freshwater West Beach.
159. In cumulative scenario 3, Llŷr 2 would introduce further aviation lights into distant views to the southwest from Viewpoint N2: Kete car park and Viewpoint N3: Freshwater West Beach, adding to those visible on Erebus further to the west. There would be no visibility of aviation lights on Llŷr 2 from Viewpoint N1: Martin's Haven due to screening by intervening landform. The extent of theoretical visibility of the aviation lighting on schemes included in scenario 3 is shown in **Volume 5: Figure 23.18**.
160. Aviation lighting on the potential Valorous scheme would add further light sources on the distant horizon in a similar part of the view as Erebus from Viewpoint N1: Martin's Haven car park and Viewpoint N2: Kete car park. The number of lights potentially visible from Viewpoint N1: Martin's Haven would be reduced due to screening provided by Skokholm Island. There is likely to be very little or no visibility of lighting on Valorous from Viewpoint N3: Freshwater West Beach as a result of screening provided by the distant horizon.



161. The proposed Project would add further light sources into views from each of the night-time viewpoints, appearing slightly separate but within a similar part of the view to Erebus from each of the viewpoints in scenario 1 and in relation to Llŷr 2 from Viewpoint N3: Freshwater West Beach, Llŷr 2 and Valorous from Viewpoint N2: Kete car park and Valorous from Viewpoint N1: Martin's Haven car park in scenario 3. In each case the proposed Project would add to a series of clusters of lights along the distant horizon. The impression of potential cumulative change would be somewhat moderated by the separation distance (approximately 38 km or greater), the low position towards the horizon, small additional extent of the view and the overall small part of the night sky affected. On balance, the magnitude of cumulative impact is considered to be **small** for each of the cumulative scenarios.
162. When viewed from these locations, it is likely that aviation lighting would be operating in the low intensity mode (200 cd), further reducing the impression of change.
163. The sensitivity of receptors at each night-time viewpoint is considered to be **very high or high** and the magnitude of the impact from the aviation lighting is assessed as **small**, resulting in a **minor adverse**, and **not significant**, effect for each cumulative scenario.

Combined cumulative effects

164. The above paragraphs consider the potential cumulative effects resulting from the addition of the proposed Project to the cumulative scenarios. The following provides analysis of the potential total cumulative effects resulting from all of the shortlisted cumulative projects in combination with the proposed Project.
165. In scenario 1 the consented Erebus project in combination with the proposed Project would introduce two offshore wind farms into an extensive, large scale seascape at considerable distance from the coast. The two projects would occupy very small areas of the extensive seascape and appear as distant features, occupying limited parts of views from the coast and nearshore waters.
166. In scenario 2 Dragon Energy Park would add an additional onshore wind farm within an area already influenced by other energy and industrial development. White Cross would add a further offshore wind farm within the extensive seascape at considerable distance from the Pembrokeshire coast.
167. In scenario 3 Llŷr 2 and Valorous would add further offshore wind farms in the broad vicinity of Erebus and the proposed Project, albeit with Llŷr 2 slightly closer to the coast and Valorous at slightly greater distance. Overall, the proposed cumulative projects would continue to occupy very small parts of the extensive seascape, at considerable distance from the coast.
168. When considering all cumulative schemes in combination, in each scenario they would occupy an overall small and distant part of the broad seascape context and would not be at a scale or extent which would make them a key or defining characteristic. The overall combined cumulative effect is therefore considered to be **minor adverse** and **not significant**, for the majority of the identified seascape, landscape and visual receptors, and **negligible adverse (not significant)** for more distant receptors which extend beyond the 45 km study area.

23.12 Inter-related Effects of the proposed Project

169. The term 'Inter-related' takes into account the environmental interactions ('inter-relationships') with other receptors within the proposed Project. These are referred to in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 and further described in **Chapter 31 – Inter-related Effect Assessment**.



170. As set out in PINS Advice Note 17 (PINS), 2019, *inter-related project effects*, or ‘interrelationships between topics’, derive from combinations of different project specific impacts which, when acting together on the same receptor, could result in a new or different effect, or an effect of greater significance than the project effects, when considered in isolation.
171. Inter-related effects comprise the following:
172. *Project lifetime effects*: effects that have the potential to occur during more than one phase of the proposed Project (i.e. construction, operation and maintenance and decommissioning) and also to interact in a way that could potentially create a more significant effect than if it was assessed in isolation.
173. *Receptor-led effects*: effects that have the potential to interact, spatially and temporally, to create inter-related effects on a receptor.
174. **Chapter 31 - Inter-related Effects Assessment** details the approach to the inter-related effects assessment and includes a description of the likely inter-related effects that may occur as a result of the proposed Project on seascape, landscape and visual.
- 23.12.1. *Inter-related Project lifetime effects*
175. Potential effects on seascape and landscape character across all phases of the proposed Project would be **minor adverse or less**.
176. Construction and decommissioning stage effects would largely relate to installation (or removal) of the offshore export cables and proposed WTGs, with limited influence on perceptual aspects of the PCNP and Heritage Coasts, SCAs and LCAs and on views resulting from increased movement of vessels at sea.
- 23.12.2. During operation potential effects would relate to changes to perceptual characteristics of the PCNP and Heritage Coasts, SCAs and LCAs and to views resulting from visibility of the proposed WTGs. Effects would be limited by the considerable distance and intervening seascape between the proposed WTGs and receptors, and limited extent of views affected.
- Inter-related receptor-led effects*
177. There is the potential for inter-related effects where specific seascape, landscape or visual receptors may be affected by the construction, operation and maintenance and/or decommissioning of both the offshore and onshore elements of the proposed Project. The SLVIA presented in this chapter and the Landscape and Visual Impact Assessment (LVIA) presented in **Chapter 07 – Landscape and Visual** combine to provide an assessment of all elements of the proposed Project.
178. Potential receptor-led inter-related effects would be limited to a small number of seascape, landscape and visual receptors due to there being no or very limited and/or distant visibility of either the offshore or onshore elements of the proposed Project. During construction inter-related effects, which would be temporary in nature and of a short duration, are only likely to occur at receptors where there would be direct or indirect change resulting from installation of the offshore export cable and onshore cable and substation. During operation, analysis of the ZTVs in conjunction with observations in the field indicates that locations with potential visibility of both the onshore substation and the proposed WTGs would largely be limited to localised parts of the top of the ridgelines between Carters Green and Corston Beacon/ Corston Lodge and near Castlemartin. The limited nature of combined visibility reduces the potential for receptor-led inter-related effects.
179. With respect to this interaction, these individual impacts were assigned a significance of minor or negligible adverse as standalone impacts and although potential combined impacts may



arise, it is predicted that this would not be any more significant than the individual impacts in isolation. This is because the area potentially affected would be very limited and the proposed WTGs would be very distant and both geographically and visually separate from the onshore substation.

23.13 Transboundary Effects

180. A transboundary effect refers to the impacts or effects of a project that extend beyond the boundaries of the United Kingdom and have the potential to affect the environment of other countries within the European Economic Area (EEA). These effects can occur either from the proposed Project on its own or when combined with the effects of other projects or activities in the wider geographical area.
181. In relation to seascape, landscape and visual receptors, potential impacts would be predominantly localised to the extent of the SLVIA Study Area. Given the intervening distance to neighbouring EEA states, there is no potential for transboundary impacts and resultant effects to occur.



23.14 References

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