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Morecambe Offshore Windfarm: Generation Assets

Environmental Statement

Volume 5

Chapter 18 Seascape, Landscape and Visual Impact Assessment

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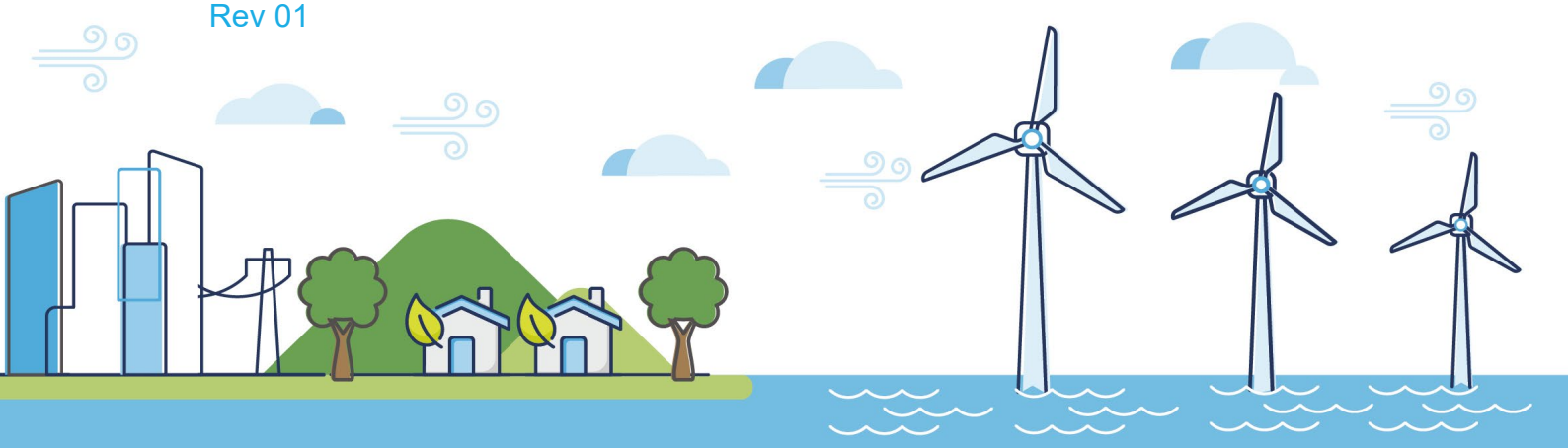

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Glossary of Acronyms

ADC	Areas of Distinctive Character
AfL	Agreement for Lease
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
CAA	Civil Aviation Authority
CCBC	Conwy County Borough Council
CCC	Cumbria County Council
CEA	Cumulative Effects Assessment
CNP	Critical National Priority
CPRE	Campaign to Protect Rural England
DCC	Denbighshire County Council
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
DTM	Digital Terrain Model
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Groups
EU	European Union
FCC	Flintshire County Council
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, 3rd Edition
HAT	Highest Astronomical Tide
HDD	Horizontal directional drilling
HFoV	Horizontal Field of View
HMP	His Majesty's Prison
HRA	Habitats Regulations Assessment
IALA	International Association of Lighthouse Authorities
ICAO	International Civil Aviation Organization
IEMA	Institute of Environmental Management and Assessment
IPMP	In Principle Monitoring Plan
LAT	Lowest Astronomical Tide
LCA	Landscape Character Area

LCC	Lancashire County Council
LCT	Landscape Character Type
LDNP	Lake District National Park
LDNPP	Lake District National Park Partnership
LDWA	Long Distance Walkers Association
LMP	Lighting Management Plan
MCA	Marine Character Areas
MCZ	Marine Conservation Zones
MEAS	Merseyside Environmental Advisory Service
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MOD	Ministry of Defence
MPPS	Marine Planning Policy Statement
MSL	Mean Sea Level
NCA	National Character Areas
NCEI	National Center for Environmental Information
NCLA	National Character Landscape Areas
NCR	National Cycle Route
NNR	National Nature Reserve
NPS	National Policy Statement
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
OS	Ordnance Survey
OSP	Offshore substation platform
OWF	Offshore Windfarm
PDE	Project Design Envelope
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
RPG	Registered Parks and Gardens
RSPB	Royal Society for the Protection of Birds
RYA	Royal Yachting Association
SAC	Special Area of Conservation
SAR	Search and Rescue
SCA	Seascape Character Area
SLA	Special Landscape Area

SLVIA	Seascape, Landscape and Visual Impact Assessment
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
SPS	Significant Peripheral Structures
SSSI	Site of Special Scientific Interest
TPT	Trans Pennine Trail
UK	United Kingdom
WHS	World Heritage Site
WMBC	Wirral Metropolitan Borough Council
WTG	Wind turbine generators
ZTV	Zone of Theoretical Visibility

Glossary of Unit Terms

cd	Candela
GW	Gigawatt
km	kilometre
kV	kilovolt
m	metre
MW	Megawatt

Glossary of Terminology

Applicant	Morecambe Offshore Windfarm Ltd
Agreement for Lease (AfL)	This refers to the Applicant's application for a Development Consent Order (DCO). An application consists of a series of documents and plans which are published on the Planning Inspectorate's (PINS) website.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
European sites	Designated nature conservation sites which include the National Site Network (designated within the United Kingdom) and Natura 2000 sites (designated in any European Union country). This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for certain topics. The EPP provides a mechanism to agree the information required to be submitted to PINS as part of the Development Consent Order application. This function of the EPP helps Applicants to provide sufficient information in their application, so that the Examining Authority can recommend to the Secretary of State whether or not to accept the application for examination and whether an appropriate assessment is required.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Inter-array cables	Cables which link the WTGs to each other and the OSP(s).
In-row	The distance separating WTGs in the main rows.
Inter-row	The distance between the main rows.
Landscape character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.

Morgan and Morecambe Offshore Windfarms: Transmission Assets	The transmission assets for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes the (OSP(s))[1], interconnector cables, Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV cables and associated grid connection infrastructure such as circuit breaker infrastructure. Also referred to in this chapter as the Transmission Assets, for ease of reading.
Offshore export cables	The cables which would bring electricity from the OSP(s) to the landfall.
Offshore substation platform(s)	A fixed structure located within the windfarm site, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable form for export to shore.
Onshore export cables	The cables which would bring electricity from landfall to the onshore project substation and from the onshore project substation to a National Grid substation.
Onshore project substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of electrical transformers.
Platform link cable	An electrical cable which links one or more OSP(s).
Safety zones	An area around a structure or vessel which should be avoided, as set out in the Energy Act 2004 and the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations due to the flow of water.
Seascape	Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other.

[1] At the time of writing the Environmental Statement (ES), a decision had been taken that the offshore substation platforms (OSP(s)) would remain solely within the Generation Assets application and would not be included within the Development Consent Order (DCO) Application for the Transmission Assets. This decision post-dated the Preliminary Environmental Information Report (PEIR) that was prepared for the Transmission Assets. The OSP(s) are still included in the description of the Transmission Assets for the purposes of this ES as the Cumulative Effects Assessment (CEA) carried out in respect of the Generation/Transmission Assets is based on the information available from the Transmission Assets PEIR.

Study area	This is an area which is defined for each Environmental Impact Assessment (EIA) topic which includes the windfarm site as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each EIA topic is intended to cover the area within which an effect can be reasonably expected. The study area for seascape, landscape and visual is a 60km radius area around the windfarm site, based on the Zone of Theoretical Visibility (ZTV) and area within which likely significant effects may occur.
Technical stakeholders	Technical consultees are considered to be organisations with detailed knowledge or experience of the area within which the Project is located and/or receptors which are considered in the Environmental Impact Assessment (EIA) and HRA. Examples of technical stakeholders include Marine Management Organisation (MMO), local authorities, Natural England and the Royal Society for the Protection of Birds (RSPB).
Visual amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating or travelling through an area.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables would be present.

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18 The future of renewable energy

A leading developer in Offshore Wind Projects

18 Seascape, Landscape and Visual Impact Assessment

18.1 Introduction

18.1 This chapter of the Environmental Statement (ES) describes the potential effects of the Morecambe Offshore Windfarm Generation Assets (the Project) on seascape, landscape and visual amenity. This chapter provides an overview of the existing environment, followed by an assessment of the potential effects and associated mitigation, where identified, for the construction, operation and maintenance, and decommissioning phases.

18.2 The Project includes the Generation Assets to be located within the windfarm site (wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s)). The Environmental Impact Assessment (EIA) of the transmission assets, including offshore export cables to landfall and onshore infrastructure, is part of a separate Development Consent Order (DCO) application as outlined in **Chapter 1 Introduction** (Document Reference 5.1.1).

18.3 This assessment has been undertaken with specific reference to the relevant legislation and guidance, of which the primary source are the National Policy Statements (NPSs). Details of these and the methodology used for the EIA and Cumulative Effect Assessment (CEA) are presented in **Chapter 6 EIA Methodology** (Document Reference 5.1.6) and **Section 18.7**.

18.4 This chapter informs the assessment in other ES chapters, where visual impacts identified may cause additional effects. The assessment therefore should be read in conjunction with following linked ES chapters:

- **Chapter 15 Marine Archaeology and Cultural Heritage** (Document Reference 5.1.15)
- **Chapter 19 Human Health** (Document Reference 5.1.19)
- **Chapter 20 Socio-economics, Tourism and Recreation** (Document Reference 5.1.20)

18.5 Inter-relationships with these chapters are further described in **Section 18.9**.

18.6 Additional key information to support the assessment includes:

- **Appendix 18.1 Seascape, Landscape and Visual Impact Assessment (SLVIA) Methodology** (Document Reference 5.2.18.1)
- **Appendix 18.2 SLVIA Preliminary Assessment** (Document Reference 5.2.18.2)

- **Appendix 18.3 SLVIA Viewpoint Assessment** (Document Reference 5.2.18.3)

18.2 Consultation

18.7 Consultation in regard to SLVIA has been undertaken in line with the general process described in **Chapter 6 EIA Methodology**. The key consultation elements undertaken to inform this ES include scoping (Scoping Opinion from the Planning Inspectorate (PINS) received on 2nd August 2022), comments received on the Preliminary Environmental Information Report (PEIR) which was published for statutory consultation in April 2023, and the Evidence Plan Process (EPP) via the Seascape, Landscape and Visual Expert Topic Group (ETG).

18.8 SLVIA ETG meetings were held on 7th December 2022, 13th June 2023, 23rd October 2023 and 12th January 2024 with attendees at some, or all meetings including the following organisations:

- Marine Management Organisation (MMO)
- Natural England
- National Trust
- Blackpool Council/Blackpool Enterprise Zone
- Wyre Council
- Sefton Council
- Merseyside Environmental Advisory Service (MEAS)
- Forest of Bowland National Landscape
- Arnside and Silverdale National Landscape

18.9 The viewpoint locations and approach to the definition of the worst-case scenario used in the assessment were also presented to statutory consultees for comment.

18.10 The Project's statutory consultation period under Section 42 of the Planning Act 2008 ran from 19th April to 4th June 2023. During the consultation, 11 exhibitions and eight pop-up events were held across North West England, North Wales and the Isle of Man, as well as an online webinar. The Project's consultation website provided a suite of materials and information, including photomontage visualisations of the Project. The PEIR was published as part of the statutory consultation which provided preliminary assessment information within its Chapter 18 SLVIA.

18.11 The feedback received through the EPP, the Scoping Opinion and the stakeholder comments on the PEIR have been considered in preparing this

ES. The key comments pertinent to this chapter are shown in **Table 18.1**, alongside details of how the Project team has had regard to the comments received and how they have been addressed within this chapter.

18.12 The consultation process is described further in **Chapter 6 EIA Methodology**. Full details of the consultation undertaken throughout the EIA process are presented in the Consultation Report (Document Reference 4.1) which is submitted as part of the DCO Application.

Table 18.1 Consultation responses received in relation to SLVIA and how these have been addressed in the ES

Consultee	Date	Comment	Response/where addressed in the ES
Scoping Opinion responses			
PINS (ref 3.12.1)	2nd August 2022	Consideration should be given to the possibility of significant effects at a distance of 60km from the Proposed Development and including potential effects on St Bees Head Heritage Coast.	The study area for the SLVIA has been defined as 60km from the windfarm site, as shown in **Figure 18.3** and relates to the Zone of Theoretical Visibility (ZTV) (**Figure 18.5**) as the zone within which likely significant effects may occur. St Bees Head Heritage Coast is located approximately 70km from the windfarm site and is outside the SLVIA study area. There is no potential for significant effects on the perceived character of St Bees Head Heritage Coast due to the very long distance between the Project, the lack of visibility and the baseline influence of operational Offshore Windfarms (OWFs) (Barrow, West of Duddon Sands, Ormonde and Walney OWFs) within the intervening area between the Heritage Coast and the windfarm site.
PINS (ref 3.12.2)	2nd August 2022	An assessment of landscape character effects within Wales or evidence demonstrating agreement with the relevant stakeholders to scope out these effects, should be included.	A preliminary assessment of landscape character effects within Wales is contained within **Appendix 18.2**. The assessment has found that there is no potential for significant effects on perceived landscape character within Wales due to the location of the Project at long distance over 46km from the Welsh coast. The baseline influence of operational OWFs (within the regional grouping formed by Burbo Bank and Burbo Bank Extension, North Hoyle, Gwynt y Môr and Rhyl Flats) within the

Consultee	Date	Comment	Response/where addressed in the ES
			intervening area between the Welsh coast and the windfarm site, is also such, that the additional influence of the Project is perceived as being subsumed behind existing windfarms, at greater distance and smaller scale than the operational OWFs. See below for consultation response to Natural Resource Wales (NRW).
PINS (ref 3.12.3)	2nd August 2022	An assessment of cumulative impacts during construction and decommissioning should be included that takes into account partially built WTGs, construction activity and equipment related to a potential cluster of new offshore windfarms in proximity to the Proposed Development as part of the Round 4 Leasing, or evidence demonstrating agreement with the relevant stakeholders to scope out these effects.	Cumulative effects on seascape, landscape and visual receptors are assessed in **Section 18.7**. The assessment includes consideration of cumulative effects during the construction and decommissioning phases.
PINS (ref 3.12.4)	2nd August 2022	The Inspectorate agrees that effects on an EEA [European Economic Area] State are unlikely and this matter can be scoped out of further assessment.	Transboundary effects are scoped out of further assessment in **Section 18.8**.
PINS (ref 3.12.5)	2nd August 2022	The Applicant should consider if relying on one scenario will be sufficient to capture the full range of effects. The assessment should be based on a scenario using the largest WTGs allowed under the DCO and one where the maximum number of WTGs is constructed.	The ES assessment presents an assessment of the maximum height wind turbine generators (WTGs) proposed as the worst-case effect scenario in **Section 18.6**. The parameters of the maximum height WTGs layout represent the parameters that would have maximum effects on seascape, landscape and visual receptors. The realistic worst-case scenario for the seascape, landscape and visual assessment is summarised in **Table 18.2**. The ES assessment also includes consideration of the

Consultee	Date	Comment	Response/where addressed in the ES
			effect of the maximum number of WTGs at lower heights for information, but this is not considered the worst-case scenario.
PINS (ref 3.12.6)	2nd August 2022	The Scoping Report states that the visual effects on people using recreational vessels on routes from Liverpool and Heysham will be considered in the assessment. The preliminary representative viewpoint list at Table 8.35 does not include any dynamic views on the vessel route. Consideration should be given to whether representative visualisations of points on the vessel route should be used to support the assessment.	Representative viewpoints on the ferry routes from Liverpool and Heysham to the Isle of Man have been excluded from the SLVIA, due to the proximity of operational OWFs in the seascape baseline, the reduced sensitivity of offshore receptors and practical limitations of shooting photography in dynamic views from the vessel routes, however effects on these receptors are assessed in **Section 18.6**
PINS (ref 3.12.7)	2nd August 2022	The ES should include a description of all measures proposed to mitigate adverse effects. Where mitigation would be secured through management plans or strategies, drafts or outlines of these should be submitted as part of the DCO application.	A description of embedded measures relevant to seascape, landscape and visual impacts is provided in **Section 18.3.3**.
Historic England	15th July 2022	Consideration should be given to the setting of heritage assets within the English coastal zone and included within any PEIR [ES] subsequently produced.	The setting of heritage assets within the English coastal zone is considered in **Chapter 15 Marine Archaeology and Cultural Heritage**.
		Operational OWFs off the Lancashire and Cumbria coasts should be considered in terms of cumulative effects on the setting the historic environment.	In accordance with Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3) and NatureScot guidance (para 7.13), existing projects and those which are under construction (**Table 18.39**) are included in the SLVIA baseline and described as part of the baseline conditions. An assessment of the effect of the Project is undertaken in conjunction with a baseline that includes these operational and under-construction projects as

Consultee	Date	Comment	Response/where addressed in the ES
			part of the main assessment in **Section 18.6**. A further assessment of the additional cumulative seascape, landscape and visual effects of the Project with other potential future projects is undertaken in the CEA in **Section 18.7**.
Natural England	21st July 2022	We advise that a 60km buffer to assess seascape impacts is used due to the elevated viewpoints within the local area. This will enable any impacts to be fully assessed, although we acknowledge that the Morecambe Offshore Windfarm may be visible but not dominant within the seascape.	The study area for the SLVIA has been defined as 60km from the windfarm site, as shown in **Figure 18.3** and relates to the ZTV (**Figure 18.5**) as the zone within which likely significant effects may occur. Impacts on seascape, landscape and visual receptors are assessed in **Section 18.6**.
		The assessment should identify, describe, and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information): plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.	An assessment of the additional cumulative seascape, landscape and visual effects of the Project with other potential future plans and projects is undertaken in the CEA in **Section 18.7**.

Consultee	Date	Comment	Response/where addressed in the ES
		The assessment should include relevant National Character Areas; local landscape character areas, mapped at a scale appropriate to the development site; and any relevant management plans or strategies pertaining to the area.	The preliminary assessment undertaken in **Appendix 18.2** and detailed assessment undertaken in **Section 18.6** includes National Character Areas (NCAs) and local landscape character areas (LCAs), and these are mapped at an appropriate scale in **Figures 18.10 - 18.11**).
		Consideration of national and local policies should inform the assessment of effects on St Bees Head Heritage Coast.	St Bees Head Heritage Coast is located approximately 70km from the windfarm site and is outside the SLVIA study area. There is no potential for significant effects on the perceived character of St Bees Head Heritage Coast due to the very long distance between the Project, the lack of visibility and the baseline influence of operational OWFs (Barrow, West of Duddon Sands, Ormonde and Walney Windfarms) within the intervening area between the Heritage Coast and the windfarm site.

Consultee	Date	Comment	Response/where addressed in the ES
EPP			
Lake District National Park (LDNP) Authority	8th July 2022	Viewpoint 1 Black Combe is a good viewpoint for views from the fells and is representative. Haverigg is outside the National Park but will be representative of views from lower level within it (e.g. Silecroft). However, in terms of receptor sensitivity, given National Parks are attributed the highest level of protection in legislation and national planning policy for landscape and scenic beauty, and many receptors will be there solely for the purpose of experiencing natural landscape and scenic beauty, LDNP would expect the highest level of sensitivity to be attributed to receptors within the National Park. If attributing lower sensitivity to receptors outside the park (e.g. at Haverigg), a second viewpoint at beach level from inside the park because with different receptor sensitivity, the significance identified in any LVIA may differ. Given the distance, LDNP do not feel a need to be involved in the expert topic groups.	**Section 18.6** includes an assessment of Viewpoint 1 Black Combe (**Figure 18.24**) and Viewpoint 24 Silecroft, shown on **Figure 18.47,** as representative of receptors at beach level on the coastline within the LDNP.
Natural Resources Wales	5th July 2022	Based on the location of the windfarm, the information provided below and the design envelope outlined within your Scoping Report, NRW Advisory are satisfied that the likelihood of significant visual effects on North Wales's National Parks and AONBs, singularly or in combination, is low. We are therefore content to defer to the advice provided by Natural England in this regard and will therefore not attend the upcoming SLVIA Expert Topic Group. Links to our relevant SLVIA guidance can be found on NRW's website and please see direct links below.	It is noted that NRW are satisfied that the likelihood of significant visual effects on North Wales's National Parks and Areas of Outstanding Natural Beauty (AONB), singularly or in combination, is low. A preliminary assessment of landscape character effects within Wales is contained within **Appendix 18.2**. The assessment has found that there is no potential for significant effects on perceived landscape character within Wales due to the location of the Project,

Consultee	Date	Comment	Response/where addressed in the ES
		Evidence reports on seascape and visual sensitivity to OWFs. Stage 1 - The relationship between distance of offshore turbine away from a sensitive receptor and magnitude of visual effects Stage 2 - OWF siting and design guidelines in relation to seascapes Stage 3 – Visual sensitivity of the marine settings of Wales's Designated Landscapes to OWFs	at a long distance of over 46km from the Welsh coast, and the baseline influence of existing operational OWFs. Reference is made to the relevant SLVIA guidance and evidence reports on seascape and visual sensitivity to OWFs.
MMO, Natural England, National Trust, Blackpool Council and Sefton Council	7th December 2022	Sefton and National Trust requested to be sent the viewpoint photomontages most relevant to them (including Formby Point, Southport, Crosby Beach, St Patrick's Chapel). Natural England advised that the ES assessment needs to consider the Arnside and Silverdale AONB, which is assessed in **Appendix 18.2** and **Section 18.5.** Agreement in approach to worst case definition as outlined in ETG meeting slides and described in **Section 18.3.2**. Agreement of viewpoints for the ES as set out in **Table 18.11**.	Viewpoint photomontages produced for the PEIR were shared with the ETG following the ETG meeting, including viewpoints from Formby Point, Southport, Crosby Beach and St Patrick's Chapel. The Arnside and Silverdale AONB is considered in the ES in **Appendix 18.2** and **Section 18.5 (Table 18.21)** and within the comments from Natural England in this consultation responses table.

Consultee	Date	Comment	Response/where addressed in the ES
MMO, Natural England, Blackpool Council, Sefton Council and Wyre Council	13th June 2023	The Project presented the revised windfarm site boundary and explained that the assessments would be updated for the ES for the revised boundary and project design information, as well as updated information on cumulative projects (Mona and Morgan Offshore Wind Projects) (noting that PEIR documents are now available for Morgan and Mona). Sefton Council asked if there would be a Consultation Report included within the DCO application. Wyre Council noted that there is a large population at Cleveleys and asked why there was not a viewpoint there.	The realistic worst-case scenario for the SLVIA is described in **Section 18.3.2** and shown in **Figure 18.1**. An updated CEA is undertaken in **Section 18.7** with the latest information on the Mona and Morgan projects. The Consultation Report is included as part of the DCO Application (Document Reference 4.1) which summarises the consultation and Project's responses. The effect of the Project on views from Cleveleys is assessed in **Section 18.6.3.5** with representative viewpoints also included nearby at Fleetwood (Viewpoint 8, **Figure 18.31**) and Blackpool (Viewpoint 9, **Figure 18.32**) which are representative of the effects experienced by residents of Cleveleys.
Natural England	17th October 2023	Natural England requested that the applicant consider including representative viewpoints from the Arnside and Silverdale AONB, and the Forest of Bowland AONB, to inform the assessment of effects on these nationally designated landscapes.	The Arnside and Silverdale AONB is located 52.7km from the windfarm site (**Figure 18.5a**) and the Forest of Bowland approximately 50km from the windfarm site (**Figure 18.5b**). The effect of the Project on the Arnside and Silverdale AONB and Forest of Bowland AONB is assessed as not significant in the preliminary assessment in **Table 18.21** due to the very long distances involved, the limited amount and small scale of the WTGs visible, and the low frequency of visibility at such long range. Representative viewpoints/ photomontages have not been included from these AONBs due to the lack of potential significant effects at such long range which is clear in the assessments made in **Table 18.21**

Consultee	Date	Comment	Response/where addressed in the ES
			and the published evidence base (White Consultants, 2020).
Statutory consultation feedback on the PEIR			
Civil Aviation Authority (CAA)	16th June 2023	*The CAA requires notification of a change to aviation obstacles if it or they are 100 metres or more above sea level, in accordance with Article 225A of the Air Navigation Order (2016). A Lighting Management Plan (LMP) must be agreed and implemented in consultation with the CAA in order for the UK to meet its international obligations under the Chicago Convention. The CAA uses requirements set out in Article 223 of the Air Navigation Order (2016) as the basis for its requirements.*	A Lighting Management Plan (LMP) would be agreed in consultation with the CAA. The Project would be lit in accordance with the requirements set out in Article 223 of the Air Navigation Order (2016). This is described further in **Table 18.2** and the visual effects of aviation lighting are assessed in **Section 18.6.3.7**.
Isle of Man Government	2nd June 2023	In respect of the Morecambe, Mona and Morgan projects – *'The work has been undertaken in accordance with accepted industry guidance (SLIVA). Whilst there are some points of detail that may merit further scrutiny/debate, which is often the case when judgement is involved, generally the findings are concurred with. They are all based on worst case scenarios. The preliminary SLVIA's establish that there will be no significant effects on seascape, landscape or visual receptors. Due to long distance, the large scale of the associated seascape and the presence of existing operational offshore windfarms. While they will be visible on the eastern horizon it is in the context of an expansive seascape with the presence of existing operational offshore windfarms'.*	Transboundary effects of the Project on seascape, landscape and visual receptors on the Isle of Man are scoped out of the SLVIA due to the Isle of Man being located outside the SLVIA study area, approximately 65km from the Project windfarm site. There is no potential for significant effects at such a range and given the presence of existing operational offshore windfarms in the intervening seascape.
National Resources Wales (NRW)	21st May 2023	*NRW agree with the conclusions on visual effects reached within the SLVIA and are satisfied with the decision to scope out designated landscapes in*	Agreement with NRW is welcomed with regards to the decision to scope out effects on designated landscapes in Wales and the

Consultee	Date	Comment	Response/where addressed in the ES
		Wales from the landscape and seascape assessments. *The SLVIA scopes out North Wales from the landscape and seascape assessment but includes two viewpoints from within the Clwydian Range and Dee Valley AONB which are assessed in Appendix 18.3, SLVIA Viewpoint Assessment. The closest to the development is viewpoint 19 which is located at the northern edge of the AONB, 48.65 km from the nearest turbine. The SLVIA concludes that the visual effect at this location would be moderate/minor and not significant. Potential cumulative effects are also assessed to be not significant (moderate/minor).* *Based on the distances of separation and the existing landscape/seascape context NRW are satisfied with the decision to scope out designated landscapes in Wales from the landscape and seascape assessments. NRW agree with the conclusions on visual effects reached in the SLVIA with regards to Viewpoint 19 and note that from locations in the Clwydian Range and Dee Valley AONB the development would be seen in the context of and behind more prominent turbines located closer to shore within existing offshore wind developments.* *NRW have no further comments at this stage regarding the proposals or SLVIA. If the proposals materially change between the PEIR and ES, such as by moving the array area significantly southwards or significantly increasing the height of the turbines, NRW would be happy to review again.*	conclusions on visual effects reached in the SLVIA (being not significant). Effects on seascape, landscape and visual receptors in Wales have been scoped out as not significant in the assessment undertaken in **Section 18.5.3.5**. This is due to the distance of the windfarm site and the number and extent of existing offshore windfarm developments off the Welsh coast. An assessment of representative viewpoints in North Wales has been undertaken in Appendix 18.3 and visualisations from viewpoints in North Wales are presented in **Figure 18.40 – Figure 18.46**. The windfarm site boundary has not changed to the south. Between PEIR and ES, the spatial extent of the windfarm site has been reduced eastward and the maximum assumed WTG height has been reduced. This results in the windfarm site having a narrower lateral spread (east to west) and the apparent scale of the WTGs would be smaller.
Natural England	2nd June 2023	Chapter 18 Seascape Landscape and Visual Impact Assessment	Agreement with Natural England on the 60km study area for the SLVIA is noted. The effect

Consultee	Date	Comment	Response/where addressed in the ES
		Whilst Natural England is unable to provide detailed comment on SLVIA at the PEIR stage due to resource limitations, we welcome the adoption of a 60km study area for the SLVIA. Noting that several English landscape designations are within the 60km buffer, Natural England welcomes further engagement on the SLVIA through ETGs prior to the submission of the ES.	of the Project on national landscape designations with the SLVIA study area is assessed in **Section 18.5** (Existing Environment) and **Section 18.6** (Assessment of Effects). Discussions held through the ETG processes as identified above.
Isle of Man Government		The exact layout of each Project's infrastructure is still being developed and will not be finalised until the Project has been granted consent by the Planning Inspectorate and Secretary of State for the Department for Energy Security and Net Zero. Due to the complexity of the Project, many details will likely remain unknown to us at the time of submitting our application, including the: ▪ Precise number, location and configuration of the wind turbine generators (WTGs), offshore substation platforms (OSP(s)) and any associated development. ▪ Type of foundation to install the turbines and any associated development. ▪ Exact height of the tip of the turbine rotors and the diameter of the rotors The work has been undertaken in accordance with accepted industry guidance (SLIVA). Whilst there are some points of detail that may merit further scrutiny/debate, which is often the case when judgement is involved, generally the findings are concurred with. They are all based on worst case scenarios.	Noted.

Consultee	Date	Comment	Response/where addressed in the ES
		The preliminary SLIVA's establish that there will be no significant effects on seascape, landscape or visual receptors. Due to long distance, the large scale of the associated seascape and the presence of existing operational offshore windfarms. While they will be visible on the eastern horizon it is in the context of an expansive seascape with the presence of existing operational offshore windfarms.	
NRW	21st May 2023	NRW (A) advise that offshore turbines with tip heights up to 350 m have an average 46.5 km buffer for low magnitudes of effect. Low magnitude buffer distances are an indication that there is a likelihood that there would be no significant effects on a high sensitivity receptor for the size of wind turbine at, or beyond, the distance stated. Designated landscapes on the north coast of Wales are all further than 46.5 km from the Morecambe Array Area. The Clwydian Range and Dee Valley AONB is the closest at approximately 47 km at its nearest point to the Array. The closest parts of Eryri NP and the Isle of Anglesey AONB are over 55 km from the Array.	Noted.

18.3 Scope

18.3.1 Study area

18.13 The windfarm site (encompassing all Project infrastructure) is located in the Eastern Irish Sea and encompasses a seabed area of 87km^2. The windfarm is approximately 30km, from the Lancashire coast.

18.14 The study area for the SLVIA is shown in **Figure 18.3** and **18.5**.

18.15 The spatial scope (study area) of the SLVIA is defined as 60km from the Project windfarm site.

18.16 Broadly, the SLVIA study area, shown in **Figure 18.3**, is defined by an eastern terrestrial area, including the English counties of Cumbria, Lancashire and Merseyside; a southern terrestrial area, including the Welsh counties of Flintshire, Denbighshire, Conwy, Gwynedd and the Isle of Anglesey; and a western offshore area defined by the waters of the Irish Sea and the Isle of Man.

18.17 The SLVIA study area is defined as a radius of 60km based on the outer limit of the area where significant effects could occur, based on professional judgement, guidance, the ZTV (**Figures 18.5** – **Figure 18.14**) and consultation undertaken in relation to SLVIA (**Section 18.2**).

18.3.2 Realistic worst-case scenario

18.18 The final design of the Project would be confirmed through detailed engineering design studies that would be undertaken post-consent to enable the commencement of construction. To provide a precautionary but robust impact assessment at this stage of the development process, realistic worst-case scenarios have been defined. The realistic worst-case scenario (having the most impact) for each individual impact is derived from the Project Design Envelope (PDE) to ensure that all other design scenarios would have less or the same impact. Further details are provided in **Chapter 6 EIA Methodology**. This approach is common practice for developments of this nature, as set out in Planning Inspectorate Advice Note Nine: Rochdale Envelope (PINS, 2018).

18.19 The realistic worst-case scenario for the SLVIA is summarised in **Table 18.2**. This is based on the Project parameters described in **Chapter 5 Project Description** (Document Reference 5.1.5). The design envelope presented has been refined as much as possible between PEIR and ES, presenting a Project description with design flexibility only where it is needed.

18.20 The spatial extent of the windfarm site has been reduced eastward since PEIR and the maximum height of the WTGs has been reduced, with a narrower range between the least (30) and maximum (35) number of WTGs; and a

narrower range between the smallest WTG considered (290m to blade tip above Highest Astronomical Tide (HAT)) and the largest WTG considered (310m to blade tip above HAT).

18.21 In its Scoping Opinion, PINS advised with regards to the definition of worst-case scenario, that further consideration should be given to whether one scenario is sufficient to capture the full range of effects and that *'subject to agreement with other consultation bodies, the ES should present assessments based on a scenario using the largest WTGs allowed under the DCO and one where the maximum number of WTGs is constructed'* (PINS, 2022).

18.22 The SLVIA undertaken for the ES presents assessment of a single worst-case scenario based on using the largest WTGs allowed under the DCO (the maximum height WTGs) as per the dimensions in **Table 18.2** and the indicative worst-case WTG layout shown in **Figure 18.1** comprising 30 WTGs at the maximum height of 310m above HAT to blade tip. These parameters represent the parameters that would have maximum effects on seascape, landscape and visual receptors, in accordance with the Rochdale Envelope approach set out in Planning Inspectorate Advice Note Nine: Rochdale Envelope (PINS, 2018). A scenario showing the maximum number of WTGs is also presented in **Figure 18.2** comprising 35 WTGs at the lower height of 290m above HAT to blade tip.

18.23 The scenario using the maximum height WTGs (30 x 310m WTGs) is considered to represent the worst-case scenario due to the wider geographic extent of the ZTV shown in **Figure 18.5**, compared to the ZTV of the maximum number of smaller WTGs (35 x 290m WTGs) shown in **Figure 18.4,** and the larger apparent scale of the maximum height WTGs (310m blade tip), compared to the smaller apparent scale of the lower height WTGs under consideration (290m blade tip). This is evident when comparing the wireline visualisations showing the appearance of the maximum height WTGs layout in **Figure 18.24** to **18.47** compared the wirelines showing the lower height WTG layout (**Figure 18.48** to **18.71**).

18.24 The assessment of the worst-case scenario for each receptor establishes the maximum potential adverse impact and as a result, impacts of greater adverse significance would not arise should any other development scenario to that assessed within this Chapter be taken forward in the final scheme design, such as one where the maximum number of smaller WTGs (35) is constructed at the lower WTG blade tip height (290m).

18.25 The maximum height/lower number of WTGs worst-case layout (**Figure 18.1**) represents the parameters that would have maximum effects on seascape, landscape and visual receptors and it is the effects of this worst-case scenario that is assessed in the ES. Effects arising from any other scenario within these

maximum parameters, including those of the lower height/maximum number of WTGs (**Figure 18.2**) would not be greater than those assessed in this SLVIA.

18.26 The realistic worst-case scenario for the SLVIA is summarised in **Table 18.2**.

Table 18.2 Realistic worst-case scenario for SLVIA

Impact	Worst-case scenario	Notes and rationale
Construction and decommissioning phase		
Inter-array and platform link cables	▪ Total inter-array cable length: 70km ▪ Total platform link cable length: 10km	The parameters represent the maximum influence of vessels that would potentially affect seascape, landscape and visual receptors during the inter-array cable and platform link cable corridor construction phase.
WTGs	**Maximum height WTGs scenario** ▪ Maximum number of WTGs: 30 ▪ Blade tip height: 310m above HAT (315m above mean sea level (MSL) ▪ Maximum rotor diameter: 280m ▪ Maximum hub height: 170m above HAT (175m above MSL) Assumed WTG locations as per **Figure 18.1**.	The parameters represent the maximum influence of construction of the WTGs in the windfarm site that would potentially affect seascape, landscape and visual receptors during the construction phase.
OSP	▪ Maximum number of OSPs: 2 ▪ Topside structure length and width: 50m x 50m ▪ Topside height: 50m above HAT ▪ Height of lightning protection & ancillary structures: 70m above HAT Assumed OSP locations as per **Figure 18.1**.	The parameters represent the maximum influence of construction of the OSPs in the windfarm site that would potentially affect seascape, landscape and visual receptors during the construction phase.
Vessels and helicopters	▪ Vessels: Maximum number of vessels on site at any one time: 37 ▪ Maximum number of return trips per year: 2,583 ▪ Helicopters: 800 return trips	The parameters represent the maximum number of helicopters and vessels at the windfarm site that could potentially affect seascape, landscape and visual receptors during the construction phase.

Impact	Worst-case scenario	Notes and rationale
		It is anticipated that helicopters would travel from Blackpool or Liverpool, however this is indicative at this stage and subject to change.
Operation and maintenance phase		
WTGs	**Maximum height WTGs scenario:** ▪ Maximum number of WTGs: 30 ▪ Blade tip height: 310m above HAT (315m above MSL) ▪ Maximum rotor diameter: 280m ▪ Maximum hub height: 170m above HAT (175m above MSL) Assumed WTG locations as per **Figure 18.1**.	The ES presents the assessment of the maximum height WTGs proposed. The parameters of the maximum height WTGs layout represent the parameters that would have maximum effects on seascape, landscape and visual receptors. The worst-case layout (**Figure 18.1**) has WTGs located to full extent of the windfarm site and in positions that are weighted towards the coastward perimeters of the windfarm site, to represent the maximum effect in terms of the proximity, scale and spread of the WTGs in coastal views in all directions. WTGs with the highest 310m blade tip height would have a wider geographic extent of effect over a larger ZTV than the lower 290m blade tip height for the smaller WTGs scenario. 310m WTGs would appear to have a larger scale in views than the 290m WTGs, both in terms of their overall blade tip height (which is 20m higher), but also in terms of the appearance of the larger rotor (280m). The larger 310m blade tip height WTG would also result in a greater scale contrast with existing operational WTGs. The potential effect that results from additional WTGs of smaller size is considered to be outweighed by the larger height and scale of the 310m WTGs, with the overall area occupied by WTGs being equal.

Impact	Worst-case scenario	Notes and rationale
Vessel and helicopters	▪ No planned helicopter trips but remain possible e.g. for crew transfer ▪ 384 vessel movements during a standard year, 832 vessels during a 'heavy maintenance' year	
Foundation substructures	▪ Multi-leg foundations (jacket) ▪ Number of legs per WTG/OSP: 4	The worst case for the SLVIA assumes that the foundation substructure design would be a 4-legged jacket foundation substructure. Field survey and experience of the visual effects of existing OWFs suggests that jacket foundations are worst case for visual impacts. The foundation substructures are assumed to have a working platform and tower interface, where the tower connects with the jacket foundation structure. The jacket foundations are assumed to have four sides and four legs, supported by cross braces and painted yellow for navigational marking.
WTG lighting	**Maximum height WTGs scenario** ▪ Maximum number of WTGs: 30 ▪ Hub height (height of aviation light): 170m above HAT ▪ Red, medium intensity aviation warning lights (2000 candela (cd)) located on either side of WTG nacelle of all peripheral WTGs of layout shown in **Figure 18.17** ▪ Marine aid to navigation lights fitted at platform level on significant peripheral structures (SPS) as shown in **Figure 18.17**	The parameters represent the maximum WTG lighting that may potentially affect seascape, landscape and visual receptors at night. The WTGs and offshore substations would be lit in accordance with the International Association of Lighthouse Authorities (IALA) standards and CAA requirements, based on the following further assumptions: ▪ WTGs are located together in a group, therefore with the permission of the CAA, only those on the periphery of the group would be fitted with an aviation light (as indicated in **Figure 18.17**). ▪ WTGs would be fitted with at least one medium intensity steady red light positioned as close as

Impact	Worst-case scenario	Notes and rationale
		reasonably practicable to the top of the fixed structure. ▪ Aviation warning lights would flash simultaneously with a Morse W flash pattern and be able to be switched on and off by means of twilight switches ▪ Aviation warning lights would have reduced intensity at and below the horizontal and allow a further reduction in lighting intensity when the visibility in all directions from every WTG is more than 5km ▪ Search and rescue (SAR) lighting of each of the non-periphery WTGs would be combi infra-red (IR)/200cd steady red aviation hazard lights, which are not assessed, as they would not be switched during normal operations and only during SAR operations ▪ All WTGs would be fitted with a low intensity light for the purpose of helicopter winching (green hoist lamp) and would also be fitted with suitable illumination (minimum one 5cd light) for identification signs ▪ Marine aid to navigation lights would be synchronised to display simultaneously an IALA “special mark” characteristic, flashing yellow, with a range of not less than 5nm

Impact	Worst-case scenario	Notes and rationale
OSPs	▪ Maximum number of OSPs: 2 ▪ Topside structure length and width: 50m x 50m ▪ Highest point of topside (excluding helideck and lightning protection): 50m above HAT ▪ Highest point of topside (including helideck and lightning protection): 70m above HAT Assumed locations as per **Figure 18.1**.	The parameters represent the maximum number, size and proximity of OSPs to the coast that would potentially affect seascape, landscape and visual receptors. Indicative locations of the OSPs have been assumed for the SLVIA, located along the closest shoreward perimeter of the windfarm site, as shown in **Figure 18.1**. The SLVIA worst-case assumes that each OSP would have a topside structure of maximum size 50m x 50m and a maximum height (excluding helideck or lightning protection) of 50m above HAT. The substructure type is assumed to be jacket foundations, supported with cross braces and painted yellow for navigational marking. OSPs are shown in a selection of photomontage visualisations from the closest viewpoints from the windfarm site.

18.3.3 Summary of mitigation embedded in the design

18.27 This section outlines the embedded mitigation relevant to the SLVIA, which has been incorporated into the design of the Project (as summarised in **Table 18.3**). Where additional mitigation measures are proposed, these are detailed in the impact assessment (**Section 18.6**).

Table 18.3 Embedded mitigation measures related to the SLVIA

Parameter	Mitigation measures embedded into the design of the Project
WTG layout	The spatial extent of the windfarm site has been reduced eastward between the PEIR and ES, such that the windfarm site now occupies 87km^2 compared to the 125km^2 assessed in the PEIR. The reduced spatial extent ensures that there is a reduction in the apparent lateral spread of WTGs when viewed from the coast, particularly from the north and south.
WTGs	The maximum blade tip height is 310m above HAT and the maximum rotor diameter is 280m. This commitment defines the maximum height of WTGs that could be installed under the DCO. The maximum height of the WTGs has been reduced from the 345m blade tip height considered in the PEIR, leading to a reduction in the ZTV and apparent scale of WTGs.
Foundation substructures	The selection of the foundation type would primarily be based upon the site conditions, combined with the WTG that is selected.
OSPs	There would be up to two OSPs installed. The exact locations, design and visual appearance would be subject to a structural study and electrical design, which is expected to be completed post-consent.
Lighting	The Project would comply with legal requirements with regards to shipping, navigation and aviation marking and lighting. Marking and lighting of the Project would be undertaken in accordance with relevant industry guidance and as advised by relevant stakeholders. This commitment ensures compliance with lighting and marking requirements but also sets the relevant parameters for the SLVIA of the Project in relation to night-time effects assessment.
Lighting	Marine navigational lights would be fitted at the platform level on significant peripheral structures, synchronised to display IALA 'special mark' characteristic, flashing yellow, with a range not less than 5nm. A lighting scheme would be agreed for the aviation lighting of structures (WTGs and OSP(s)) with relevant authorities. This commitment provides for minimising lighting impacts as far practicable, whilst ensuring compliance with legal requirements for lighting and marking the Project. Aviation warning lights would have reduced intensity at and below the horizontal and allow a further reduction in lighting intensity when the visibility in all directions from every WTG is more than 5km.

18.3.3.1 Good Seascape and Landscape Design

18.28 Four design principles were established by the Project to help shape the design of the Project from its outset. These are set out in more detail in the Design Statement (Document Reference 4.3) and include, within the 'Planet Positive' Design Principle the importance of responding to *"its seascape and views out to sea"*. The Design Principles of the Project in full are:

- EXCELLENCE IN SAFETY: a design which always respects the safety of people, communities and the environment, which meets UK statutory and regulatory requirements and current HSEQ and site environmental requirements
- FUNCTIONALITY & ADAPTABILITY: a design which recognises the advancing nature of technology and is efficient in its use of resources and energy generation throughout the life of the Project
- SYNERGIES & RE-USE: a design which through proactive and thorough coordination and collaboration with other users, maximises the use of previously developed seabed and the benefits of the project
- PLANET POSITIVE: a design which maximises renewable energy, is adapted for our changing climate, responds to its seascape and to views out to sea and (where possible) will enhance the environment and its biodiversity

18.29 The Design Statement also describes the site selection and evolution including how the boundary of the windfarm site was refined from The Crown Estate Leasing Round 4 until the submission of the DCO Application.

18.30 In terms of maintaining Good Design post consent the Design Statement also includes a Design Code, within which DC3 states that consideration will be given to micro-siting including *"for seascape, landscape and visual impact reasons"*. DC3 in full states:

"DC3: As a minimum, the position of WTGs shall be arranged in straight lines with at least two consistent lines of orientation, and OSP(s) shall be located within the windfarm, with the exact locations to be determined, with consideration of micro siting allowances agreed in consultation with the MCA, including for seascape, landscape and visual impact reasons. The spacing between these straight lines shall comply with MGN 371 and MGN 654 (i.e. SAR lanes will be at least 500m in width tip to tip)".

18.31 The operation of both Design Principles established to shape design from the outset of the Project and the Design Code to do so post consent have therefore been put in place with a view to achieving good design, including considerations of seascape and landscape effects.

18.4 Impact assessment methodology

18.4.1 Policy, legislation and guidance

18.4.1.1 National Policy Statements

18.32 The assessment of potential effects on the SLVIA has been made with specific reference to the relevant NPS. These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to the Project are:

- Overarching National Policy Statement for Energy (EN-1), (Department for Energy Security and Net Zero (DESNZ), 2023a)
- National Policy Statement for Renewable Energy Infrastructure (EN-3), (DESNZ, 2023b)

18.33 The specific assessment requirements for SLVIA, as detailed in the NPS, are summarised in **Table 18.4,** together with an indication of the section of the ES chapter where each is addressed.

18.34 **Table 18.4** also lists the legislation relevant to the assessment of the effects on seascape, landscape and visual receptors.

18.4.1.2 Additional relevant legislation, policy and guidance

18.35 Additional relevant legislation, policy is also considered in **Table 18.4**, including the following:

- Countryside and Rights of Way Act 2000 (CRoW)
- Levelling-up and Regeneration Act 2023
- United Kingdom (UK) Marine Planning Policy Statement (MPPS) (2011)
- Future Wales: The National Plan 2040
- Planning Policy Wales Edition 11
- Welsh National Marine Plan November 2019

Table 18.4 NPS and additional relevant policy, legislation and guidance requirements

Requirement	Reference	ES reference
Countryside and Rights of Way Act 2000 (CRoW)		
AONBs are areas designated under section 82 of the CRoW Act (2000). Section 82(1) of the CRoW Act defines an AONB in England as: *"Where it appears to Natural England that an area which is in England but not in a National Park is of such outstanding natural beauty that it is desirable that the provisions of this Part relating to areas designated under this section should apply to it, [Natural England may], for the purpose of conserving and enhancing the natural beauty of the area, by order designate the area for the purposes of this Part as an area of outstanding natural beauty."* The UK Government current online Guidance on AONBs confirms with regard to the above legislation that: *"An area of outstanding natural beauty (AONB) is land protected by the Countryside and Rights of Way Act 2000 (CROW Act). It protects the land to conserve and enhance its natural beauty".* The CRoW Act places a general duty on public bodies i.e. 'relevant authorities' including for example the Councils, statutory undertakers and in the context of the DCO, the Secretary of State, as follows: *"(1) In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty, a relevant authority shall have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty" (S85).*	Section 82(1)	The effect of the Project on AONBs in England is considered in the ES in **Appendix 18.2** and **Section 18.5** (**Table 18.21**) and within the comments from Natural England in the consultation responses in **Table 18.1**. The Arnside and Silverdale AONB is located 52.7km from the windfarm site (**Figure 18.5a**) and the Forest of Bowland approximately 50km from the windfarm site (**Figure 18.5b**). The effect of the Project on the Arnside and Silverdale AONB and Forest of Bowland AONB is assessed as not significant in the preliminary assessment in **Table 18.21**. In Wales, there are no AONBs located within 48km of the windfarm site and agreement with NRW has been reached with regards to scoping out effects on designated landscapes in Wales on the basis that effects of the Project on AONBs in Wales would be not significant (**Table 18.1**). Regard has been had to the purpose of conserving and enhancing the natural beauty of the AONBs in the SLVIA study area through the siting and design of the Project, which is located a long distance offshore, with no AONBs located within 48km of the windfarm site meaning that the statutory purpose of AONB designations within the study area would not be compromised as a result of the Project.

Requirement	Reference	ES reference
Levelling-up and Regeneration Act 2023 (26th December 2023)		
All relevant authorities 'must seek to further the purposes' of the designated landscape; for AONBs, this purpose is conserving and enhancing natural beauty of the area. This duty features in Section 245 of the Levelling-up and Regeneration Act 2023 and it overrides and strengthens the previous duty to 'have regard' to the purposes. Since November 2023, AONBs have also been called 'National Landscapes', although the legal definition remains AONB (as per Section 245 of the Levelling-up and Regeneration Act 2023).	Section 245	Regard has been had to the purpose of conserving and enhancing the natural beauty of the AONBs in the SLVIA study area through the siting and design of the Project, which is located a long distance offshore, with no AONBs located within 48km of the windfarm site meaning that the statutory purpose of AONB designations within the study area would not be compromised as a result of the Project.
NPS for Energy (EN-1) (DESNZ, 2023a)		
Paragraph 3.3.62 states that *"Government has concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure. Section 4.2 states which energy generating technologies are low carbon and are therefore CNP infrastructure."* and paragraph 3.3.63 goes on to state that *"Subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible".*	Paragraph 3.3.63 and 3.3.63	The Project has applied the mitigation hierarchy effectively through the embedded measures incorporated within the Project design (**Chapter 5 Project Description** and **Section 18.3.2 - 18.3.3**). Likely significant effects on seascape, landscape and visual receptors have been reduced or mitigated following the mitigation hierarchy, including embedded measures to reduce harms, such as on the special qualities of designated landscapes and views. The residual effects arising from the Project (Critical National Priority (CNP) infrastructure) that are not capable of being addressed by application of the mitigation hierarchy are assessed in **Section 18.5** to **18.7**.

Requirement	Reference	ES reference
Paragraph 4.3.11 advises that *"In some instances, it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case".* At paragraph 4.3.12 it is set out that, *"Where some details are still to be finalised, the ES should, to the best of the applicant's knowledge, assess the likely worst-case environmental, social and economic effects of the proposed development to ensure that the impacts of the project as it may be constructed have been properly assessed"*.	Paragraph 4.3.11 and 4.3.12	**Chapter 5 Project Description** of the ES sets out the details of the Project and which aspects are defined in detail. **Section 18.3.2** of this SLVIA chapter sets out the maximum design parameters that have been defined to ensure that the worst-case scenario seascape, landscape and visual effects are assessed.
In relation to the topic of Criteria for 'Good Design' for Energy Infrastructure Paragraph 4.7.1 advises that *"The visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object – be it a building or other type of infrastructure – including fitness for purpose and sustainability, is equally important."* and, in Paragraph 4.7.2, *"Applying good design to energy projects should produce sustainable infrastructure sensitive to place, including impacts on heritage, efficient in the use of natural resources, including land-use, and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area".*	Paragraph 4.7.1 and 4.7.2	**Section 18.3.3** sets out how the Project responds to 'good design' in respect of seascape, landscape and visual receptors, including how its appearance provides a 'good aesthetic', as far as is possible. Opportunities for enhancement of quality of an area through the 'Good Design' of an offshore windfarm are limited due to the technical and economic requirements associated with producing renewable energy as well as other environmental factors. The need to retain flexibility of WTG numbers, size and location within the windfarm site through the planning stages and assessment of a worst-case scenario (a necessary part of the process that is recognised through the NPS at paragraphs 4.3.11 and 4.3.12) also limits opportunities for good design to a degree, however the Project has undertaken and applied the principles of good design as far as practicable to arrive at the proposed Project design selected for the DCO Application.

Requirement	Reference	ES reference
		Design principles were established at the outset of the Project to guide the design of the Project and are set out in the Design Statement (Document Reference 4.3).
Paragraph 4.7.5 advises that Applicants need to consider the importance of 'good design' criteria and demonstrate this in their applications stating that *"a project board level design champion could be appointed, and a representative design panel used to maximise the value provided by the infrastructure. Design principles* should be established from the outset of the project to guide the development from conception to operation".* *(footnote 122 in EN-1*) "Design principles should take into account any national guidance on infrastructure design, this could include for example the Design Principles for National Infrastructure published by the National Infrastructure Commission, the National Design Guide and National Model Design Code, as well as any local design policies and standards. See https://nic.org.uk/studies-reports/design-principles-for-national-infrastructure; https://www.gov.uk/government/publications/national-design-guide; https://www.gov.uk/government/publications/national-model-design-code".*	Paragraph 4.7.5	The design of the Project cannot be fixed at this time. This is recognised by NPS EN-1 Paragraph 4.3.11 and NPS EN-3 Paragraphs 2.6.1 to 2.6.3. Design principles have been considered through the design process as part of the preparation of the ES. The Project considers that there would be merit in appointing a senior member of the Project team as design champion – ensuring that design options are explored, advice taken and decisions made to achieve a well-considered and good design. Design principles have been established to guide the design of the Project and are set out in the Design Statement (Document Reference 4.3).
Paragraph 4.7.7 sets out that the applicants should be able to demonstrate *"how the design process was conducted and how the proposed design evolved. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected"*. Paragraph 4.7.12 goes on to identify that the SoS *"should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy. Many of the*	Paragraph 4.7.7 and 4.7.12	The evolution of the Project design to date is set out in **Chapter 4 Site Selection and Assessment of Alternatives** (Document Reference 5.1.4) and in the Design Statement (Document Reference 4.3). The duration of the impacts is addressed in **Section 18.6** of this chapter.

Requirement	Reference	ES reference
wider impacts of a development, such as landscape and environmental impacts, will be important factors in the design process".		
In relation to good design paragraph 4.7.11 advises that *"The Secretary of State should be satisfied that the applicant has considered both functionality (including fitness for purpose and sustainability) and aesthetics (including its contribution to the quality of the area in which it would be located, any potential amenity benefits, and visual impacts on the landscape or seascape) as far as possible".*	Paragraph 4.7.11	Impacts to seascape, landscape and visual receptors are assessed in **Section 18.6** and **Section 18.7.** The evolution of the Project design to date is set out in **Chapter 4 Site Selection and Assessment of Alternatives and** in the Design Statement (Document Reference 4.3).
Paragraph 5.10.1 notes that *"the landscape and visual effects of energy projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development. In this context, references to landscape should be taken as covering seascape and townscape where appropriate".*	Paragraph 5.10.1	**Sections 18.5** to **18.7** assess both the sensitivity of the landscape to change, as well as the magnitude of change resulting from the Project, to arrive at a case-by-case assessment of significance.
Paragraph 5.10.4 *"Landscape effects arise not only from the sensitivity of the landscape but also the nature and magnitude of change proposed by the development, whose specific siting and design make the assessment a case-by-case judgement".*	Paragraph 5.10.4	**Sections 18.5** to **18.7** assesses both the sensitivity of landscape, seascape and visual receptors; and the magnitude of change resulting from the Project, whose specific siting and design make this a case-by-case judgement.
Paragraph 5.10.5 advises that *"Virtually all nationally significant energy infrastructure projects will have effects on the landscape, but there may also be beneficial landscape character impacts arising from mitigation".* Paragraph 5.10.6 goes on to state "*Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate."*	Paragraph 5.10.5 and 5.10.6	The quality, value and sensitivity of the landscape to change are considerations of the assessments set out in **Sections 18.5** to **18.7**. The design of the Project has been considered and addressed the potential effects on landscape in order to 'minimise harm' by providing embedded environmental measures that address seascape, landscape and visual effects as presented in **Sections 18.5** to **18.7** of this Chapter.

Requirement	Reference	ES reference
Paragraph 5.10.7 states that *"National Parks, the Broads and AONBs have been confirmed by the government as having the highest status of protection in relation to landscape and natural beauty. Each of these designated areas has specific statutory purposes. Projects should be designed sensitively given the various siting, operational, and other relevant constraints."*	Paragraph 5.10.7	The effects of the Project on National Parks and AONBs within the SLVIA study area are assessed in **Sections 18.5** to **18.7**.
Paragraph 5.10.8 advises that *"The duty to seek to further the purposes of nationally designated landscapes also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. In these locations, projects should be sensitively given the various siting, operational, and other relevant constraints. The Secretary of State should be satisfied that measures which seek to further the purposes of the designation are sufficient, appropriate and proportionate to the type and scale of the development."*	Paragraph 5.10.8	The potential for the Project to impact upon the nationally designated areas has been considered in **Sections 18.5** to **18.7**. Regard has been paid to the purpose and special qualities of these nationally designated landscapes.
Paragraph 5.10.10 advises that *"Heritage Coasts are defined areas of undeveloped coastline which are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors".*	Paragraph 5.10.10	The potential for the Project to impact upon Heritage Coasts has been considered in **Sections 18.5** to **18.7**.
Paragraph 5.10.12 advises that "*Outside nationally designated areas, there are local landscapes that may be highly valued locally".* However, it states that *"locally valued landscapes should not be used in themselves to refuse consent, as this may unduly restrict acceptable development". "Where a local development document in England or a local development plan in Wales has policies based on landscape or waterscape character assessment, these should be paid particular attention".*	Paragraph 5.10.12	The value of the local landscape is a consideration within the assessment of effects on landscape and seascape character in **Sections 18.5** to **18.7**. This includes regard to the character, features and special qualities of locally designated landscapes.

Requirement	Reference	ES reference
NPS EN-1 reiterates the likelihood of such infrastructure having visual effects, noting at Paragraph 5.10.13 that *"All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites."* Paragraph 5.10.14 goes on to state "*The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project."* In addition, it is recognised in paragraph 5.10.15 that *"Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast."*	Paragraph 5.10.13, 5.10.14 and 5.10.15	The impacts on visual receptors are assessed in **Sections 18.5** to **18.7**. This includes consideration of visibility from undeveloped coast. The benefits (including need) of the Project are set out in **Chapter 4 Site Selection and Assessment of Alternatives** and **Chapter 2 Need for the Project** (Document Reference 5.1.2) and the Planning Development Consent and Need Statement (Document Reference 4.8).
Paragraph 5.10.16 sets out the need to carry out a landscape and visual assessment in accordance with published guides. Relevant guides are listed as The Landscape Institute and Institute of Environmental Management and Assessment: Guidelines for Landscape and Visual Impact Assessment (2013, 3rd edition) (GLVIA3); and Landscape and Seascape Character Assessments – https://www.gov.uk/guidance/landscape-and-seascape-character-assessments; or any successor documents.	Paragraph 5.10.16	The guidance that has been considered/followed in preparing this chapter is set out in **Section 18.4.1** and **Appendix 18.1** including GLVIA3 (Landscape Institute, 2013) and the relevant seascape and landscape character assessments.
Paragraph 5.10.17 goes on to state that *"The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales".* In paragraph 5.10.18 it continues *"For seascapes, applicants should consult the Seascape*	Paragraph 5.10.17 and 5.10.18	**Sections 18.5** to **18.7** take into account the relevant landscape and seascape character assessments as listed in **Table 18.6**.

Requirement	Reference	ES reference
Character Assessment and the Marine Plan Seascape Character Assessments, and any successors to them".		
Paragraph 5.10.19 states *"The applicant should consider landscape and visual matters in the early stages of siting and design, where site choices and design principles are being established. This will allow the applicant to demonstrate in the ES how negative effects have been minimised and opportunities for creating positive benefits or enhancement have been recognised incorporated into the design, delivery and operation of the scheme."*	Paragraph 5.10.19	**Chapter 4 Site Selection and Assessment of Alternatives** sets out the iterative process that has influenced the design of the Project and how the design process was conducted. The Design Statement also sets out considerations that informed the offshore design for the array and the guidance that would be considered going forward.
Paragraph 5.10.20 states that *"The assessment should include the effects on landscape components and character during construction and operation. For projects which may affect a National Park, The Broads or an Areas of Outstanding Natural Beauty the assessment should include effects on the natural beauty and special qualities of these areas."*	Paragraph 5.10.20	There are no effects on landscape components as a result of the offshore infrastructure of the Project. There are however potential effects on seascape components of landscape character, and perceived character of landscape receptors and these are assessed in **Sections 18.5** to **18.7**.
Paragraph 5.10.21 advises that *"The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include light pollution effects, including on dark skies, local amenity, and nature conservation."*	Paragraph 5.10.21	The visual effects of the offshore elements of the Project during construction and operation and maintenance, are addressed in **Sections 18.5** to **18.7**.
At paragraph 5.10.22 advises that *"The assessment should also address the landscape and visual effects of noise and light pollution, and other emissions (see Section 5.2 and Section 5.7), from construction and operational activities on residential amenity and on sensitive locations, receptors and views, how these will be minimised".*	Paragraph 5.10.22	The visual effects of lighting are assessed in **Section 18.6** and **Section 18.7**. **Section 18.3.3** of this Chapter sets out the embedded environmental measures that are included in the Project. This includes for minimising lighting impacts as far practicable, whilst ensuring compliance with legal requirements for lighting and marking the Project.

Requirement	Reference	ES reference
At paragraph 5.10.25 it is suggested that *"In considering visual effects it may be helpful for applicants to draw attention, in the supporting evidence to their applications, to any examples of existing permitted infrastructure they are aware of with a similar magnitude of impact on equally sensitive receptors. This may assist the Secretary of State in judging the weight they should give to the assessed visual impacts of the proposed development".*	Paragraph 5.10.25	Baseline OWFs are referenced in **Sections 18.5** to **18.7**.
Paragraph 5.10.26 advises that "*Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function – for example, electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function".*	Paragraph 5.10.26	The balance between mitigation of landscape and other environmental effects and operational constraint/reduction in function is considered in **Chapter 4 Site Selection and Assessment of Alternatives**. As described in **Section 18.3.2**, between PEIR and the ES, design refinements were made based on ongoing engineering studies, and the parameters in the worst-case scenarios were updated. The spatial extent of the windfarm site has been reduced eastward and the maximum height of the WTGs has been reduced, with a narrower maximum height range between 290m and 310m to blade tip (above HAT) (compared to the 345m above HAT maximum blade tip height considered in the PEIR). This reduction in the scale of the Project has helped to mitigate the visual and landscape effects of the Project.
Paragraph 5.10.27 advises that *"Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within its development site and wider setting. The careful consideration of colours and materials will support the delivery of a well-designed scheme, as will sympathetic landscaping and management of its immediate surroundings"*	Paragraph 5.10.27	As set out in the Design Statement (Document Reference 4.3) the establishment of Design Principles to shape the design from the outset of the Project ensured account was taken of landscape and seascape considerations in the site selection process and in the evolution of the offshore site and its boundaries, for example where the site area was

Requirement	Reference	ES reference
		reduced including for seascape/landscape reasons, reducing the lateral spread of the windfarm when viewed from the coast. The Design Code (within the Design Statement) will guide the final detailed design stage of the Project and also includes details such as colouring and consideration of seascape/landscape effects and views out to sea
Paragraph 5.10.34 advises that *"The duty to seek to further the purposes of nationally designated landscapes also applies when considering applications for projects outside the boundaries of these areas, which may have impacts within them. The aim should be to avoid harming the purposes of designation or to minimise adverse effects on designated landscapes, and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. The fact that a proposed project will be visible from within a designated area should not in itself be a reason for the Secretary of State to refuse consent".*	Paragraph 5.10.34	The potential for the Project to impact upon the nationally designated areas has been considered in **Sections 18.5** to **18.7**. Regard has been paid to the purpose and special qualities of these nationally designated landscapes.
NPS-EN1 goes on to recognise at paragraph 5.10.35 that *"The scale of energy projects means that they will often be visible across a very wide area. The Secretary of State should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project".*	Paragraph 5.10.35	The potential effects on seascape and landscape receptors are addressed in **Sections 18.5** to **18.7**. The benefits (including need) of the Project are set out in **Chapter 2 Need for the Project**.
NPS EN-1 also advises in 5.10.36 that *"In reaching a judgment, the Secretary of State should consider whether any adverse impact is temporary, such as during construction, and/ or whether any adverse impact on the landscape will be capable of being reversed in a timescale that the Secretary of State considers reasonable".*	Paragraph 5.10.36	Where the seascape, landscape and visual impacts of the Project are temporary or reversible, this is set out in **Sections 18.5** to **18.7**.

Requirement	Reference	ES reference
Paragraph 5.10.37 advises that *"The Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by appropriate mitigation".* Paragraph 5.10.38 states that *"The Secretary of State should consider whether requirements to the consent are needed requiring the incorporation of particular design details that are in keeping with the statutory and technical requirements for landscape and visual impacts".*	Paragraph 5.10.37 and 5.10.38	**Chapter 4 Site Selection and Assessment of Alternatives** sets out the iterative process that has influenced the design of the Project. The design process would continue post-consent.
NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b)		
As stated in Section 4.2 of EN-1, to support the urgent need for new low carbon infrastructure, all onshore and offshore electricity generation covered in this NPS that does not involve fossil fuel combustion (that is, renewable generation, including anaerobic digestion and other plants that convert residual waste into energy, including combustion, provided they meet existing definitions of low carbon) are considered to be Critical National Priority (CNP) infrastructure. The assessment principles outlined in Section 4 of EN-1 continue to apply to CNP infrastructure. Applicants must show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy. Early application of the mitigation hierarchy is strongly encouraged, as is engagement with key stakeholders including SNCBs, both before and at the formal pre-application stage.	Paragraph 2.1.7 and 2.1.8	The Project has applied the mitigation hierarchy effectively through the embedded measures incorporated within the Project design (**Section 18.3.3**). Likely significant effects on seascape, landscape and visual receptors have been reduced or mitigated following the mitigation hierarchy, including embedded design measures to reduce effects. The residual effects arising from the Project (CNP infrastructure) that are not capable of being addressed by application of the mitigation hierarchy are assessed in **Section 18.5** to **Section 18.8**.
Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence/co-location with other marine and terrestrial uses, and in the design of the	Paragraph 2.5.2	**Section 18.3.3** sets out how the Project responds to 'good design' in respect of seascape, landscape and visual receptors, to mitigate impacts, as far as is possible. Design principles have been established to

Requirement	Reference	ES reference
project to mitigate impacts such as noise and effects on ecology and heritage.		guide the design of the Project and are set out in the Design Statement (Document Reference 4.3).
When considering applications for CNP Infrastructure in sites with nationally recognised designations (such as SSSIs, National Nature Reserves, National Parks, the Broads, Areas of Outstanding Natural Beauty, Registered Parks and Gardens, and World Heritage Sites), the Secretary of State will take as the starting point that the relevant tests in Sections 5.4 and 5.10 of EN-1 have been met, and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the urgent need for this type of infrastructure.	Paragraph 2.3.6	The Project is not located within any nationally recognised designations, however it is located within the seascape setting of the LDNP and there are four AONBs within the SLVIA study area (**Figure 18.12**), on which the effects of the Project are assessed in **Sections 18.5** to **18.7**. This includes assessment of the effects of the Project on the perceived special qualities of these recognised designations.
Owing to the complex nature of offshore wind farm development, many of the details of a proposed scheme may be unknown to the applicant at the time of the application to the Secretary of State. Such aspects may include: ▪ the precise location and configuration of turbines and associated development; ▪ the foundation type and size; ▪ the installation technique or hammer energy; ▪ the exact turbine blade tip height and rotor swept area; ▪ the cable type and precise cable or offshore transmission route; ▪ the exact locations of offshore and/or onshore substations; Guidance on how applicants should manage flexibility is set out at section 2.6 of this NPS and 4.3 of EN-1.	Paragraph 2.8.74 and 2.8.75	The need for a level of flexibility within the Project design envelope is well established and described in **Chapter 5 Project Description**. The key parameters (realistic worst-case scenarios) for assessment that have been used to inform the assessment of the maximum adverse case for the purpose of SLVIA are set out in **Section 18.3.2**.
Applicants should address impact on seascape in addition to the landscape and visual effects discussed in Section 5.10 of EN-1.	Paragraph 2.8.204 2.8.205, and 2.8.206	The potential operational effects of the Project on seascape, landscape and visual receptors are assessed in **Section 18.5** to **Section 18.7**.

Requirement	Reference	ES reference
Seascape is an additional issue for consideration given that it is an important environmental, cultural and economic asset. This is especially so where seascape provides the setting for a nationally designated landscape (National Park, The Broads or AONB) and as a defined special quality of the area supports the delivery of the designated area's statutory purpose. This is also an important consideration for stretches of coastline identified as Heritage Coasts, which are associated with a largely undeveloped coastal character. Seascape is a discrete area, with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.		
Applicants should follow relevant guidance including, but not limited to seascape and landscape character assessments, 65 landscape sensitivity assessments, and marine plan seascape character assessments (e.g., NRW Marine Character Areas (with associated guidance) England's marine plans).	Paragraph 2.8.207	Relevant seascape character assessments have been referenced as set out in **Table 18.6**.
Where a proposed offshore wind farm will be visible from the shore and would be within the setting of a nationally designated landscape with potential effects on the area's statutory purpose, a seascape, landscape and visual impact assessment (SLVIA) should be undertaken in accordance with the relevant offshore wind farm EIA policy and the latest Offshore Energy SEA, including the White 2020 report. The SLVIA should be proportionate to the scale of the potential impacts. This will always be the case where a coastal National Park, the Broads or AONB, or a Heritage Coast or their setting is potentially affected.	Paragraph 2.8.208	It is considered that the SLVIA is proportionate to the scale of the potential impacts and the assessment in **Sections 18.5** to **18.7** includes the effects on the settings of nationally designated landscapes. The SLVIA scope has been informed through consultation with stakeholders during statutory, non-statutory and Evidence Plan processes, which influenced the SLVIA, including consideration of the maximum design scenario, the number and location of viewpoints, the approach taken to assessment at each location, and detail presented in contextualizing key assessment criteria such as magnitude and susceptibility. The SLVIA is therefore directly

Requirement	Reference	ES reference
		proportionate both to the scale of potential impacts and the quantum of feedback provided.
Where necessary, assessment of the seascape should include an assessment of four principal considerations on the likely effect of offshore wind farms on the coast: ▪ the limit of visual perception from the coast under poor, good and best lighting conditions; ▪ the effects of navigation and hazard prevention lighting on dark night skies; ▪ individual landscape and visual characteristics of the coast and the special qualities of designated landscapes, such as World Heritage Sites and National Parks, which limits the coast's capacity to absorb a development; and ▪ how people perceive and interact with the coast and natural seascape.	Paragraph 2.8.209	The range and frequency of visibility of the Project from the coast is illustrated in **Figure 18.15** and considered in the visual baseline in **Section 18.5** and throughout the assessment in **Sections 18.5** to **18.7**. The characteristics and special qualities of the coast in relation to designated landscapes are assessed in **Sections 18.5** to **18.7**. How people perceive and interact with the coast and seascape is also considered in **Sections 18.5** to **18.7**.
As part of the SLVIA, photomontages will be required. Viewpoints to be used for the SLVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage.	Paragraph 2.8.210	Viewpoints were agreed in consultation with statutory consultees as described in **Section 18.6**. Photomontage and wireline visualisations, with corresponding viewpoint photography, have been prepared are included in **Figures 18.24** to **Figure 18.47**.
Applicants should assess the magnitude and significance of change to both the identified seascape receptors (such as seascape and landscape units, visual receptors and the special qualities of designated landscapes) in accordance with the standard methodology for SLVIA.	Paragraph 2.8.211	The methodology for the assessment of magnitude of change to seascape receptors is summarised in **Section 18.28** and set out in full in **Appendix 18.1**.

Requirement	Reference	ES reference
Where appropriate, cumulative SLVIA should be undertaken in accordance with the policy on cumulative assessment outlined in Section 5.10.16-17 of EN-1.	Paragraph 2.8.212	Cumulative SLVIA is undertaken within **Section 18.7** of this chapter in accordance with the policy on cumulative assessment outlined in Section 5.10.16-17 of NPS EN-1.
Neither the design nor scale of individual wind turbines can be changed without significantly affecting the electricity generating output of the wind turbines. Therefore, the Secretary of State should expect it to be unlikely that mitigation in the form of reduction in scale will be feasible. However, the siting layout of the turbines should be designed appropriately to minimise harm, considering other constraints such as ecological effects, safety reasons or engineering and design parameters.	Paragraph 2.8.263 and 2.8.264	The specific layout of the WTGs has not been defined at this stage. However, **Section 18.3.2** sets out the realistic worst-case scenario for the SLVIA and **Section 18.3.3** sets out the mitigation that is being included in order to reduce the potential for seascape, landscape and visual effects.
Where a proposed offshore wind farm is within sight of the coast, there may be adverse effects. The Secretary of State should not refuse to grant consent for a development solely on the ground of an adverse effect on the seascape or visual amenity unless: ▪ it considers that an alternative layout within the identified site could be reasonably proposed which would minimise any harm, taking into account other constraints that the applicant has faced such as ecological effects, while maintaining safety or economic viability of the application; or ▪ it takes account of the sensitivity of the receptor(s) and impacts on the statutory purposes of designated landscapes as set out in Section 5.10 of EN-1; and decides that the harmful effects outweigh the benefits of the proposed scheme.	Paragraph 2.8.351	**Chapter 4 Site Selection and Assessment of Alternatives** sets out the alternatives that have been considered. The assessment of effects on seascape, landscape and visual receptors undertaken in **Sections 18.5 to 18.7** has found that although the Project is within sight from the coast, adverse effects are minimised due to its distance offshore and there are no significant effects on nationally designated landscapes and the statutory purpose of AONBs in the SLVIA study area would not be compromised by the Project, all of which are located over 48km from the Project.

Requirement	Reference	ES reference
UK Marine Planning Policy Statement (MPPS) (2011)		
The MPPS provides the UK's framework for preparing marine plans including the Welsh National Marine Plan. Paragraph 2.6.5.3: *"In considering the impact of an activity or development on seascape, the marine plan authority should take into account existing character and quality, how highly it is valued and its capacity to accommodate change specific to any development. Landscape Character assessment methodology may be an aid to this process."*	Paragraph 2.6.5.3	These aspects of the seascape, landscape and visual resource are considered in the assessment of the impacts in **Sections 18.5** to **18.7.**
Paragraph 2.6.5.4: *"For any development proposed within or relatively close to nationally designated areas the marine plan authority should have regards to the specific statutory purposes of the designated areas. The design of a development should be taken into account as an aid to mitigation"* Examples of nationally designated areas are given as AONBs, National Parks or Heritage Coasts.	Paragraph 2.6.5.4	The effects on nationally designated areas are assessed in **Sections 18.5** to **18.7.** Heritage Coasts are not a statutory designation but are afforded protection through planning policy (considered below).
Future Wales: The National Plan 2040		
Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure: *"The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs.* *In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency*."	Policy 17	The proposed Project array area is not within a National Park or AONB. The effects on these areas are assessed in **Sections 18.5** to **18.7** to inform decision makers in their balancing of such effects with the benefits of the renewable energy provided by the Project in order to assess acceptability.

Requirement	Reference	ES reference
And that *"Applications for large-scale wind and solar will not be permitted in National Parks and Areas of Outstanding Natural Beauty and all proposals should demonstrate that they will not have an unacceptable adverse impact on the environment."*		
Policy 18 – Renewable and Low Carbon Energy Developments of National Significance: *"Proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:* 1. *outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);* 2. *there are no unacceptable adverse visual impacts on nearby communities and individual dwellings"*	Policy 18	**Sections 18.5** to **18.7** assesses the effects on the settings of the National Parks and AONBs relevant to the Project as well as the impacts on nearby communities.
Planning Policy Wales Edition 11		
Section 6.3: *"Landscape policy is guided by the European Landscape Convention."* The landscape of Wales is stated as a key consideration when developing policies and when proposing development. Paragraph 6.3.3: *"Collaboration and engagement with adjacent planning authorities, Natural Resources Wales (NRW), Cadw and the third sector will be necessary to draw on a wide range of expertise and evidence. This means:* *ensuring Wales contributes to meeting international responsibilities and obligations for landscapes;* *ensuring statutorily designated sites are properly protected and managed;*	Section 6.3, Paragraph 6.3.3, Paragraph 6.3.4	Effects on landscape character are assessed in **Sections 18.5** to **18.7**. As recognised by NPS EN-1, large-scale infrastructure projects are likely to have effects on landscape character.

Requirement	Reference	ES reference
ensuring that the value of all landscapes for their distinctive character and special qualities is protected; and *ensuring the opportunities landscapes provide for tourism, outdoor recreation, local employment, renewable energy and physical and mental health and well-being are taken into account and multiple well-being benefits for people and communities secured.* Paragraph 6.3.4*: "Where adverse effects on landscape character cannot be avoided, it will be necessary to refuse planning permission."*		
Paragraph 6.3.5: *"The statutory landscape designations that apply in Wales are National Parks, and AONBs. Planning authorities have a statutory duty to have regard to National Parks and AONB purposes. This duty applies in relation to all activities affecting National Parks and AONBs, whether those activities lie within, or in the setting of, the designated areas.* *The designated landscapes should be drivers of the sustainable use and management of natural resources in their areas, and planning authorities should have regard to their identified special qualities in the exercise of their functions and any relevant management plans."*	Paragraph 6.3.5	The effects of the Project on National Parks and AONBs within Wales are assessed in **Sections 18.5** to **18.7**, and take into account the identified special qualities.
Paragraph 6.3.6: *"In National Parks, planning authorities should give great weight to the statutory purposes of National Parks, which are to conserve and enhance their natural beauty, wildlife and cultural heritage, and to promote opportunities for public understanding and enjoyment of their special qualities."*	Paragraph 6.3.6	**Section 18.5.3.5** assess the effects of the Project on landscape receptors in North Wales. NRW are satisfied that the likelihood of significant visual effects on North Wales's National Parks and AONBs, singularly or in combination, is low. A preliminary assessment of landscape character effects within Wales is contained within **Appendix 18.2**. The assessment has found that there is no potential for significant effects on perceived landscape character within Wales due to the location of the Project, at a

Requirement	Reference	ES reference
		long distance of over 45km from the Welsh coast, and the baseline influence of existing operational OWFs.
Paragraph 6.3.12: *"Planning Authorities should provide for the conservation and, where appropriate, enhancement of local landscapes. This may include policies for landscape features, characteristics and qualities of local significance, and the designation of Special Landscape Areas (SLAs). Planning authorities should state which features, characteristics or qualities require extra protection, and explain how the policy or designation will achieve this protection."*	Paragraph 6.3.12	The value associated with the characteristics, features and qualities associated with the landscape where these are protected by local policy and designation as Special Landscape Areas is considered in the assessment in **Sections 18.5** to **18.7**.
Paragraph 6.3.20 notes the importance of LANDMAP as an *"information resource, methodology and monitoring baseline for the landscapes of Wales"* and that LANDMAP assessments *"can help to inform development management decisions"*.	Paragraph 6.3.20	The Visual and Sensory Evaluation compiled as a LANDMAP dataset has been used to inform the assessment of the effects in **Sections 18.5** to **18.7**.
Section 6.5 sets out the considerations in relation to Coastal Areas. Paragraph 6.5.12:"*Development Proposals should aim to protect or enhance the natural or historic character and landscape of undeveloped coastlines. The particular landscapes of the coastline should be recognised and protected where they represent significant characteristics of place. Designation as a heritage coast does not directly affect the status of the area in planning terms, however, the features which contributed to the designation of such areas will be important considerations in development plans and in making development management decisions.*"	Section 6.5, Paragraph 6.5.12	**Sections 18.5** to **18.7** assess the effects on the views and character of the coastline taking account of the degree of development and aspects of heritage coast designation.

Requirement	Reference	ES reference
Welsh National Marine Plan November 2019		
The plan aims to guide the sustainable development of the marine area by setting out how proposals will be considered by decision makers. SOC_06: Designated landscapes *"Proposals should demonstrate how potential impacts on the purposes and special qualities for which National Parks or Areas of Outstanding Natural Beauty have been designated have been taken into consideration and should, in order of preference:* *a. avoid adverse impacts on designated landscapes; and/or* *b. minimise impacts where they cannot be avoided; and/or* *c. mitigate impacts where they cannot be minimised.* *If significant adverse impacts cannot be avoided, minimised or mitigated, proposals must present a clear and convincing case for proceeding.* *Opportunities to enhance designated landscapes are encouraged."*	SOC_06	The effects of the Project on National Parks and AONBs within Wales are assessed in **Sections 18.5** to **18.7**, and take into account the identified special qualities. **Chapter 4 Site Selection and Assessment of Alternatives** and **Section 18.3.3** include descriptions of how effects have been avoided, minimised and mitigated.
Paragraph 128: *"There are also a number of non-statutory designations including Heritage Coasts and Registered Historic Landscapes. Some 42% of Wales' coastline is defined as Heritage Coast; often this is contiguous with other designations such as National Parks or AONBs. These non-statutory designations were defined to protect stretches of scenic and undeveloped coastline from unsuitable development."*	Paragraph 128	**Chapter 15 Marine Archaeology and Cultural Heritage** considers the effects on Registered Historic Landscapes. **Section 18.5.1** considers the recognised value and qualities associated with Registered Historic Landscapes and Heritage Coasts.

Requirement	Reference	ES reference
Paragraphs 129 and 130 set out the policy aims. Paragraph 129: *"Policy SOC_06 recognises that resilient, diverse, multifunctional landscapes supported by sustainable management practices can provide a range of services and opportunities with the potential to contribute to the achievement of social objectives and improve health and well-being as well as delivering economic benefit."* Paragraph 130. *"Under this policy, proposals should demonstrate appropriate consideration of the potential impacts of developments and activities on designated landscapes. This policy also encourages opportunities to contribute positively to the protection or enhancement of these areas. National Parks and AONBs are of equal status in terms of landscape and scenic beauty and both should be afforded protection from inappropriate developments."*	Paragraphs 129 and 130	**Sections 18.5** to **18.7** assess of the effects of the Project on National Parks and AONBs being located within part of their settings and takes into account their identified special qualities.
SOC_07: Seascapes *"Proposals should demonstrate how potential impacts on seascapes have been taken into consideration and should, in order of preference:* *a. avoid adverse impacts on seascapes; and/or* *b. minimise impacts where they cannot be avoided; and/or* *c. mitigate impacts where they cannot be minimised.* *If significant adverse impacts cannot be avoided, minimised or mitigated, proposals must present a clear and convincing case for proceeding.* *Opportunities to enhance seascapes are encouraged."*	SOC_07	**Sections 18.5** to **18.7** assess the effects on seascapes as a result of the Project. **Chapter 4 Site Selection and Assessment of Alternatives** and **Section 18.3.3** include descriptions of how effects have been avoided, minimised and mitigated. Design principles have been established to guide the design of the Project and are set out in the Design Statement (Document Reference 4.3).

Requirement	Reference	ES reference
Paragraph 135 advises that *"Where there is the potential to significantly change the seascape of an area through proposed developments or plan-making, under Policy SOC_07 the impacts and relative value of the altered seascape should be considered as part of decision making. Seascape concerns in themselves need not be a barrier to sensitively sited and designed development and considering seascapes at an early stage should be seen as an approach that can be helpful to identify more widely acceptable solutions and to help steer the right development to the right place."*	Paragraph 135	**Sections 18.5** to **18.7** assess the effects on seascapes as a result of the Project and includes consideration of the impacts and relative value of the altered seascape.
GOV_01: Cumulative effects *"Proposals should demonstrate that they have assessed potential cumulative effects and should, in order of preference:* *a) avoid adverse effects; and/or* *b) minimise effects where they cannot be avoided; and/or* *c) mitigate effects where they cannot be minimised.* *If significant adverse effects cannot be avoided, minimised or mitigated, proposals must present a clear and convincing case for proceeding.* *Proposals that contribute to positive "cumulative effects are encouraged."*	GOV_01	**Section 18.7** considers the cumulative effect of the Project. **Chapter 4 Site Selection and Assessment of Alternatives** and **Section 18.3.3** include descriptions of how effects have been avoided, minimised and mitigated. Design principles have been established to guide the design of the Project and are set out in the Design Statement (Document Reference 4.3).

18.4.2 Data and information sources

18.4.2.1 Site-specific surveys

18.36 The SLVIA undertaken as part of the ES has been informed by desk-based studies and field survey work undertaken within the SLVIA study area. The landscape, seascape and visual baseline has been informed by desk-based review of landscape and seascape character assessments, and the ZTV (**Figure 18.5**), to identify receptors within the SLVIA study area (**Section 18.3.1**) that may be affected by the Project and produce written descriptions of their key characteristics and value.

18.37 Interactions have been identified between the Project and seascape, landscape and visual receptors, to predict potentially significant effects arising, and measures are proposed to mitigate effects where applicable.

18.38 Site-specific surveys were undertaken between April 2022 and September 2022 as described in **Table 18.5**. Viewpoint photography and field assessment surveys were completed at all representative viewpoints included in the ES.

Table 18.5 Site surveys undertaken

Survey date	Scope of survey	Coverage of study area	Survey status
April 2022	Seascape, landscape and visual assessment surveys to undertake viewpoint photography and collect baseline data on landscape character and visual amenity associated with views of the Project and in accordance with methodology such as in GLVIA3 (Landscape Institute, 2013) and TGN 06/19 (Landscape Institute, 2019).	Lancaster, Wyre District, Fylde District and Blackpool.	Photography at Viewpoints 7, 8, 9, 10, 11 and 12 completed.
June 2022		South Lakeland District and Barrow-in-Furness District.	Photography at Viewpoints 2, 3, 4, 5 and 6 completed.
July 2022		North Wales.	Photography at Viewpoints 17 to 23 completed in North Wales.
August 2022		Cumbria, Liverpool and North Wales.	Photography at Viewpoints 1, 13 to 16 and 24 completed.
September 2022		Blackpool, Fleetwood and Lytham St Annes.	Night-time photography at Viewpoints 8, 9 and 10 completed.

18.39 For those receptors where a detailed assessment is required, primary data acquisition has been undertaken through a series of surveys. These surveys include field survey verification of the ZTV from terrestrial LCAS, micro-siting of viewpoint locations, panoramic baseline photography and visual assessment survey from all representative viewpoints. These viewpoint photography, visual assessment and landscape assessment surveys were undertaken between April and September 2022 as described above. Sea-based offshore surveys have not been undertaken as part of the SLVIA.

18.4.2.2 Desk study and data sources

18.40 Baseline data collection has been undertaken to obtain information over the SLVIA study area (**Section 18.3.1**). The current baseline conditions presented in **Section 18.5** describe the existing environment with reference to a number of published data sources containing currently available information covering the study area.

18.41 The data sources that have been collected and used to inform this seascape, landscape and visual assessment are summarised in **Table 18.6**.

18.42 Given the interconnected nature of the Project and the Morgan and Morecambe Offshore Wind Farms: Transmission Assets, the environmental information for the Transmission Assets PEIR has also been used to inform this chapter (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023a).

Table 18.6 Existing data sources used in this chapter

Data source	Date	Data contents
Arnside and Silverdale AONB	2019 – 2024	Arnside and Silverdale Area of Outstanding Natural Beauty Management Plan 2019 – 2024
Campaign to Protect Rural England (CPRE)	2016	Interactive maps of the UK's light pollution and dark skies as part of a national mapping project (LUC/CPRE, 2016). Open-source data used to understand and illustrate baseline lighting levels. Available online: https://www.nightblight.cpre.org.uk/)
Clwydian Range and Dee Valley AONB Joint Committee	2014	Clwydian Range and Dee Valley AONB Management Plan 2014-2019. Available online: https://www.clwydianrangeanddeevalleyaonb.org.uk/wp-content/uploads/2020/07/979717185-Clwydian-Range-and-Dee-Valley-AONB-Mgt-Plan-2016.pdf
Conwy County Borough Council and Denbighshire County Council (CCBC/DCC)	2013	Conwy And Denbighshire Landscape Sensitivity and Capacity Assessment For Wind Energy Development (2013). Available online: https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/evidence-monitoring-and-information/conwy-and-denbighshire-landscape-sensitivity-and-capacity-assessment-for-wind-energy-development.pdf
Conwy County Borough Council	2014	Supplementary Planning Guidance LDP11: Landscape Sensitivity and Capacity Assessment for Onshore Wind Turbine Development. Available online: https://www.conwy.gov.uk/en/Resident/Planning-Building-Control-and-Conservation/Strategic-Planning-Policy/Supplementary-planning-guidance-documents/Assets/Natural-environment/LDP11-Landscape-Sensitivity-and-Capacity-Assessment.pdf
Conwy County Borough Council	2011-2016	Great Orme Country Park and Local Nature Reserve Management Plan 2011-2016. Available online: https://www.conwy.gov.uk/en/Resident/Leisure-sport-and-health/Coast-and-Countryside/Nature-Reserves/The-Great-Orme/The-Great-Orme-Management-Plan.aspx
Cumbria County Council (CCC)	2014	Cumulative Impacts of Vertical Infrastructure. Available online: https://cumbria.gov.uk/elibrary/Content/Internet/538/755/2789/4209014125.PDF

Data source	Date	Data contents
CCC	2011	Cumbria Landscape Character Guidance and Toolkit, Part One – Landscape Character Guidance and Part Two – Landscape Character Toolkit. Available online: https://www.cumbria.gov.uk/planning-environment/countryside/countryside-landscape/land/LandCharacter.asp
EMODnet	2020	EMODnet Bathymetry Consortium (2020): EMODnet Digital Bathymetry (DTM) https://doi.org/10.12770/bb6a87dd-e579-4036-abe1-e649cea9881a
English Heritage	2020	Any specific visitor attractions/tourist destinations. Available online: https://www.english-heritage.org.uk/visit/places/#?page=1&place=&mp=false&fe=false
Flintshire County Council (FCC)	1996	A Landscape Strategy for Flintshire. Available online: https://www.flintshire.gov.uk/en/PDFFiles/Planning/LDP-evidence-base/Local/Volume-1-The-Landscape-Strategy-Policies-and-Proposals-1996.pdf
Forest of Bowland AONB	2019 – 2024	Forest of Bowland AONB Management Plan 2019 – 2024
Google Earth Pro	2020	Aerial photography
Historic England	2022	Registered Parks and Gardens and UNESCO World Heritage Sites. Available online: https://historicengland.org.uk
Lake District National Park Partnership (LDNPP)	2021	LDNP Landscape Character Assessment and Guidelines. Available online: https://www.lakedistrict.gov.uk/__data/assets/pdf_file/0041/388985/Final-LDNP-LCA-for-Adoption-May-2021-compressed.pdf
LDNPP	2021	Lake District National Park Partnership Management Plan 2020-2025. Available online: https://www.lakedistrict.gov.uk/__data/assets/pdf_file/0013/406210/Partnerships-Management-Plan-2020-2025-vFINAL.pdf
Lancashire County Council (LCC)	2000	A Landscape Strategy for Lancashire Landscape Character Assessment. Available online: https://www.lancashire.gov.uk/media/152746/characterassesment.pdf
LLC	2005	Landscape Sensitivity to Wind Energy Development in Lancashire

Data source	Date	Data contents
		https://www.lancashire.gov.uk/media/152752/Wind-Energy-Development.pdf
Long Distance Walkers Association (LDWA)	2020	Overview map for Long Distance Paths and Walks. Available online: https://www.ldwa.org.uk/ldp/public/ldp_overview_map.php
Met Office	2009-2019	Visibility Data. Visibility bands every 1km up to 30km, then every 5km up to 50km, then every 10km up to 70km, and >70km
MMO	2014	Marine Character Areas. MMO, June 2021 North-West Inshore and North-West Offshore Marine Plan (MMO 1037). Available online: https://www.gov.uk/government/publications/the-north-west-marine-plans-documents
MMO	2018	Marine Character Areas. MMO, September 2018 Seascape Character Assessment for the North-West Inshore and Offshore marine plan areas: Technical Report (MMO 1034). Available online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/750227/North_West_-_Seascape_character_assessment_report.pdf
MMO	2014	Mapping UK Shipping Density and Routes from AIS MMO Project No: 1066. Available online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/317770/1066.pdf
National Trust	2020	Any specific visitor attractions/tourist destinations Available online: https://www.nationaltrust.org.uk/days-out
Natural England	2022	Multi-Agency Geographical Information for the Countryside (MAGIC) website.
Natural England	2018	NCAs. Available online: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles#ncas-in-north-west-england
Natural England	2019	GIS datasets for: National Parks. Available online: https://data.gov.uk/dataset/334e1b27-e193-4ef5-b14e-696b58bb7e95/national-parks-england;

Data source	Date	Data contents
		Areas of Outstanding Natural Beauty (AONB). Available online: https://data.gov.uk/dataset/8e3ae3b9-a827-47f1-b025-f08527a4e84e/areas-of-outstanding-natural-beauty-england; County Parks. Available online: https://data.gov.uk/dataset/e729abb9-aa6c-42c5-baec-b6673e2b3a62/country-parks-england; Open Access Land. Available online: https://data.gov.uk/dataset/05fa192a-06ba-4b2b-b98c-5b6bec5ff638/crow-act-2000-access-layer; and Heritage Coasts. Available online: https://data.gov.uk/dataset/79b3515f-b00e-419a-9c7e-1d3163555886/heritage-coasts.
NRW	2022	LANDMAP website. Wales visual and sensory data.
NRW	2019	Seascape and visual sensitivity to OWFs in Wales: Strategic assessment and guidance (White, S. Michaels, S. King, H, 2019).
NRW	2015	National Seascape Assessment for Wales NRW Evidence Report No: 80, 2015. Available online: https://naturalresources.wales/media/682028/mca-00-technical-report-summary-method-appendix.pdf
OPEN internal dataset	2020	Public Rights of Way
Ordnance Survey (OS)	2019	1:50,000 scale mapping
OS	2019	1:25,000 scale mapping
OS Open Data	2019	OS County Region, Local Unitary Authority, Railways, Road and Settlements
OS	2019	OS Terrain 50 Digital Terrain Model (DTM)
OS	2019	OS Terrain 5 Digital Terrain Model (DTM)
Royal Yachting Association (RYA)	2013	Cruising routes for recreational yachting

Data source	Date	Data contents
Sefton Council	2003	Supplementary Planning Guidance in Sefton, Landscape Character of Sefton. Available online: https://www.sefton.gov.uk/media/1992/landscape-character-assessment-of-sefton.pdf
Sustrans	2020	National Cycle Network (GIS dataset). Available online: https://www.sustrans.org.uk/
Wirral Metropolitan Borough Council (WMBC)	2019	Wirral Landscape Character Assessment. Available online: https://www.wirral.gov.uk/planning-and-building/local-plans-and-planning-policy/local-planning-evidence-and-research-report-35
Morgan and Morecambe Offshore Wind Farms: Transmission Assets PEIR and technical appendices (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023)	2023	PEIR SLVIA chapter (Volume 4, Chapter 1 Seascape, landscape and visual resources). Available online: https://bp-mmt.s3.eu-west-2.amazonaws.com/transmission/PEIR/Volume+4/Transmission+Assets+PEIR+Vol+4+Chapter+1.pdf

18.4.3 Impact assessment methodology

18.43 **Chapter 6 EIA Methodology** provides a summary of the general impact assessment methodology applied to the Project ES. The methodology applied for the Project SLVIA is set out in full in **Appendix 18.1**, with an overview of this methodology provided in the following sections.

18.4.3.1 Overview

18.44 The assessment has been undertaken in accordance with the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3), and other best practice guidance. An overview of the SLVIA process is illustrated, diagrammatically in **Plate 18.1**.

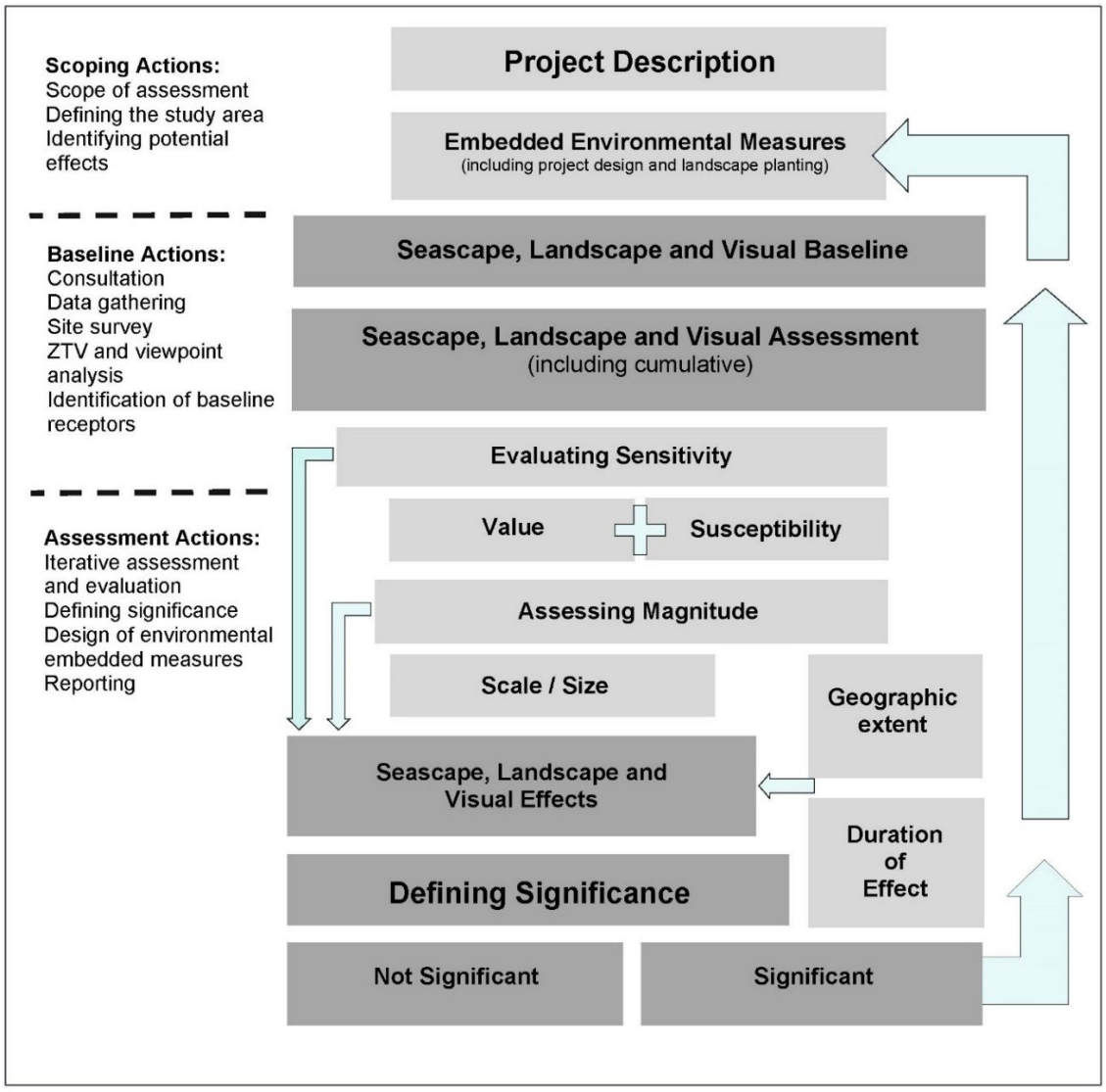

Plate 18.1 Overview of approach to SLVIA

18.45 The SLVIA assesses the likely effects that the construction, operation and maintenance and decommissioning of the Project on the seascape, landscape and visual resource, encompassing effects on seascape/landscape character, designated landscapes, visual effects and cumulative effects.

18.46 The SLVIA is based on the Project description and PDE set out in **Chapter 5 Project Description**. In compliance with EIA regulations (The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017), the likely significant effects of a realistic 'worst-case' scenario are assessed and illustrated in the SLVIA. The maximum design ('worst-case') scenarios identified as appropriate for the SLVIA are set out in **Section 18.3.2**.

18.47 In each case, an appropriate and proportionate level of assessment has been undertaken and agreed through consultation from the scoping to PEIR stage. The level of assessment may be 'preliminary' (requiring desk-based data analysis) or 'detailed' (requiring site surveys and investigations in addition to desk-based analysis).

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

18.49 Essentially, the seascape, landscape and visual effects (and whether they are significant) is determined by an assessment of the 'sensitivity' of each receptor or group of receptors and the 'magnitude of change' that would result from the Project.

18.50 The evaluation of sensitivity to change takes account of the value of the seascape/landscape or visual resource and susceptibility of these receptors to the change arising from the Project in order to assess how sensitive the receptor is to what is proposed. The assessment of sensitivity to change is then combined with an assessment of the magnitude of change arising from the Project, which takes account of the size and scale of the proposed change.

18.51 By combining assessments of sensitivity to change and magnitude of change, the level of seascape, landscape or visual effect can be evaluated and determined. The resulting level of effect is described in terms of whether it is significant or not significant, and the geographical extent, duration and the type of effect is described as either direct or indirect; temporary or permanent (reversible); cumulative; and beneficial, neutral or adverse.

18.52 Generally, in the development of 'new' wind farms, a precautionary approach has been adopted, which assumes that significant landscape and visual effects are weighed on the adverse side of the planning balance. Unless it is stated otherwise, the effects considered in the assessment have been

considered to be adverse. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment, where relevant.

18.4.3.2 Definitions of sensitivity, value and magnitude

18.53 The sensitivity of a seascape/landscape or visual receptor is an expression of the combination of the judgements made about the value of the seascape/landscape or visual resource and the susceptibility of the receptor to the change arising from the Project. An overall assessment of the sensitivity of each receptor to change has been made by combining the assessment of the value of the receptor and its susceptibility to change.

18.54 An evaluation of sensitivity has been applied for each receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change. The basis for the assessments has been made clear using evidence and professional judgement in the evaluation of sensitivity for each receptor, informed by criteria that tend towards higher or lower sensitivity. **Appendix 18.1** sets out this methodology for defining the sensitivity of each receptor, including the criteria and factors considered when defining the susceptibility to change and value of each receptor.

18.55 The magnitude of change affecting seascape/landscape and visual receptors is an expression of the scale of the change that would result from the Project and is dependent on a number of variables regarding the size or scale of the change that would be experienced. The magnitude of change for seascape/landscape and visual receptors resulting from the Project is described as 'High', 'Medium-high', 'Medium', 'Medium-low' 'Low' and 'Negligible' as defined in **Table 18.7.** Further information on the variables considered when defining the size or scale of change for seascape/landscape and visual receptors is described in **Appendix 18.1**.

Table 18.7 Definition of magnitude of change

Magnitude	Definition
High	**Seascape/landscape**: The Project will result in a large-scale change and major loss of key landscape elements/characteristics or the addition of large scale or numerous new and uncharacteristic features or elements that will affect the seascape/landscape character and the special landscape qualities/integrity of a landscape designation.
	Visual: The Project will result in a high level of alteration to the baseline view, forming the prevailing influence and/or introducing elements that are substantially uncharacteristic in the existing view. The addition of the Project will result in a high change, loss or addition to the baseline view.
Medium-high	Intermediate rating with combination of criteria from high or medium magnitude.

Magnitude	Definition
Medium	**Seascape/landscape**: The Project will result in a medium scale change and moderate loss of some key landscape elements/characteristics or the addition of some new medium scale uncharacteristic features or elements that could partially affect the seascape/landscape character and the special landscape qualities/integrity of a landscape designation.
	Visual: The Project will result in a medium level of alteration to the baseline view, forming a readily apparent influence and/or introducing elements that are potentially uncharacteristic in the existing view. The addition of the Project will result in a medium change, loss or addition to the baseline view.
Medium-low	Intermediate rating with combination of criteria from medium or low magnitude.
Low	**Seascape/landscape**: The Project will result in a small-scale change and minor loss of a few landscape elements/non key characteristics, or the addition of some new small-scale features or elements of limited characterising influence on seascape/landscape character/designations.
	Visual: The Project will result in a low level of alteration to the baseline view, providing a slightly apparent influence and/or introducing elements that are characteristic in the existing view. The addition of the Project will result in a low change, loss or addition to the baseline view.
Negligible	**Seascape/landscape**: The Project will result in a very small-scale change that may include the loss or addition of some landscape elements of limited characterising influence. The seascape/landscape characteristics and character will be unaffected.
	Visual: The Project will result in a negligible alteration to the existing view. If visible it may form a barely discernible influence and/or introduce elements that are substantially characteristic in the baseline view. The addition of the Project will result in negligible change, loss or addition to the baseline view.

18.4.3.3 Defining impact significance

18.56 The matrix presented in **Table 18.8** is used as a guide to illustrate the SLVIA process and helps to inform the threshold of significance when combining receptor sensitivity and magnitude of change to assess significance. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each seascape, landscape and visual receptor.

18.57 The significance of the effect on each seascape/landscape character receptor and each visual receptor is dependent on all of the factors considered in the sensitivity of the receptor and the magnitude of change resulting from the Project. Factors which influence levels of sensitivity and magnitude of change assessed in the SLVIA are set out in full in **Appendix 18.1**. Judgements on receptor sensitivity and magnitude of change are combined to arrive at an overall assessment as to whether the Project would have an effect that is significant or not significant on each seascape, landscape and visual receptor.

18.58 Significant landscape and visual effects are shaded red in **Table 18.8**. They relate to all those effects that result in a 'Major' or a 'Major/Moderate' level of effect. Moderate levels of effect (shaded orange) may be significant **or** not significant subject to the assessor's professional judgement, with these assessments explained further with additional narrative and explanation where they occur. White or un-shaded boxes in **Table 18.8** indicate a non-significant effect. In those instances where there would be no effect, the magnitude has been recorded as 'Zero' and the level of effect as 'None'.

Table 18.8 Evaluation of seascape, landscape and visual effects

Sensitivity	Magnitude of change: High	Medium-high	Medium	Medium-low	Low	Negligible
High	Major (Significant)	Major (Significant)	Major/ Moderate (Significant)	Moderate (Significant or not significant)	Moderate/ Minor (Not significant)	Minor (Not significant)
Medium-high	Major (Significant)	Major/ Moderate (Significant)	Moderate (Significant or not significant)	Moderate (Significant or not significant)*	Moderate/ Minor (Not significant)	Minor (Not significant)
Medium	Major/ Moderate (Significant)	Moderate (Significant or not significant)	Moderate (Significant or not significant)	Moderate/ Minor (Not significant)	Minor (Not significant)	Minor/ Negligible (Not significant)
Medium-low	Moderate (Significant or not significant)	Moderate (Significant or not significant)	Moderate/ Minor (Not significant)	Minor (Not significant)	Minor/ Negligible (Not significant)	Negligible (Not significant)
Low	Moderate/ Minor (Not significant)	Moderate/ Minor (Not significant)	Minor (Not significant)	Minor/ Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

18.4.3.4 Geographical extent

18.59 The geographic extent over which the seascape/landscape and visual effects would be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that would experience a particular magnitude of change and therefore the geographical extents of the significant and not significant effects.

18.60 The extent of the effects varies depending on the specific nature of the proposed project and is principally assessed through analysis of the extent of perceived changes through visibility of the Project.

18.4.3.5 Duration and reversibility

18.61 The duration and reversibility of seascape, landscape and visual effects is based on the period over which the Project is likely to exist and the extent to which it would be removed, and its effects reversed, at the end of that period. The methodology used does not include duration and reversibility as part of magnitude of change, as there is potential that the reversibility aspect could alter or reduce potentially significant effects even though they are long-term. The duration and reversibility of the effects is instead determined separately in relation to the assessed effects.

18.62 Long-term, medium-term and short-term seascape, landscape and visual effects are defined as follows:

- Long-term – more than 10 years
- Medium-term – 6 to 10 years
- Short-term – up to 5 years

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

18.4.3.6 Visual representations methodology

18.64 The methodology for the production of visual representations (photomontages and ZTVs) of the Project is set out in full in **Appendix 18.1**.

18.65 The visual representations (photomontages) presented in **Figures 18.24** to **Figure 18.47**, have been produced in accordance with Visual Representation of Wind Farms (NatureScot, 2017) and Visual Representation of Development Proposals (TGN 06/19) (Landscape Institute, 2019).

18.66 ZTVs in **Figures 18.4** to **Figure 18.15** have also been produced in line with guidance in Visual Representation of Windfarms (NatureScot, 2017) and are generated using GIS software (ArcPro version 3.1.0) to model the theoretical visibility of the Project.

18.4.4 Cumulative effects assessments methodology

18.67 The CEA considers other plans, projects and activities that may impact cumulatively with the Project. As part of this process, the assessment considers which of the residual impacts assessed for the Project on their own have the potential to contribute to a cumulative impact. **Chapter 6 EIA Methodology** provides further details of the general framework and approach to the CEA.

18.68 For SLVIA the potential cumulative effects include additional changes to the seascape, landscape and visual amenity caused by the Project in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future. These include cumulative seascape/landscape effects that can impact on the character of the seascape/landscape, or any special values attached to it; and cumulative visual effects caused by combined visibility, which occur where the observer is able to see two or more developments from one viewpoint and/or sequential effects which occur when the observer has to move to another viewpoint to see different developments.

18.69 The additional contribution of the Project to the cumulative effect upon the baseline character/view is assessed and information provided on *'how the effects of the applicant's proposal would combine and interact with the effects of other development'* (PINS, 2019). In accordance with PINS Advice Note 17 (PINS, 2019), where other projects are completed before construction of the proposed NSIP and the effects of those projects are fully determined, effects arising from them are considered as part of the baseline and may be considered as part of the construction and operational assessment (**Section 18.6**), with the CEA focusing on future projects as per the tiered approach set out in PINS Advice Note 17 (**Table 18.9**).

18.70 In undertaking this CEA for the Project, it is important to bear in mind that other projects and plans under consideration would have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside the Project. Therefore, a tiered approach has been adopted. This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the projects' parameters. The tiered approach which has been utilised within the CEA of the Project employs the following tiers as set out in **Table 18.9**.

Table 18.9 Tiered approach to CEA

Tier	Description
Tier 1	▪ Permitted (consented) application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented; and ▪ Submitted application(s) whether under the Planning Act 2008or other regimes but not yet determined
Tier 2	▪ Projects on the PINS Programme of Projects where a scoping report has been submitted
Tier 3	▪ Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted ▪ Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals ▪ Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward

18.71 As described in **Chapter 1 Introduction**, the Transmission Assets associated with the Project are undergoing a separate consent process as part of the Transmission Assets project. To enable impacts from the Project and the Transmission Assets to be considered together, a combined assessment has been made within the cumulative assessment to identify any key interactions and additive effects (**Section 18.7.3.1**).

18.4.5 Transboundary effects assessment methodology

18.72 The transboundary assessment considers the potential for transboundary effects to occur on SLVIA receptors as a result of the Project; either those that might arise within the Exclusive Economic Zone (EEZ) of European Economic Area (EEA) states or arising on the interests of EEA states (e.g. a non-UK fishing vessel). **Chapter 6 EIA Methodology** provides further details of the general framework and approach to the assessment of transboundary effects.

18.4.6 Assumptions and limitations

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

18.74 There are limitations in the production of photomontage and wireline visualisations and ZTVs as assessment tools, and limitations in the accuracy

of digital terrain model (DTM) data, which are described in **Appendix 18.1**. The use of detailed terrain models (OS Terrain 5), production of visualisations to recognised standard and field survey assessment of impacts, minimises these limitations.

18.75 Met Office visibility data has limitations in its application to judgements about windfarm visibility. The visibility data provides some understanding and evidence basis for evaluating the visibility of the WTGs and OSP(s) against their background. Effects have not been downgraded either in magnitude or significance due to variations as a result of weather/visibility and how frequently/infrequently the effects would be experienced. Effects are based on the worst-case with clear visibility and need to be considered in context of the limited time effects in which these would actually occur.

18.5 Existing environment

18.5.1 Current baseline

18.5.1.1 Overview

18.76 An overview of the current baseline conditions for seascape, landscape and visual amenity is initially outlined, and then subsequently described within each of the main geographic 'receptor areas' based on administrative boundaries (**Figure 18.3**) within the SLVIA study area.

Seascape Character

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

18.78 A definition of seascape is also set out in NPS EN3 (2.8.209): *"Where necessary, assessment of the seascape should include an assessment of three principal considerations on the likely effect of offshore windfarms on the coast:*

- *Limit of visual perception from the coast under poor, good and best lighting conditions*
- *The effects of navigation and hazard prevention lighting on dark night skies*
- *Individual landscape and visual characteristics of the coast and the special qualities of designated landscapes, such as World Heritage Sites, which limits the coasts capacity to absorb a development*
- *How people perceive and interact with the seascape*

18.79 The SLVIA takes into account these definitions of seascape and that set out in the UK Marine Policy Statement (UK Government, 2011), which states that *"…references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other"*.

18.80 Although seascape character therefore *"principally applies to coastal and marine areas seaward of the low water mark"* and landscape character *"principally applies to terrestrial areas lying to the landward side of the high water mark"* (Natural England, 2012, p7, Box 1), there is in fact a subtler transition between seascape and landscape and the importance of the interaction of sea, coastline and land as perceived by people is highlighted in definitions of seascape in the Natural England guidance (Natural England, 2012) and Marine Policy Statement (UK Government, 2011).

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

18.82 The baseline description of the seascape of the SLVIA study area is informed by the Seascape Character Assessment for the North-West Inshore and Offshore marine plan areas (MMO, September 2018) 'the MMO Seascape Assessment', and the National Seascape Assessment for Wales (NRW, 2015) which cover the seascape of the SLVIA study area.

18.83 The MMO Seascape Assessment (MMO, 2018) and National Seascape Assessment for Wales (NRW, 2015) characterises the Inshore and Offshore areas of the SLVIA study area and identifies Marine Character Areas (MCAs) which provide the baseline seascape characterisation and mapping for the SLVIA. These MCAs are shown in **Figure 18.9**.

18.84 The MCAs that are assessed in further detail in the SLVIA have been identified through the preliminary assessment (**Appendix 18.2**) as those that define the associative seascape setting of the north-west England coastline between Cumbria and the Wirral - MCA 32 Walney Coastal Waters and Duddon Estuary; MCA 34 Blackpool Coastal Waters and MCA 38 Irish Sea South.

Landscape Character

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

18.86 The landscape of the onshore parts of the SLVIA study area are described at the national level by NCAs in England and National Landscape Character Areas (NCLAs), in Wales; and assessed in relation to the published County Council and National Park Landscape Character Assessments within the SLVIA study area.

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

18.88 The 48 NLCAs that cover Wales, were originally identified by Natural Resources Wales. This mapping and the associated descriptions provide key information for promoting and celebrating regional landscapes at a compatible scale to the NCAs in England.

18.89 The NCAs and NLCAs that are scoped into the SLVIA as those that define the main coastal associated landscapes of the SLVIA study area, as identified in the Preliminary Assessment in **Appendix 18.2**, are shown in **Figure 18.10**.

18.90 The landscape of the onshore parts of the SLVIA study area is described further at the regional level in relation to the following published LDNP, County Council and Isle of Man Landscape Character Assessments:

- LDNPP Landscape Character Assessment and Guidelines (LDNPP, 2021a)
- Cumbria Landscape Character Guidance and Toolkit (CCC, 2011)
- A Landscape Strategy for Lancashire, Landscape Character Assessment (Lancashire County Council, 2000)
- Landscape Character Assessment of Sefton (Sefton Council, 2003)
- Wirral Landscape Character Assessment (WMBC, 2019)
- A Landscape Strategy for Flintshire, Landscape Character Assessment (FCC, 1996)
- Conwy And Denbighshire Landscape Sensitivity and Capacity Assessment For Wind Energy Development (CCBC/DCC, 2013)
- Conwy Borough Council Landscape Unit and Strategy Area Maps (2014) Supplementary Planning Guidance LDP11: Landscape Sensitivity and Capacity Assessment for Onshore Wind Turbine Development (CCBC, 2014)
- Isle of Man Landscape Character Assessment (IoMG, 2008)

18.91 These provide a county-wide, consistent landscape character framework as a background for more detailed assessments (such as at the district level). The LCAs and Landscape Character Types (LCTs) defined in these county and island-wide assessments are considered to be of an appropriate scale to allow assessment of the effects of the Project over the relatively wide SLVIA study area, at a sufficient level of detail.

18.92 The LCAs/LCTs within these landscape character assessments that are scoped into the SLVIA are identified in the Preliminary Assessment in **Appendix 18.2,** as those that define the main coastal associated landscapes of the SLVIA study area that have potential to be significantly affected by the Project, as shown in **Figure 18.11a-b** (County LCA/LCTs).

Landscape designations and defined areas

18.93 Certain landscapes found within the SLVIA study area have been designated or defined due to their scenic qualities or historic landscape qualities as shown in **Figure 18.12**. The landscape designations that are scoped into the SLVIA are identified in the Preliminary Assessment in **Appendix 18.2** and Sections **18.5.3.2** to **18.5.3.6**, as those that have an associated seascape setting that may have potential to be significantly affected by the Project.

18.94 The LDNP is located to the north of the SLVIA study area (**Figure 18.12**), approximately 43.4km from the windfarm site. It is a mountainous region and England's largest national park, located in North West England, which is primarily known for its mountains and lakes. The baseline seascape, landscape and visual amenity of the LDNP and potential effects of the Project is described in **Section 18.5.3.2.** This draws on the seascape character of the St Bees to Haverigg Coastal Waters MCA (31), the landscape character of the South Cumbria Low Fells NCA (19), West Cumbria Coastal Plain NCA (7) and LCAs within the LDNP Landscape Character Assessment and Guidelines (LDNPP, 2021a), together with its 'special qualities' as defined in LDNPP's Management Plan 2020-2025 (LDNPP, 2021b) (**Table 18.16**).

18.95 The SLVIA study area also includes the Arnside and Silverdale AONB and the Forest of Bowland AONB in England (both of which are located over 50km from the Project); and the Isle of Anglesey AONB and Clwydian Range and Dee Valley AONB within North Wales (both of which are located over 47km from the windfarm site).

18.96 The Arnside and Silverdale AONB is located some 52.7km from the windfarm site (**Figure 18.5a** and **Figure 18.12**), however the closest parts of the AONB (roughly half of its area) consist of intertidal sand and mudflats in the Kent estuary and Morecambe Bay, with no public access. The closest terrestrial areas of the Arnside and Silverdale AONB are located 57km away at Jenny Brown's Point. The Arnside and Silverdale AONB is especially valued for its distinctive limestone landscape, views and diversity of habitats and wildlife. Its special qualities are defined in the Arnside and Silverdale AONB Management Plan (Arnside and Silverdale AONB, 2019 – 2024) and include its *'outstanding landscape and spectacular views'*; '*stunning coast and seascape'* and *'sense of tranquillity, space and place'* and *'rich sense of history'*.

18.97 The Forest of Bowland AONB is located 50km from the windfarm site at its closest point (**Figure 18.5b** and **Figure 18.12**) set inland to the east of the M6

(motorway) corridor. The Forest of Bowland AONB is centred on the upland core of the Bowland Fells, within which the Rivers Brock, Calder, Conder, Hindburn, Hodder, Loud, Roeburn, Wenning and Wyre all originate. Its special qualities are defined in the Forest of Bowland AONB Management Plan (Forest of Bowland AONB, 2019 - 2024) and include its *'outstanding landscape'*; *'wild open spaces'* and '*landscape rich in heritage'.*

18.98 The potential effects of the Project on the Arnside and Silverdale AONB and Forest of Bowland AONB have been considered in the preliminary assessment for receptors in North-West England in **Table 18.21**.

18.99 The Isle of Anglesey AONB is located 55.4km from the windfarm site at its closest point (**Figure 18.5d**). The Isle of Anglesey AONB has a distinctive and varied landscape, with some of the main features being its low cliffs alternating with coves and pebble beaches, sheer limestone cliffs interspersed with fine sandy beaches and stretches of sand dunes with beaches. Parts of the Isle of Anglesey AONB coastline are also defined as heritage coast, as is Great Orme to the east. The Clwydian Range and Dee Valley AONB is located 47.1km from the windfarm site at its closest point (**Figure 18.5d**), with the moorland ridges of the central Clwydian Range forming the upland edge to North Wales and the associated Dee Valley. Its special qualities are defined in the Clwydian Range and Dee Valley AONB Management Plan (Clwydian Range and Dee Valley AONB, 2014 - 2019) and include its *'heather moorland and rolling ridges'; 'tranquillity, remoteness and wildness'; 'River Valleys and the River Dee';* and its *'historic environment'.*

18.100 The potential effects of the Project on the Anglesey AONB and Clwydian Range and Dee Valley AONB have been considered in the preliminary assessment for receptors in North Wales in **Appendix 18.2**.

18.101 There are a number of registered Parks and Gardens within the SLVIA study area (**Figure 18.12**), with the closest being located in Blackpool (Stanley Park), Lytham St Annes (Lytham Hall, Ashton Gardens, Promenade Gardens), Fleetwood (Memorial Park, The Mount) and Southport (King's Gardens, Hesketh Park, Scrisbrick Hall), all located 30-40km from the windfarm site and situated in an urban setting.

Views and visual amenity

18.102 The visual baseline focuses on and describes the area in which the Project may be visible, as defined by its ZTV, the different groups of people who may experience views of the Project (visual receptors), the viewpoints where they would be affected and nature of views at those points.

ZTV

Blade Tip ZTV

18.103 Visual effects would only occur where the introduction of the Project changes or influences the visual amenity and views experienced by people in the area. The areas where the visual baseline may be altered is defined by the Blade Tip ZTV shown in **Figure 18.5 (A3)** and **Figure 18.5a-d (A1)**. The ZTV shows the main area in which the Project would theoretically be visible, highlighting the different areas where people may experience views of the Project and assisting in the identification of viewpoints where they may be affected. These ZTVs are based on bare-earth terrain models and do not take account of atmospheric clarity, therefore they show the worst-case in theoretical visibility of the Project.

18.104 The landward, topographical influences define the extent of the ZTV. To the north-east of the SLVIA study area, a constant, narrow and undulating coastal plain follows the Cumbrian coastline around the Duddon Estuary. Behind, the high fells of the Lake District extend over much of south-west Cumbria with Black Combe, above Whicham, representing their most seaward tip. The coastal plain broadens to encompass Barrow-in-Furness and the head of the Furness peninsula. Low limestone hills that lie within the northern end of the peninsula merge into the Lake District's low fells to the north and continue around to Carnforth. To the east, the Bowland fells and further inland, the Yorkshire Dales, enclose the coast. South of Lancaster, the broad Fylde peninsula and much of west Lancashire comprises of a relatively flat to gently rolling coastal plain divided by the Ribble Estuary. This coastline is strongly urban with Fleetwood, Blackpool, Southport and Formby being located on it. To the east, the Pennine hills enclose the plain, with the southern hills extending south-east and inland of Manchester.

18.105 The Liverpool conurbation is a dense settlement of housing and large-scale industry focusing on the City of Liverpool and Birkenhead/east Wirral, situated on a low-lying, gently rolling platform punctuated by low sandstone ridges and bisected by the River Mersey's lower estuary. The landform of the Wirral peninsula remains gently rolling and settled. West of the Dee Estuary, the narrow coastal strip along North Wales is largely flat with the Clwydian hills behind extending south-east towards Wrexham. Adjoining the hills, the flat area of the Vale of Clwyd extends inland of Rhyl as far as St Asaph. Further west, the hills of North Wales continue almost to the coast, limiting development to the coastal edge. The hills and mountains of Snowdonia lie west of Conwy covering much of the land and only levelling out towards Bangor. Across the deep Menai Strait, the eastern coastline of Anglesey becomes increasingly indented, higher and rugged towards the north with an associated increase in coastal cliffs.

18.106 The blade tip ZTV (**Figure 18.5** and **Figure 18.5a-d**) shows that the main areas with higher theoretical visibility of the Project would be the surrounding seascape of the Irish Sea within approximately 30km of the windfarm site, beyond which there may be visibility from the immediate coastal edges around the Irish Sea including the coastlines of Cumbria, Lancashire, Merseyside and the Wirral, North Wales, Anglesey and potentially the Isle of Man (although the Isle of Man is outside the SLVIA study area). Beyond these coastlines, the largest area with high theoretical visibility of the Project extends between the most easterly part of Morecambe Bay and the Dee Estuary. This area encompasses much of west Lancashire, including The Fylde and Amounderness Plain; and the head of the Wirral peninsula. This area of the ZTV generally lies within a 30km of the coast. Further inland, areas with higher visibility are patchy and constrained to the western Pennine hills.

18.107 The ZTV shows theoretical visibility of the Project from the North Wales coastline between Talacre (Point of Ayr) in the east and Anglesey in the west, at very long range, at distances between 45-60km from the windfarm site. An area with high theoretical visibility of the Project lies within the Vale of Clwyd in Wales extending inland, and is largely within 10km of the coast, however located at distances over 50-60km from the windfarm site.

18.108 The ZTV shows theoretical visibility of the Project from the higher ground on the southern side of the Isle of Man, however all areas of the Isle of Man are situated over 60km from the windfarm site and therefore outside the SLVIA study area.

Blade Tip ZTV with surface features

18.109 The ZTV in **Figure 18.6** shows the theoretical visibility when screening from woodland and buildings (defined by OS OpenMap Local and indicatively modelled at 10m height) are included in the surface model. It illustrates the reduced theoretical visibility when taking these surface features into account. It provides a more realistic impression of the likely ZTV, with visibility of the Project likely to become low and very limited and scattered in extent, moving inland away from the coastal edge due to the intervening screening provided by near contiguous areas of built development along many sections of coast.

18.110 Visibility from streets, open spaces and low storey buildings within coastal, urban areas will typically be contained within the urban environment by surrounding built forms, with most visibility of the Project at the sea-front or where tall buildings or intervening open areas allow visibility from further inshore. Views to the sea and the Project from inland areas of the Lancashire coastal plain and Merseyside in particular, are notably restricted primarily by intervening buildings within urban areas, but also areas of vegetation and woodland, as shown in **Figure 18.6**. Urban areas form an almost contiguous built-up coastal edge, separating the low-lying coastal plain from the sea.

There is likely to be very limited visibility of the Project from the low-lying landform of the Lancashire coastal plain and Merseyside due to the screening effect of vegetation, woodland and built up coastal urban areas.

Horizontal Angle ZTV

18.111 The 'horizontal angle ZTV' in **Figure 18.8** measures how much of the horizontal field of view (HFoV) is occupied by the Project, in theoretical views. It measures the maximum spread from the furthest left to the furthest right theoretically visible WTG within the windfarm site, as a horizontal angle in degrees. The horizontal angle ZTV provides further information on which to judge the likely visual effects of the Project because the results reflect the effect that distance has on its apparent size and horizontal spread: a large object up close has more visual impact than the same sized object further away (all other things being equal) and this is shown in the horizontal angle ZTV by how much of the horizontal field of view is occupied. The horizontal angle ZTV is displayed using coloured bands showing incremental degrees of horizontal angle, in order to highlight areas of higher effect.

18.112 The horizontal angle ZTV shows that the widest horizontal field of view is occupied in close proximity to the Project, particularly within the windfarm site itself, where the WTGs occupy more than 180 degrees (50%) of the field of view, and within approximately 4km to the north and south, where it would occupy 90-180 degrees (25 to 50%) of the field of view. These areas of greatest effect on the HFoV occur only from areas of seascape within the Irish Sea and would not be experienced to this extent in coastal views, in which the HFoV is much reduced to between 10-20 degrees of the HFoV, due to the distance between the coast and the windfarm site.

18.113 The horizontal angle ZTV also allows the following assessments to be made:

- The HFoV occupied by the Project decreases considerably with distance
- The Project would occupy less than 20 degrees of the HFoV from almost all onshore areas in the SLVIA study area with visibility
- From the most distant parts of the SLVIA study area including parts of Anglesey, and inland areas of North-West England the Project would occupy less than 10 degrees of the HFoV
- In views from Cumbria in the north and from Merseyside and North Wales in the south, the Project would be viewed beyond the existing spread of operational offshore windfarms and would add little or nothing to the current spread of WTGs in views (as they are subsumed behind the spread of other windfarms, in the background context)

18.114 The horizontal angle ZTV illustrates how the visual effects of the Project would diminish with distance; with less visual effect from distant locations, where it

occupies a small angle of view, and a greater visual effect from locations at very close proximity in the Irish Sea near to the windfarm site, where it occupies a larger angle of view at close range.

18.115 It should also be noted that this theoretical measure includes the full angle from the furthest left to the furthest right extent of the Project, and that in reality the WTGs are sited with visible space/gaps between them, which allow views through the site to the seascape or skyline beyond.

Visual receptors - overview

18.116 The principal visual receptors in the SLVIA study area are focused along the closest sections of the Cumbria, Lancashire, Merseyside and North Wales coastline, including people within settlements, driving on roads, visitors to tourist facilities or historic environment assets, and people engaged in recreational activity such as on walking and cycle routes where the sea is a strong influence in the baseline view.

18.117 Broadly, the principal visual receptors are identified as follows:

- **Coastal settlements**. The larger settlements within the extent of ZTV are generally coincident with the coastline, where the main focus of views is typically 'land to sea'. Some of the seafront views, notably from areas around Morecambe Bay, also include an element of 'coast across sea to land' views, such as those from Fleetwood towards Barrow-in-Furness and vice versa. The principal coastal settlements with capacity for views of the Project are (with approximate distance to the windfarm site):
  - Heysham (45km)
  - Blackpool (29km)
  - Lytham St Anne's (29km)
  - Southport (33km)
  - Crosby (40km)
  - Liverpool (44km)
  - Prestatyn (46km)
  - Rhyl (47km)
  - Colwyn Bay (51km)
  - Llandudno (48km)
- **Long distance paths**. The principal long-distance routes with potential for views of the Project are: The England Coast Path Route; the Lancashire Coastal Way; the Trans Pennine Way; the Wales Coast Path, which also passes Prestatyn, Rhyl, Colwyn Bay and Llandudno; and Offa's Dyke Path, which terminates at Prestatyn.

- **Long distance cycle routes**. Sustrans National Cycle Route (NCR) 5, which connects Reading and Holyhead via Colwyn Bay and Bangor; NCR56 from Chester to Wallasey via the Mersey ferry to Liverpool and NCR62; NCR62, which connects Fleetwood on the Fylde region of Lancashire with Selby in North Yorkshire; NCR700 - the Bay Cycle Way which follows the coast of Morecambe Bay from Barrow-in-Furness to Silverdale; and NCR810 between Ainsdale and Liverpool.
- **Public Rights of Way**. A more general concentration of Public Rights of Way is also notable within the extents of the LDNP and the coast, associated with its open landscape and focus as a centre for outdoor recreation. Sea front promenades, typically associated with the main settlements, provide further linear route vantage points.
- **Main road routes**. The principal highway route with capacity for sea views is the A584, which runs along Blackpool's seafront. The A5087 which connects Barrow-in-Furness with Ulverston via Bardsea & Aldingham, following the coast; and the A554 at New Brighton, also have sea views. In Wales the A55/North Wales Expressway is the principal highway route with sea views.
- **Rail routes**. The Cumbrian Coast line which runs from Carlisle to Barrow-in-Furness via Workington and Whitehaven; the Furness line, between Ulverston and Arnside; and the North Wales Coast line, which runs parallel to the coast between Flint and Rhos-on-Sea.
- **Tourist and visitor locations**. Concentrations of recreational and visitor locations associated with the main coastal resort towns, with their sea front promenades, piers and shingle beaches, including Blackpool, Prestatyn, Rhyl, Colwyn Bay, Rhos-on-Sea and Llandudno.

  Other notable beach locations (within general accessibility along the majority of the coastline) offering beach and inshore sea-based recreational opportunities include: Haverigg Beach, Roanhead Beach, Fleetwood Beach, Blackpool Pleasure Beach, Southport Beach, Ainsdale Beach, Formby Beach, Crosby Beach, Wallasey Beach, Meols Beach, Talacre Beach, Prestatyn Beach, Ffrith Beach, Rhyl Beach, Kinmel Bay Beach/Promenade Traeth Pensarn, Llanddulas Beach, Colwyn Bay Beach/Promenade, Penrhyn Bay Beach and Llandudno Promenade. The Great Orme (Heritage Coast) is a popular recreational and visitor location.
- **Principal boat routes.** The main shipping routes through the study area include routes between England and Northern Ireland, the Isle of Man and the Republic of Ireland, including the Heysham to Belfast, Douglas, Dublin and Warrenpoint; Birkenhead to Belfast; and Liverpool to Belfast, Douglas and Dublin ferry routes. Heysham and Liverpool are the main

ports for passenger traffic on the section of coast within the study area. The nature of such views from passenger vessels on these routes are either sea to land or sea to sea.

- **Other sea-based users.** Other sea-based users are considered in more detail in **Chapter 14 Shipping and Navigation**, **Chapter 13 Commercial Fisheries** and **Chapter 17 Infrastructure and Other Users**. Recreational vessels remain predominantly along the coast, particularly along the entrance to Liverpool, and around Holyhead, Douglas and Rhyl. Offshore cruising routes are present between Liverpool and the Isle of Man, Heysham/Barrow and Conwy Bay with vessels transiting to/from clubs and marinas.

  The majority of fishing vessel activity is concentrated within the west of the Irish Sea while the east is intersected by activity between Kirkcudbright, Whitehaven, Barrow-in-Furness, Liverpool and the north coast of Wales including Anglesey. All such users experience varying aspects of sea-to-land or sea-to-sea views.

Nature of views - overview

18.118 An understanding of the baseline visual resource and nature of views is provided in the MMO Seascape Character Assessment for the North-West Inshore and Offshore marine plan areas (MMO, 2018), Section 3. It is described in terms of land with sea views, and visibility of the sea.

18.119 Figure 3 of the MMO Seascape Character Assessment (MMO, 2018) shows land with sea views and broadly indicates that visibility of the sea is generally higher along the coastlines of south-west Cumbria and north Wales; and within the Pennines including the Forest of Bowland and extending into West Lancashire. The large flat areas of the Fylde and West Lancashire coastal plains have much less visibility of the sea. Visibility of the sea is also primarily from land within 10km of the Lancashire/Merseyside coastline, generally forming a band of visibility along the coastal edge. At the broad scale, it indicates that beyond 60km inland from the coast, there is almost no visibility of the sea; and between 50-60km visibility of the sea is very limited. Although this does not equate to visibility of the Project, which is discussed in relation to the ZTV, it does provide some definition to 'seascape' where the sea may form part of the baseline characteristics in *"landscapes with views of the coast or seas"* (MMO, 2018).

18.120 Looking out to the Isle of Man, MCA 31: St Bees to Haverigg Coastal Waters (**Figure 18.9**) is highly visible from land including the fells of the south-western LDNP. The MCA forms part of the seascape setting of the designated landscape.

18.121 Seaward views from MCA 32: Walney Coastal Waters and Duddon Estuary (**Figure 18.9**) feature the Isle of Man and the Galloway coast in Scotland. From the southern extent of the LDNP these are dominated by the undeveloped Duddon Estuary, which forms a large part of its setting. Views into the MCA from Black Combe and the southern Fells are characteristic of this part of the LDNP. The Lake District's mountains provide a backdrop to industrial elements within views inland.

18.122 There are panoramic vistas across MCA 33: Morecambe Bay from all directions, the LDNP, Forest of Bowland AONB, and Arnside and Silverdale AONB. The bay is a key component to the seascape setting of the Arnside and Silverdale AONB, whose elevated land provides a scenic backdrop to views across the Bay from its seaward side.

18.123 From the coast of MCA 34: Blackpool Coastal Waters and Ribble Estuary there are long views to the mountains of North Wales and the Lake District. Offshore WTGs and oil and gas infrastructure are visible from the Sefton Coast shipping lanes.

18.124 The visual context of the SLVIA study area includes a number of key visual elements and vertical infrastructure components which influence the nature of views experienced, which include:

- Offshore windfarms off the coast, forming prominent moving structures within the seascape
- Sellafield nuclear power station and associated industrial development, at the mouth of the River Calder
- Rampside Gas Terminal to the east of Walney Island
- Heysham nuclear power station, which is a notable visual landmark from coast and sea
- The offshore Lennox platform within the Lennox Oil and Gas Field, the closest to shore of five interlinked sites currently operational in Liverpool Bay
- Morecambe gas field and associated platforms (offshore) around the Project windfarm site
- The now very urbanised Fylde Coast, with much industrial development
- Prominent landmarks such as Blackpool's tower and rollercoaster

Visibility

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

18.126 A quantitative description of the existing visibility is provided using METAR visibility data from the closest Met Office weather station at Walney Island, to highlight potential trends in the visibility conditions of the SLVIA study area. This 'visibility data' shows a 10-year average of the frequency of observations at measured distances from the station.

18.127 Visibility range and frequency is mapped in **Figure 18.15** in the context of the windfarm site using visibility ranges based on Met Office visibility definitions: <1km Very Poor; 1-4km Poor; 4-10km Moderate; 10-20km Good; 20-40km Very Good; >40km Excellent. The visibility range is shown in bands extending from the windfarm site and is combined with the ZTV of the Project to show the likely frequency of visibility over 10 years at difference distances, as shown in **Table 18.10.**

Table 18.10 Met Office visibility frequency data (Walney Island Weather Station (The Met Office, Visibility Definitions))

Visibility range	Visibility definition	% Visibility frequency (over 10 years)	Days per year visibility frequency (10-year average)
1km	Very Poor	0.6	2.2
1-4km	Poor	2.7	9.9
4-10km	Moderate	12.0	43.8
10-20km	Good	26.9	98.0
20-30km	Very good	18.4	67.2
30-40km	Very good	15.0	54.8
40-50km	Excellent	14.8	54.0
50-60km	Excellent	9.6	35.0
>60km	Excellent	0 (no visibility over 60km recorded in Met office data)	0 (no visibility over 60km recorded in Met office data)

Viewpoints

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

18.129 Viewpoints have been compiled within the SLVIA study area incorporating consultee feedback, the ZTV for the Project (**Figures 18.5 – Figure 18.5a-d**), identification of the landscape and visual receptors within the ZTV, further desk study through wireline analysis, as well as field survey observations.

18.130 In summary, a viewpoint search listed all the potential viewpoints suggested by consultee stakeholders during consultations and the Scoping Opinion (PINS, 2020). Proposed viewpoints for the SLVIA were then shortlisted from this overall viewpoint search to those that were considered necessary to assess the likely significant effects of the Project, informed by guidance contained within the GLVIA3 (Landscape Institute, 2013) (p107-110) and Visual Representation of Windfarms (NatureScot, 2017) (p16-21).

18.131 Viewpoints within the SLVIA study area are set out in **Table 18.11** and shown in **Figure 18.24 – Figure 18.75**. The viewpoints take into account a range of factors, including:

- Stakeholder consultation feedback and feedback provided at SLVIA ETG meetings
- A range of viewpoints from where there are likely to be significant effects
- Those representative of views within the SLVIA study area, from specific viewpoints and illustrative of certain effects
- The accessibility to the public, and potential number and sensitivity of viewers who may be affected
- The viewing direction, distance and elevation, including a range of distances between 29.1km – 49.7km to test threshold of significance from coastal to inland areas

  The nature of the viewing experience and activities (e.g. static views, views from settlements, tourist destinations, and views from sequential points along roads and recreational routes
- The view type (e.g. panorama, vistas and glimpses)
- Areas of high landscape, scenic or recreational value (such as the LDNP)
- Various LCAs and local authority administrative areas
- The potential for combined views of the Project with existing operational windfarms and other proposed windfarms

- Potential for an integrated approach – viewpoints representing several aspects from the same location, such as visual effects of the offshore and onshore infrastructure, or views representing onshore cultural heritage assets

18.132 Baseline panoramas showing the existing view from these viewpoints are shown in the relevant baseline panoramas that are cross-referenced for each viewpoint in **Table 18.11**. The existing view from each of these viewpoints is described within the baseline description of each geographic area that follows in this description of the baseline conditions.

Table 18.11 Viewpoints included in the SLVIA

Viewpoint		Easting	Northing	Distance to windfarm site (km)
1	Black Combe (**Figure 18.24**)	313523	485430	49.1
2	Haverigg Point (**Figure 18.25**)	314743	477860	42.2
3	Ulverston (Hoad Monument) (**Figure 18.26**)	329457	479068	49.9
4	High Haume Farm (Dalton-in-Furness) (**Figure 18.27**)	322397	475617	43.3
5	Walney Island (Biggar Bank Road) (**Figure 18.28**)	317848	467524	34.0
6	South Walney Nature Reserve (**Figure 18.29**)	321106	462123	31.3
7	Heysham Head, Chapel Hill The-Barrows (**Figure 18.30**)	340986	461646	46.2
8	Fleetwood (Rossall Point) (**Figure 18.31**)	331492	447929	31.8
9	Blackpool (near tower) (**Figure 18.32**)	330552	435677	29.2
10	Lytham St Anne's (**Figure 18.33**)	331799	428670	30.7
11	Southport Pier (**Figure 18.34**)	333109	417985	34.4
12	Formby Point (**Figure 18.35**)	327005	406706	35.0
13	Clieves Hill (**Figure 18.36**)	338451	407315	43.9
14	Crosby Beach (**Figure 18.37**)	330655	398855	43.1
15	Fort Perch Rock, New Brighton (**Figure 18.38**)	330926	394421	46.5

Viewpoint		Easting	Northing	Distance to windfarm site (km)
16	Hoylake, Hilbre Point (**Figure 18.39**)	320295	388466	45.7
17	Talacre Beach (Point of Ayr) (**Figure 18.40**)	312051	384944	46.3
18	Prestatyn (Nova Centre) (**Figure 18.41**)	305917	383728	46.4
19	Bryn-Ilwyn Viewpoint (Prestatyn) (**Figure 18.42**)	307441	381845	48.4
20	Graig Fawr, Clwydian Range (**Figure 18.43**)	305845	380394	49.7
21	Rhos Point (**Figure 18.44**)	284098	381165	49.6
22	Llandudno Promenade (**Figure 18.45**)	279118	382137	49.9
23	Great Orme's Head (**Figure 18.46**)	276664	383399	49.6
24	Silecroft Beach (**Figure 18.47**)	312084	481109	44.6

Night-time baseline lighting

18.133 The baseline lighting conditions across the SLVIA study area vary considerably and there is no single data source that serves to provide a detailed or quantitative evidence base. To provide some context to the assessment, **Figure 18.16** illustrates information relating to light pollution in the study area provided by the CPRE, who has produced interactive maps of the UK's light pollution and dark skies as part of a national mapping project. This is based upon data from the National Geophysical Data Center, part of the National Center for Environmental Information (NCEI) in the USA. Land Use Consultants has processed this satellite data to prepare a map showing the areas of relative light pollution across England (LUC/CPRE, 2016). This open-source data has been used to help understand and illustrate the existing baseline lighting levels of the study area and is mapped in **Figure 18.16**.

18.134 Each pixel in the mapping shows the level of radiance (night lights) shining up into the night sky, which have been categorised into colour bands to distinguish between different light levels, from colour band 1 (darkest) to 9 (brightest). The map clearly identifies the main concentrations of night-time lights, creating light pollution that spills up into the sky.

18.135 Most notably, this existing lighting pollution is within and around the main settlements due to the influence of street and building lighting. In particular it identifies that the majority of the coastline and hinterland of the SLVIA study area falling within the brighter light influence categories, with high night light pollution at the greatest, light-influenced end of the spectrum. This includes the coast of Barrow-in-Furness in Cumbria; the Wyre coastline around Heysham; the Fylde coastline between Fleetwood, Blackpool and Lytham St Annes; the Sefton coast between Southport and Formby Point; Merseyside and the Wirral; and the North Wales coast between Talacre (Point of Ayr) and Llandudno Bay, which have high levels of baseline light influence.

18.136 By contrast, **Figure 18.16** also identifies areas where there are lower levels of existing night-time lighting falling into the lowest colour bands, containing areas where the sky would be expected to be 'dark' from areas that are set back from the light influenced urban areas. These areas with lower levels of existing night-time lighting include the upland landscapes of North Wales and the LDNP, including its coastline between Silecroft and the River Esk; inter-tidal areas of Morecambe Bay and the Lune Estuary; the Ribble Estuary; the Dee Estuary, which have most association with darker skies, yet are often not accessible as they are inter-tidal areas located off the coast. The seascape of the Irish Sea to the north of the SLVIA study area includes extensive visible aviation and/or navigation lighting associated with the operational offshore windfarms (West of Duddon Sands, Walney 1-4, Barrow and Ormonde). Similarly, the seascape of Liverpool Bay and the waters off North Wales include extensive visible aviation and/or navigation lighting associated with the

operational offshore windfarms (Burbo Bank, Burbo Bank Extension, Gwynt y Môr, North Hoyle and Rhyl Flats), as well as Morecambe gas platforms, lit vessels, rigs and cardinal buoys that are visible in the sea at night.

18.137 The impression gained from **Figure 18.16** is borne out by the assessment experience from visiting and inspecting the study area at night. Higher levels of darkness are experienced from the more remote estuaries and uplands, with a general transition of reducing darkness moving towards the swathe of urban development along the coastline, which is more heavily influenced by visible lighting at night that arises as consequence of a number of light sources including:

- Towns and settlements (street lighting/buildings/retail areas)
- Roads and road junctions, including service areas
- Industrial developments including power stations and existing onshore WTGs
- Vehicles using the road network, including occasional construction vehicles with flashing lights
- Lighting of entertainments on several piers, including at Blackpool, Lytham St Annes and Southport, that extend into the sea and spill light onto the water
- Blackpool illuminations which are held each autumn from late August until early January over a 10km long stretch of Blackpool promenade and use over one million bulbs
- Red aviation lights on tall structures including construction cranes, communication masts and the power station chimneys
- Lighting of cardinal buoys and vessels in the sea
- The operational OWF aviation and marine navigational lights which can be seen out to sea, lighting the regional OWF groupings to the north within the Irish Sea and to the south off Liverpool Bay and North Wales
- Lighting of Morecambe gas platforms

18.138 Lighting at these locations provides a considerable level of baseline illumination which is apparent when travelling through and around the coastal parts of the study area, from the transition between the urban environment and the more rural areas inland. Lighting within this urbanised coastline is demonstrably intrusive in interrupting the transition between dark landscape and dark skies above in views towards the seascape.

18.5.2 Climate change and future trends

18.139 The existing environment is likely to change in the future as a result of the effects of climate change, land use policy, environmental improvements and development pressures, regardless of whether the Project progresses to construction or not.

18.140 A range of policies impact on the management of the landscape, ranging from European Directives, national policy and regulation, through to community strategies and development frameworks. Landscape planning policies covering the coastal landscape within the study area, generally seek to conserve and enhance the natural beauty of the area, while recognising the need to adapt to inevitable change over time, particularly in such a dynamic coastal landscape shaped by coastal processes, and the need to respond to development pressures that reflect the changing needs of society.

18.141 There is overwhelming evidence that global climate change, influenced by the human use of fossil fuels, raw materials and intensive agriculture, is occurring. Any notable change in climate is likely to present potential changes to the coastline of the study areas in a variety of ways including the climate (e.g. hotter drier summers and wetter winters, and more extreme weather events), sea level rise and greater coastal erosion.

18.142 Potential changes to the landscape and seascape as a result of climate change and natural trends have been considered but would not change the assessment of impacts presented in this chapter.

18.5.3 Preliminary assessment

18.5.3.1 Geographic areas considered in the SLVIA

18.143 The baseline conditions for seascape, landscape and visual amenity are described and effects subsequently assessed within each of the main geographic 'receptor areas' based on administrative boundaries (**Figure 18.3**) within the SLVIA study area:

- LDNP – areas within the LDNP boundary with an associative seascape setting
- North-West England - areas with an associative seascape setting within Cumbria (outside the LDNP) and Lancashire
- Merseyside – areas with an associate seascape setting within Merseyside including Sefton District and Wirral District
- North Wales - areas with an associative seascape setting within Flintshire (Sir y Fflint), Denbighshire (Sir Ddinbych) and Conwy

- Isle of Man - areas with an associative seascape setting (noting that the terrestrial parts of the Isle of Man are outside the SLVIA study area)

18.144 The baseline seascape, landscape and visual amenity of receptors and at viewpoints within these geographic areas, are described in turn and assessed using this structure in the SLVIA.

18.145 Seascape, landscape and visual receptors often cover the same geographic area. For example, the LDNP is defined by the National Park designation and its special qualities, while also including LCAs covering the same area as the LDNP, as well as visual receptors such as footpaths and hill summits from which this landscape is experienced. Where relevant, seascape, landscape and visual receptors are described and assessed together, such as a LCA and designation covering the same location, or a viewpoint representing views from a particular visual receptor. This approach avoids repetition and allows the assessment of the effects of the Project on these receptor areas using all of the relevant landscape and visual baseline information.

18.5.3.2 LDNP

Overview

18.146 The geographic area of the LDNP is shown in **Figure 18.3**. Its current baseline seascape, landscape and visual amenity is described in this section, based on the seascape character of the St Bees to Haverigg Coastal Waters MCA (31) (which defines the associative seascape setting of the LDNP coastline); and the landscape character of the South Cumbria Low Fells NCA (19) and West Cumbria Coastal Plain NCA (7) which defines its character at the national level. The LDNP's special qualities are also described, along with the LCAs within the LDNP Landscape Character Assessment and Guidelines (LDNPP, 2021a).

Preliminary assessment

18.147 The construction of the Project has the potential to result in significant effects on the following receptors within the LDNP or its associate seascape setting. These have been considered in the preliminary assessment (refer to **Appendix 18.2**) and summarised in the relevant tables below for LDNP receptors:

- MCAs - **Table 18.12** (**Figure 18.9**)
- NCAs - **Table 18.13** (**Figure 18.10**)
- LCTs - **Table 18.14 (Figure 18.11**)
- Long Distance Walking Routes - **Table 18.15** (**Figure 18.14**)
- LDNP Special Qualities - **Table 18.16**

- Representative viewpoints - **Table 18.17** (**Figure 18.5**)

18.148 The receptors which have been scoped into the detailed assessment, along with the rationale are set out in **Table 18.12** - **Table 18.17**.

Table 18.12 MCA - LDNP

MCA	Rationale
MCAs omitted from the SLVIA	
St Bees to Haverigg Coastal Waters (31)	Limited potential for significant effects on perceived seascape character due to the location of the Project at long distance outside the MCA and the baseline influence of operational offshore windfarms (within the regional windfarm grouping formed by Barrow, West of Duddon Sands, Ormonde and Walney windfarms) within the intervening area between the MCA and the windfarm site, such that the additional influence of the Project is perceived as being subsumed behind existing windfarms, at greater distance and smaller scale further offshore. These existing offshore windfarms already form a key defining characteristic to the south of the MCA such that its perceived character would not significantly change as a result of the addition of a further windfarm influence within the backdrop of the southern Irish Sea outside the MCA and beyond these operational windfarms to the south.

Table 18.13 NCAs - LDNP

NCA	Rationale
NCAs included in the SLVIA	
7 - West Cumbria Coastal Plain	**Potential for significant visual effects as ZTV coverage extends across a notable area of the coastline within the LDNP.**
NCAs omitted from the SLVIA	
Cumbria High Fells (8); Morecambe Bay Limestones (20); South Cumbria Low Fells (19).	No potential for significant effects due to distance from the windfarm site and limited association with the seascape due to inland location (NCAs 8 and 19), or the coastal aspect, which is less influenced by the Irish Sea and more influenced by the coastline enclosing Morecambe Bay (NCA 20).

Table 18.14 LCTs - LDNP

Name	Rationale
LCT included in the SLVIA	
Coastal Sandstone (E)	**Potential for significant visual effects as ZTV coverage extends across a notable area within the study area.**
LCTs omitted from the SLVIA	
Estuary and Marsh LCT (A), Coastal Margins (B); Lowland (D); Rugged/Craggy Volcanic High Fell (F); Lowland Valley (M); Low Fell (K).	No potential for significant effects due to limited association with the windfarm site arising from distance from the windfarm site and the number and extent of offshore windfarms in the seascape surrounding the Project (B), or the inland nature of the LCT (D, F, M, K).

Table 18.15 Long distance walking routes – LDNP

Name	Rationale
Long Distance Walking Routes included in the SLVIA	
Cumbrian Coastal Way	**Potential for significant effects due to the length of the route within the ZTV and the availability of sea views.**
England Coast Path Route	
Long Distance Walking Routes omitted from the SLVIA	
Alfred Wainwright; Coast to Coast Walk; Grassington to West Coast; Great Cautley Challenge; Heart of Bowland Walk; Howgills 2000 Tops; Journey through the centre of the Kingdom	No potential for significant effects due to limited visibility of the Project either due to a combination of the inland nature of the route and the overall distance from the windfarm site and likely screening by intervening landscape elements.
Eastern Hadrianic Way; Lancashire Trail; Traditional Hostels Lakes; Wainwright Memorial Walk; Walking Round the Lakes; Walking Tour of Lakeland.	No potential for significant effects due to limited visibility of the Project arising from distance from windfarm site.

18.149 Baseline descriptions are provided below for the above seascape, landscape and visual receptors identified as requiring further assessment. A baseline description of MCA 31 is provided for context, as it forms the seascape setting to the LDNP, but the Project is assessed as having no potential for significant effects on its perceived seascape character (as described in **Table 18.12**).

MCAs

St Bees to Haverigg Coastal Waters MCA (31)

18.150 MCA 31 forms the maritime setting of the LDNP as shown in **Figure 18.9,** (recognising that the LDNP contains sea views from inland areas to the west as well). The MCA covers the shallow inshore waters from St Bees in the north to Haverigg Point in the south. The south-western boundary with the offshore MCA 37: Irish Sea North (England) follows the 20m bathymetry contour line. Its offshore boundary is located over 33km from the windfarm site at its closest point.

18.151 MCA 31 St Bees to Haverigg Coastal Waters is defined by the relatively remote and undeveloped south-west coastline of Cumbria. The long, smooth coast supports no harbours or towns and only changes at the mouth of the Esk, where a convoluted estuary lies behind mature dune systems. Sellafield Power Station is located to the north along this coastline, just outside the SLVIA study area. On the Esk and within the LDNP, Ravenglass is the main tourist centre of this coast. Typical of the few small villages along the coast, it has little development along the coastline itself. Broad sandy beaches interspersed by rocky scars extending out to sea form shallow coastal waters that attract holidaymakers who frequent numerous caravan parks on the coast. Sellafield nuclear power station dominates views in the northern part of the MCA but the lack of human activity contributes to high nature conservation value, particularly around the dune and estuary systems at Drigg. The area has high tranquillity and dark sky values.

18.152 The views between land and sea include existing offshore windfarms within the adjacent MCA 32: Walney Coastal Waters and Duddon Estuary, and MCA 38: Irish Sea South (England). These operational windfarms include Ormonde (located 13km from the LDNP) and the wider windfarm grouping of Walney 1-4 and West of Duddon Sands (located 19km from the LDNP). These operational windfarms are ‘remote’ from this maritime coastline of the LDNP but have affected the perception of Special Quality 13 of the LDNP – ‘Opportunities for quiet enjoyment’ as a result of their influence on the associative seascape setting of the LDNP, particularly the coastline between St Bees and Haverigg.

18.153 As summarised in **Table 18.13** - **Table 18.14**, the adjacent coastline is defined by the West Cumbria Coastal Plain NCA (07) and Coastal Sandstone LCT (E) defined by the ‘LDNP Landscape Character Assessment and Guidelines’ (LDNPP, 2021a).

NCAs

South Cumbria Low Fells NCA (19)

18.154 The South Cumbria Low Fells NCA (19) (**Figure 18.10**) extends south and south-east of the central core of the Lake District and eastwards to cover the River Lune valley. The NCA is located 42.7km from the closest proposed WTG, to the north-east of the Project windfarm site. It is characterised by undulating low fells and ridges dissected in the central section by Windermere and Coniston Water, and minor river valleys. Windermere is the largest lake in England and is iconic of the Lake District, heavily used for recreation and tourism. Out with the National Park to the east, the landscape comprises open, semi-improved pasture on a plateau between the rivers Kent and Lune, with a shallow relief of ridges and hollows. Some 51% of the area falls within the LDNP, a recognition of its natural beauty and importance for access and recreation, while 2% falls within the Yorkshire Dales National Park, which borders the NCA to the east.

West Cumbria Coastal Plain NCA (7)

18.155 The West Cumbria Coastal Plain NCA (07) (**Figure 18.10**) forms “a plain of varying width between the Cumbrian High Fells NCA in the east and the Irish Sea to the west”. The NCA is located 31.0km from the closest proposed WTG, to the north-east of the Project windfarm site. The area of the NCA between Drigg and Silecroft falls within the LDNP. Several existing offshore windfarms within the Irish Sea form part of the seascape setting of the NCA, which encompasses a diverse range of habitats; extensive areas of land reclaimed from coal mining, iron and steel industries; and processing industries around the towns/ports of Whitehaven, Workington and Maryport.

18.156 A large part of the NCA falls within the LDNP, a recognition of its natural beauty and importance for access and recreation.

LDNP – Designation

Introduction

18.157 The Lake District is both a National Park and a World Heritage Site. It covers 2,362km^2 (LDNPP, 2021a) of land in total (**Figure 18.12**). The LDNP is a self-contained mountainous area of narrow, glaciated valleys radiating from a central massif with steep hillsides and slender lakes. This landscape is the result of distinctive agro-pastoral traditions that have evolved under the physical constraints of its mountain setting. Spectacular mountain scenery shaped by geological and glacial processes have created deep glaciated valleys radiating out from the central fells. The high open fells contain a mosaic of craggy peaks and screes, heaths, bogs, heather moorland and grassland, as well as remote valleys with fast flowing streams and tarns. In contrast, the

valleys shelter lakes and woodland alongside enclosed farmland with traditional stone farm buildings.

18.158 High fells cover the majority of the National Park, with low fells and limestone in the south-eastern area. The National Park extends south-west to the coast and encompasses the coastal plain along the Cumbria coastline. The rugged/craggy volcanic high fells lie in a broad band running east to west across the central part of the LDNP. Upland valleys dissect the high fells creating a distinctive spoke-like pattern that extends into rugged/angular slate high fell, to the north. Black Combe forms an outlying area of the LDNP fells located near the coast to the south-west of the LDNP. Low fells dissected by a number of lowland valleys covers the south-eastern corner of the LDNP, sloping downwards to meet low fell fringe, coastal limestone and coastal margins, to the south

18.159 Key risks and issues regarding these landscapes are recognised in the LDNP Management Plan (LDNPP, 2021b). These include climate change; reconciling the tensions between managing the cultural landscape and enhancing the natural environment; biodiversity decline; visitor management; and the impacts of development. To address these, the LDNP Management Plan (LDNPP, 2021b) sets out a vision for the National Park with key Themes and Outcomes. One of these is the development of “A spectacular landscape, its wildlife and cultural heritage”.

18.160 The LDNP is particularly relevant to the SLVIA due to the value attached to its coastal landscape within the SLVIA study area. The most prominent association with the seascape relates to the patchwork of intertidal mudflats, sandy/pebble beaches and saltmarshes lining the western coast and southern estuaries of the LDNP (LCT A); and the gently rolling low-lying farmland forming its hinterland (LCT E). This section of coastline is approximately 19km in length and the LDNP is located 43.4km from the closest proposed Project WTG.

18.161 This coastline is predominantly flat and open, with very few visible buildings or built form, except distant industrial structures. Beaches slope upwards to merge into gently rolling farmland behind. The combination of these factors means that extensive views westwards across the wide expanse of the Irish Sea and eastwards towards the dramatic High Fell backdrop, with vast skies and a strong sense of tranquillity are common throughout.

LDNP - Special Qualities

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

> *"To conserve and enhance the natural beauty, wildlife and cultural heritage of the National Parks.*
>
> *To promote opportunities for the public understanding and enjoyment of the special qualities of the Parks".*

18.163 The special qualities of the LDNP are defined in the LDNPP's Management Plan 2020-2025 (LDNPP, 2021b) as indicators of what comprises its natural beauty and also contribute to its Outstanding Universal Value as a World Heritage Site. They have been defined as a result of stakeholder engagement and technical evidence prepared by the LDNPP since designation of the LDNP.

18.164 The LDNP has many special qualities which together define its sense of place and attract people to live and work in the area and visit the LDNP, but it is also a living, working and ever-changing landscape, shaped by its human history.

18.165 The special qualities of the LDNP are defined as follows (LDNPP, 2021b):

- *"1. A world class cultural landscape.*
- *2. Complex geology and geomorphology.*
- *3. Rich archaeology and historic landscape.*
- *4. Unique farming heritage and concentration of common land.*
- *5. The high fells.*
- *6. Wealth of habitats and wildlife.*
- *7. Mosaic of lakes, tarns, rivers and coast.*
- *8. Extensive seminatural woodlands.*
- *9. Distinctive buildings and settlement character.*
- *10. A source of artistic inspiration.*
- *11. A model for protecting cultural landscapes.*
- *12. A long tradition of tourism and outdoor activities.*
- *13. Opportunities for quiet enjoyment."*

18.166 The special qualities that are scoped into the SLVIA are identified and described in **Table 18.16**, using descriptions from Annex 1 of the LDNPP's Management Plan 2020-2025 (LDNPP, 2021b), as those that require further assessment to determine if the Project has potential to significantly affect

these special qualities. Aspects of these special qualities also comprise attributes of the LDNP's Outstanding Universal Value, which are set out in Annex 3 of the Lake District Management Plan 2020-2025 (LDNPP, 2021b).

Table 18.16 Defined Special Qualities of the LDNP

Special quality	Description (LDNP Special Qualities Report)
1. A world class cultural landscape	*The English Lake District is a self-contained mountain area whose narrow, radiating glaciated valleys, steep fells and slender lakes exhibit an extraordinary beauty and harmony. Its landscape results from a fusion of a distinctive communal farming system with picturesque villas, planting and gardens dating from the 18th and 19th centuries. This has attracted and inspired writers and artists of global stature; and also stimulated the conservation movement, based on the idea of landscape as a human response to our environment. The cultural force of the National Park has world-wide ramifications and rooted in the diversity of the landscape. This includes coast, lakes, distinctive farmland, fell, woodland, industrial activity and settlement while each of its thirteen valleys are individually distinct. The character of the Lake District cultural landscape has evolved slowly over many centuries and continues to evolve under the influence of the local community.*
7. Mosaic of lakes, tarns, rivers and coast	*The National Park has a rich variety of becks, rivers, lakes, tarns and coast that are internationally important because of their water quality and/or biodiversity. The plants and animals they support depend on the differences in water chemistry which in turn are influenced by the variations of the underlying geology.* *Although each river and lake has its own distinct identity, together with their catchment of mountains, woodland and farmland, they collectively contribute to the high quality scenery and natural resource which is so distinctively 'The Lake District' and unique in England. The becks and rivers of the Lake District have been harnessed to provide power for a variety of industries and, from the 19th century, the need for fresh water for expanding cities in North-West England has resulted in modification of a number of the major lakes.* *The Lake District can also celebrate the heritage of 100 years of scientific investigation into lake and stream ecology, and the biological function of freshwater systems, which is recognised throughout the world.*

Special quality	Description (LDNP Special Qualities Report)
13. Opportunities for quiet enjoyment	*The tranquillity of the fells, valleys and lakes gives a sense of space and freedom. The open character of the uplands, and the absence of modern development, is especially important. To walk freely across the fells, or climb their crags, is liberating and gives a sense of discovery and achievement. There is a feeling of wildness, offering personal challenges for some and impressive open views for everyone. To many people the Lake District is a safe place to explore: it is possible to feel remote, yet know that the nearest settlement is never far away. These characteristics provide important opportunities for spiritual refreshment: a release from the pressures of modern day life and a contrast to the noise and bustle experienced elsewhere. These are all vital components of the concept of quiet enjoyment and can be found in many places across the whole of the National Park. The value of the Lake District landscape for spiritual nourishment, originating in the Romantic recognition of the capacity of landscape to nurture and stimulate imagination, creativity and spirit, was recognised by the gift of the highest mountain land in England to the National Trust as a memorial to those who perished fighting in World War 1.*
	The following special qualities have been scoped out of the SLVIA: ▪ *2. Complex Geology and Geomorphology* ▪ *3. Rich archaeology and historic landscape* ▪ *4. Unique farming heritage and concentration of common land* ▪ *5. The high fells* ▪ *6. Wealth of habitats and wildlife* ▪ *8. Extensive seminatural woodlands* ▪ *9. Distinctive Buildings and Settlement Character* ▪ *10. A source of artistic inspiration* ▪ *11. A model for protecting cultural landscapes* ▪ *12. A long tradition of tourism and outdoor activities*

LDNP - Landscape Character

18.167 The LDNP Landscape Character Assessment and Guidelines (LDNPP, 2021a) has been used as the basis for the landscape characterisation and assessment of land within the LDNP (**Figure 18.11**), given its purpose as a comprehensive, integrated assessment of the character of the LDNP.

18.168 The Landscape Character Assessment (LDNPP, 2021a) defines 13 LCTs, divided into sub-types where relevant, and 71 Areas of Distinctive Character (ADCs) that cover the entire LDNP.

18.169 The LDNP's coastline is predominantly characterised by the Coastal Sandstone LCT (E) with smaller areas of Estuary and Marsh LCT (A) at Sleker Bay and Coastal Margins LCT (B) around the mouth of the River Esk and Ravenglass.

18.170 The Preliminary Assessment (**Appendix 18.12**) summarised in **Table 18.14,** has determined that Coastal Sandstone LCT (E) is scoped into the SLVIA. A full description of this LCT is set out in the LDNP Landscape Character Assessment and Guidelines (LDNPP, 2021a) and this is summarised as follows.

Coastal Sandstone (E)

18.171 Coastal Sandstone (**Figure 18.11**) covers the coastline within the LDNP, extending between Drigg and Silecroft. The LCT is located along the West Coast adjacent to the Estuary and Marsh (A) and Coastal Margins (B) LCTs and bordered inland by the High Fell Fringe (J), Rugged/Angular Slate High Fell (G) and Upland Valley (H) LCTs. This LCT continues outside the National Park boundary.

18.172 Coastal Sandstone lies within the Eskdale and Duddon World Heritage Site Valleys and meets the sea, with associated strong maritime influences and extensive sea views. It is located over 43.7km from the closest proposed Project WTG.

18.173 The definitive attributes of Coastal Sandstone LCT (E) are:

- An open coastline with sand and shingle, sandy beaches and dunes, with the underlying geology occasionally showing in the form of low sandstone cliffs
- Landscape underlain by a relatively broad band of Triassic sandstone (and mudstones), producing low-lying ground that is suitable for agriculture
- Gently rolling topography slopes gradually upwards in a west to easterly direction, from the sea towards the dramatic rising High Fells to the east
- Strong sense of openness prevails in several locations, with extensive views westwards across the Irish Sea and eastwards towards the imposing High Fell backdrop
- Hedgerow network, pockets of semi-natural woodland and a number of small river or stream corridors running through the landscape, provide ecological interest
- Settlement pattern consists of a combination of small red sandstone hamlets or villages and dispersed farmsteads

18.174 Viewpoint 24 Silecroft Beach (**Figure 18.47**) illustrates the existing landscape character of the Coastal Sandstone LCT (E).

LDNP - Visual receptors

Primary Transport Routes – A595

18.175 The 137km long A595 road runs between Carlisle and Dalton-in-Furness, loosely following the foot of the Lake District's western fells, being set back from the coast of the LDNP. North of Silecroft, at the junction with the A5093, it turns north-east to go around the Duddon Estuary. As it passes through the LDNP, the road is slightly elevated with expansive views of the Irish Sea lying perpendicular to the road. As it circumnavigates the Duddon Estuary, the road is set back further inland and the open sea is generally visible between low hills backing the coastline and intervening vegetation. Crossing at Duddon Bridge, the mouth of the estuary is more visible due to the flatter topography of the valley and intermittently screened by intervening boundary vegetation.

Cumbrian Coastal Way

18.176 The 298km route extends between the English/Scottish border, to the north; and the Cumbrian/Lancastrian boundary, to the south. The route runs from Ravenglass to the LDNP's southern boundary, to the south of Silecroft, through a narrow coastal plain backed by the imposing bulk of Black Combe. The straight, south-westerly facing coastline provides open views northwards along the coastline where Sellafield power station is a landmark feature. From much of the route, there are vast, expansive seascape views perpendicular to the route. South of Ravenglass, where the route is oriented more north/south, southerly views looking directly towards the Eastern Irish Sea. The route crosses the River Esk, runs behind the Eskmeals Range Ministry of Defence (MOD) site on Stockbridge, leaving it at Stubb Place to follow the shoreline south past Tarn Point, Annaside and Black Combe to Silecroft and the LDNP boundary. South of Silecroft, Haverigg III windfarm is another landmark, on the site of the former RAF Millom site adjoining His Majesty's Prison (HMP) Haverigg.

England Coast Path Route

18.177 The England Coast Path is a new walking route that will follow the entire coast of England and, when complete, will be the longest coastal walking route in the world, at 4,498km. The Coastal Path is opening in sections and the following sections within the North-West are open to the public (as of January/February 2023):

- Allonby to Whitehaven
- Whitehaven to Silecroft
- Silecroft to Green Road
- Walney Island

18.178 The Whitehaven to Silecroft section runs for 52km from Whitehaven southwards along Cumbria's wild west coast to St Bees, passing the terminus of the 'Alfred Wainwright Coast to Coast' walk and the north-west's highest cliffs. It follows the same route as the Cumbrian Coastal Way, entering the LDNP and English Lake District World Heritage Site (WHS) at Ravenglass and passing the Frontiers of the Roman Empire WHS. From the wild Drigg dunes and beach to the south, there are dramatic views inland to the Lake District fells and expansive seaward views as described above for the Cumbrian Coastal Way.

LDNP – Representative viewpoints

18.179 The existing view from representative viewpoints within the LDNP are described in **Table 18.17**. Baseline photographic panoramas showing the existing view from each viewpoint are shown in the visualisation figures as cross referenced in **Table 18.17.**

Table 18.17 LDNP – Representative Viewpoints

ID	Viewpoint	Baseline view
1	Black Combe (**Figure 18.24**)	The viewpoint is located at the summit of the hill, at a height of 600m Above Ordnance Datum (AOD). The panoramic and far-ranging view takes in the mouth of the River Esk and Sellafield, to the north-west; the Irish sea and the Isle of Man, to the west; offshore windfarms, to the south-west; and Walney Island and Barrow-in-Furness, to the south-east and south. The view looks south west over the Cumbrian coast. The Irish Sea extends across much of the view and is only enclosed by the Isle of Man, further out to sea while several offshore windfarms appear to lie off the coast at Barrow-in-Furness. Development within Barrow and particularly at Sellafield contrasts with the largely rural coastline which is covered with farmland interspersed with patches of woodland. Inland the distinctive moorland covered hills of the Lake District extend over a large proportion of the view.
24	Silecroft Beach (**Figure 18.47**)	The viewpoint is located by the public car park behind Silecroft Beach. The viewpoint is representative of recreational users of the beach and walkers on the England Coast Path. The west Cumbrian coastline partially encloses the panoramic and far-ranging view. Cliffs lies in the medium distance to the north and residential buildings along the sea front, to the south. Relatively close by, Black Combe (Viewpoint 1) screens much of the view inland. The Irish Sea extends across much of the view with extensive offshore windfarms off the coast at Barrow-in-Furness. The coast and its hinterland is rural with farmland interspersed with patches of woodland and

ID	Viewpoint	Baseline view
		scattered settlements. The village of Silecroft lies inland of the viewpoint. Offshore WTGs occupy a sizable proportion of the view. The yellow jackets of the closest WTGs (Ormonde and the Walney Offshore Wind Farm grouping) are clearly visible and the view of them is full height. Beyond these, the vertical scale of the WTGs gradually decreases as they appear beyond the horizon.

18.5.3.3 North-West England

Overview

18.180 This part of the SLVIA study area includes the Barrow-in-Furness, Copeland and South Lakeland districts of Cumbria outside the LDNP; the Fylde, Lancaster, West Lancashire and Wyre districts of Lancashire; and Blackpool. The geographical area of these districts is shown in **Figure 18.3**. Merseyside is considered in **Section 18.5.1.5**.

18.181 The region's current baseline seascape, landscape and visual amenity is described as follows based on the MCAs which define this coastline (Morecambe Bay MCA (33); Blackpool Coastal Waters and Ribble Estuary MCA (34)) and the NCAs (Morecambe Coast and Lune Estuary NCA (31); and Lancashire and Amounderness Plain NCA (32)) which defines its character at the national level. These MCAs are shown in **Figure 18.9** and the NCAs are shown in **Figure 18.10**.

Preliminary assessment

18.182 The construction of the Project has the potential to result in significant effects on the following receptors within North-West England. These have been considered in the preliminary assessment (refer to **Appendix 18.2**) and summarised in the relevant tables below for North West England receptors:

- MCAs - **Table 18.18** (**Figure 18.9**)
- NCAs - **Table 18.19** (**Figure 18.10**)
- LCAs - **Table 18.20** (**Figure 18.11**)
- Designated landscapes, including National Parks, AONBs and Registered Parks and Gardens - **Table 18.21 - Table 18.23** (**Figure 18.12**)
- Country Parks - **Table 18.24** (**Figure 18.13**)
- Long Distance Walking Routes - **Table 18.25** (**Figure 18.14**)
- Representative viewpoints - **Table 18.26** (**Figure 18.5**)

18.183 The receptors which have been scoped into the detailed assessment, along with the rationale are set out in **Table 18.18 - Table 18.26** as follows.

Table 18.18 MCA – North-West England

MCA	Rationale
MCAs included in the SLVIA	
MCA 38 - Irish Sea South (England)	**Potential for significant effects as the MCA host the windfarm site with complete coverage by ZTV.**
MCA 32 - Walney Coastal Waters and Duddon Estuary	**Potential for significant effects as the MCA adjoins MCA 38, hosting the windfarm site with complete coverage by ZTV.**
MCA 34 - Blackpool Coastal Waters and Ribble Estuary	**Potential for significant effects as the MCA adjoins MCA 38, hosting the windfarm site with complete coverage by ZTV.**
MCAs omitted from the SLVIA	
Morecambe Bay (33).	No potential for significant effects due to the number and extent of offshore windfarms in the seascape and the distance from the windfarm site and greater influence of the surrounding coastline.

Table 18.19 NCAs – North-West England

NCA	Rationale
NCAs included in the SLVIA	
32 - Lancashire and Amounderness Plain	**Potential for significant visual effects as ZTV coverage extends across a notable area, within the study area.**
NCAs omitted from the SLVIA	
Morecambe Coast and Lune Estuary (31); Bowland Fells (34); Bowland Fringe and Pendle Hill (33); Cheshire Sandstone Ridge (62); Cumbria High Fells (8); Howgill Fells (18); Lancashire Coal Measures (56); Lancashire Valleys (35); Mersey Valley (60); Morecambe Bay Limestones (20); Shropshire, Cheshire and Staffordshire Plain (61); South Cumbria Low Fells (19); Southern Pennines (36); Yorkshire Dales (21).	No potential for significant effects due to limited ZTV coverage and weak association with the seascape arising from the inland location and distance from the sea; or due to coastal aspect, which is less influenced by the Irish sea and more influenced by the coastline enclosing Morecambe Bay (NCA 20).

Table 18.20 LCAs – North-West England

Name	Rationale
LCAs included in the SLVIA	
Coastal Plain LCA (2c) - Coastal Margins LCT (2)	**Potential for significant effects due to relatively closer distance to the Project and exposure of the coast, although substantial presence of operational offshore windfarms in the baseline seascape context.**
19a - Fylde Coast Dunes	**Potential for significant effects due to relatively closer distance to the Project, westerly coastal aspect and lower influence of offshore windfarm development.**
LCAs omitted from the SLVIA	
Carnforth-Galgate-Cockerham (12a); Hest Bank-Silverdale Marshes (18b); Heysham Overton(12c); Lune Marshes (18d); Piling and Cockerham Marshes (18e).	No potential for significant effects due to limited association between the seascape surrounding the windfarm site and the LCA, either solely due to distance from the windfarm site (LCA 18b), or in combination with the coastal aspect, which is less influenced by the Irish Sea and more influenced by the coastline enclosing Morecambe Bay (LCAs 12a, 12c, 18d, 18e).

Table 18.21 AONBs – North-West England

Name	Rationale
Areas of Outstanding Natural Beauty omitted from the SLVIA	
Arnside and Silverdale	The Arnside and Silverdale AONB is located some 52.7km from the windfarm site (**Figure 18.5a**), however the closest parts of the AONB with theoretical visibility of the windfarm site consist of intertidal sand and mudflats in the Kent estuary and Morecambe Bay (roughly half of its area), which are not readily accessible. The closest terrestrial areas of the Arnside and Silverdale AONB coastline that have theoretical visibility and public access, are located over 57km from the windfarm site, at Jenny Brown's Point. Theoretical visibility extends north along the coast to Arnside Park and Arnside Knott, with the popular OS viewpoint at Arnside Knott located 59km from the windfarm site (just inside the SLVIA study area). Although the ZTV (**Figure 18.5a**) shows theoretical visibility from this section of the AONB coastline, effects on the perceived qualities of the Arnside and Silverdale AONB are likely to be limited due to the very long distances involved, the limited amount of the WTGs visible from this predominantly low lying coast and the low frequency of visibility at such long range (**Table 18.10**) (with 9.6% visibility frequency at 50-60km). The majority of the geographic area of the Arnside and Silverdale AONB has no theoretical visibility of the windfarm site inland away from the immediate coastal edge (**Figure 18.5a**).

Name	Rationale
	There is no precedent for significant effects on highly valued nationally designated landscapes at this range (over 52.7km). The OESEA Buffer Study (White Consultants, 2020) recommends distances for buffers from nationally designated landscapes depending on WTG size. Table 13.4 of the OESEA buffer study identifies that for AONBs with coastal special qualities (e.g. the Arnside and Silverdale AONB), a 40km buffer is recommended to achieve a low magnitude of change for offshore wind farm developments with WTGs of 301-350m in height, based on the limit of visual significance (i.e. to avoid significant effects). The Project's WTGs of 310m (above HAT) maximum blade tip height are well below this low magnitude (not significant) threshold at 52.7km from the Arnside and Silverdale AONB, and therefore accord with the OESEA and NPS EN-3 (para 2.8.349) and EN-1 (para 5.10.7). Based on the Project specific assessment undertaken and the evidence base in the OESEA referred to in NPS EN-3, there is no potential for the Project to result in significant effects on the special qualities of the Arnside and Silverdale AONB. The effects of the Project on the Arnside and Silverdale AONB are assessed as not significant and scoped out of further assessment within the SLVIA.
Forest Of Bowland	The Forest of Bowland AONB is located some 50km from the windfarm site (**Figure 18.5b**), set inland to the east of the M6 corridor and to the east of urban areas such as Morecambe, Lancaster and Garstang. The Forest of Bowland AONB is essentially an inland AONB that does not have a direct seascape setting, however the elevated fells offer long distance views to the west to Morecambe Bay and the Irish Sea. The fells of the Forest of Bowland AONB that have theoretical visibility and public access, include the areas around Clougha Pike, Appletree Fell, Grizedale Fell, Bleasdale Moors, Fair Snape Fell and Beacon Fell, and are generally located at distances between 54 - 60km from the windfarm site. The ZTV (**Figure 18.5b**) shows theoretical visibility from the upper areas of these fells of the AONB, however effects on the perceived qualities of the Forest of Bowland AONB are likely to be limited due to the very long distances involved, the small scale of the WTGs and the low frequency of visibility at such long range (**Table 18.10**) (with 9.6% visibility frequency at 50-60km). The lower fells and river valleys within the Forest of Bowland AONB have no theoretical visibility of the windfarm site (**Figure 18.5a**). There is no precedent for significant effects on highly valued nationally designated landscapes at this range (over 50km). The OESEA Buffer Study (White Consultants, 2020) recommends distances for buffers from nationally designated landscapes depending on WTG size. Table 13.4 of the White 2020 Report identifies that for AONBs with coastal special qualities (e.g. the Forest of Bowland AONB), a 40km buffer is recommended to achieve a low magnitude of change for offshore wind farm developments with WTGs of 301-350m in height, based on the

Name	Rationale
	limit of visual significance (i.e. to avoid significant effects). The Project's WTGs of 310m (above HAT) maximum blade tip height are well below this low magnitude (not significant) threshold at 52.7km from the Forest of Bowland AONB, and therefore accord with the OESEA and NPS EN-3 (para 2.8.349) and EN-1 (para 5.10.7. Based on the Project specific assessment undertaken and the evidence base in the OESEA referred to in NPS EN-3, there is no potential for the Project to result in significant effects on the special qualities of the Forest of Bowland AONB. The effects of the Project on the Forest of Bowland AONB are assessed as not significant and scoped out of further assessment within the SLVIA.

Table 18.22 National Parks – North-West England

Name	Rationale
National Parks omitted from the SLVIA	
Yorkshire Dales National Park.	The Yorkshire Dales National Park is outside the SLVIA study area. No potential for significant effects due to distance from the windfarm site and small area within ZTV.

Table 18.23 Parks and Gardens – North-West England

Name	Rationale
Parks and Gardens included in the SLVIA	
Promenade Gardens, Lytham St Anne's	Potential for significant effects on views experienced from Promenade Gardens, Lytham St Anne's is assessed from representative viewpoint at Viewpoint 10: Lytham St Anne's (**Figure 18.33**) assessed in full in **Appendix 18.3**.
Parks and Gardens omitted from the SLVIA	
Lytham Hall; Scarisbrick Hall.	No potential for significant visual effects as, while ZTV coverage extends across a notable area, the inland location, woodland within the estate and intervening urban development would limit visibility of the Project.
Ashton Gardens; Barrow Park; Churchtown Botanic Gardens; Fleetwood Memorial Park; Hesketh Park; King's Gardens And South Marine Gardens; Promenade Gardens, Lytham St Anne's; Stanley Park, Blackpool; The Mount Including Surrounding Cobble Wall	No potential for significant visual effects as, while ZTV coverage is extensive, a very small area lies within the ZTV.
Anfield Cemetery; Ashton Memorial Gardens And Williamson Park; Astley Hall; Avenham Park; Avenham Walk; Birkenhead Park; Borough Cemetery, St Helens; Capernwray Hall; Croxteth Hall Park; Derby Park; Flaybrick Memorial Gardens; Grounds Of Thornton Manor; Harris Knowledge Park (Former Harris Orphanage); Haslam Park; Hoghton Tower; Holker Hall; Ince Blundell Park; Knowsley Park; Lancaster Cemetery; Landscape Associated With The Former Pilkingtons Headquarters Complex; Levens Hall; Lever Park; Moor Park; Muncaster Castle; Newsham Park; Preston Cemetery; Princes Park, Liverpool; Rivington Gardens; St James's Gardens (Formerly St James's Cemetery); Stanley Park, Liverpool; Taylor Park; Woodfold Park; Worden Hall	No potential for significant effects due to distance from the windfarm site and very small area within ZTV.

Name	Rationale
Allerton Cemetery; Belle Isle; Blackwell; Brockhole; Burton Manor; Castle Park, Frodsham; Dallam Tower; Gardens At Graythwaite Hall; Ness Botanic Gardens; Queen's Garden; Sefton Park; Sizergh Castle; The Dell, The Diamond And The Causeway, Port Sunlight; The Willows; Toxteth Park Cemetery; Wavertree Botanic Garden And Park.	No potential for significant effects as outside ZTV.

Table 18.24 Country Parks – North-West England

Name	Rationale
Country Parks omitted from the SLVIA	
Bardsea; Rimrose Valley; Wyre Estuary	No potential for significant effects due to distance from the windfarm site and small area within ZTV.
Arrowe; Beacon Fell; Beacon Park; Bidston Hill; Croxteth Hall; Cuerden Valley Park; Eastham Woods; Haigh; Lever Park; North Wirral Coastal; Pex Hill; Royden Park; Smithills; Terraced Gardens Rivington; Wirral, The; Witton; Yarrow Valley	No potential for significant effects due to distance from the windfarm site and small area within ZTV.
Fell Foot; Marbury; Pennington Flash; Rivacre; Sankey Valley Park; Stadt Moers; Stanney Woods; Worthington Lakes	No potential for significant effects as outside ZTV.

Table 18.25 Long Distance Walking Routes – North-West England

Name	Rationale
Long Distance Walking Routes included in the SLVIA	
Lancashire Coastal Way	**Potential for significant effects as a considerable section of this route between Silverdale and Freckleton has theoretical visibility of the Project from the Fylde coastline, which is comparatively near to the windfarm site.**
Wyre Way	**Potential for significant effects as a Section 1: Fleetwood Peninsula Loop (26km); has theoretical visibility of the Project from the Fylde coastline, which is comparatively near to the windfarm site.**
Long Distance Walking Routes omitted from the SLVIA	
Aerospace Way (Blackpool to Bridlington); Clitheroe 60K; E-route 8 (Hull to Liverpool); Two Roses Way.	No potential for significant effects due to limited visibility of the Project either arising solely from the inland nature of the route (Clitheroe 60k, Two Roses Way); or combined with its general east-west orientation; surrounding urban character as it approaches the coast; and the overall distance from the windfarm site (Aerospace Way and E-route 8).
Cumbria Way; Dales High Way; Dales Way; Lancashire Trail; Limestone Link Cumbria; Lune Valley Ramble; Millers Way; Ravenber Way; Ribble Way; Richmond Way; Thirlmere Way; Tidewater Way; Tops of the North (Three Shire Heads to Carlisle).	No potential for significant effects due to limited visibility of the Project arising from distance from the windfarm site.

18.184 Baseline descriptions are provided below for the above seascape, landscape and visual receptors identified as requiring further assessment.

MCAs

Irish Sea South (England) (MCA 38)

18.185 MCA 38, as shown on **Figure 18.9**, encompasses the area of the Irish Sea in the offshore waters off the coastlines of England, north Wales, Anglesey and the Isle of Man. MCA 38 does not have an adjacent coastline. The outer boundary of the North-West Offshore MPA defines MCA 38's western boundary. The remaining boundary adjoins MCA 37 Irish Sea North (England), MCA 31 St Bees to Haverigg Coastal Waters, MCA 32 Walney Coastal Waters and Duddon Estuary, MCA 34 Blackpool Coastal Waters and Ribble Estuary

and MCA 35 Inner Liverpool Bay. The southern tip of the MCA overlaps Welsh waters within MCA 4 North Wales Open Waters.

18.186 This area of the Irish Sea is busy with fishing, main shipping routes, oil and gas extraction, and dredging. To the north, offshore windfarms extend from within MCA 32: Walney Coastal Waters and Duddon Estuary into MCA 38. Lighting associated with these activities, offshore structures and WTGs influence the MCA's night-time character. The shallow sea is generally less than 40m deep, sheltered with low tidal flows and distant from coasts that are low-lying. Ferry routes linking England, Ireland and the Isle of Man traverse the area which is otherwise not widely visible apart from distant views from the Lake District fells.

Blackpool Coastal Waters and Ribble Estuary MCA (34)

18.187 MCA 34 (**Figure 18.9**) encompasses the Fylde Coast to the north, terminating at the southern edge of Lune Deep, and the Sefton Coast as far south as Formby Point. Separating these two coastlines, the Ribble Estuary, cuts inland to Preston between Lytham St Anne's and Southport. The shallow, coastal area shelves very gently down from the low-lying Lancashire coastal plain.

18.188 The MCA adjoins MCA 32: Walney Coastal Waters and Duddon Estuary, to the north; the open waters of MCA 38: Irish Seas South (England), to the west; and the Mersey Channel (within MCA 36 Dee and Mersey Estuaries and Coastal Waters) and the busier waters of MCA 35: Inner Liverpool Bay to the south.

18.189 Wide, sandy beaches characterise the MCA, resulting from a combination of shallow waters and high tidal range. Sefton Coast is dominated by sand dunes in contrast to the more urban coastline to the north of the Ribble, centred on Blackpool. The Ribble Estuary is noted for its wildfowl, waders and seabirds. Further offshore, the Lennox oil and gas field reflects the importance of the Irish Sea for energy production.

18.190 The adjacent coastline includes the Lancashire and Amounderness Plain NCA (32) and Sefton Coast NCA (57) (**Figure 18.10**); and the Fylde Coast Dunes LCA (19a) (Lancashire County Council, 2000); Dune Backlands LCA (3); Coastal Marshlands LCA (4) and Estate farmlands LCA (6) defined by the 'Landscape Character Assessment of Sefton' (Sefton Council, 2003) (**Figure 18.11**).

NCAs

Lancashire and Amounderness Plain NCA (32)

18.191 NCA 32 (**Figure 18.8**) is located 28.8km from the closest proposed WTG to the east of the Project windfarm site.

18.192 Morecambe Bay, the Bowland Fringe and Liverpool bound NCA 32 to the north, east and south, respectively. The plain is an area of low-lying high-grade agricultural land. It comprises highly productive undulating farmland on the coastal plain, to the east; and former mosslands, their remnant sites, and coastal marshes and dunes, in the west.

18.193 North of the Ribble Estuary, the Amounderness plain includes the coastal plain known as The Fylde. It is a relatively flat to gently rolling coastal plain that contains the estuary, lower reaches and tributaries (the Calder and Brock rivers) of the River Wyre. Improved pasture predominates the medium to large-scale, ordered landscape, with isolated arable fields in a pattern of medium-sized fields with field ponds, bounded by clipped hedgerows and drainage ditches. Mixed woodland sculpted by wind punctuates the plain. South of the Ribble Estuary, the plain is predominantly open, high-quality farmland. This highly productive arable land lies in a rectilinear pattern of large fields bounded by steep-sided ditches, localised reedbeds and steep embankments. These features develop the area's dramatic transformation from marshland to a rich, ordered agricultural landscape.

North-West England - Landscape Character

18.194 Detailed descriptions of the region's current baseline landscape and visual amenity are provided in the 'Cumbria Landscape Character Guidance and Toolkit' (CCC, 2011); and 'A Landscape Strategy for Lancashire Landscape Character Assessment' (Lancashire County Council, 2000). These provide county level descriptions of LCTs and LCAs, respectively, which are shown on **Figure 18.11**.

18.195 The Cumbrian coastline outside the LDNP includes the Duddon Estuary, Walney Island and the northern shore of Morecambe Bay. These Bays and Estuaries (LCT 1) are predominantly enclosed by Coastal Margins (LCT 2). Intertidal Flats (1a) within the Duddon and Cartmel Estuaries are enclosed by Dunes and Beaches (2a), Coastal Mosses (2b), Coastal Plain (2c) and Coastal Urban Fringe (2d), these LCAs extending around to the south side of Barrow-in-Furness. Low Drumlins (7a) and Drumlin Field (7b) adjoins the east of Barrow. Open Farmland and Pavement (3a) encompasses the remaining coastline around Bardsea, Grange-over-Sands and Arnside. Small areas of Coastal Marsh (1b) lie in the Walney Channel and off the Cartmel peninsula.

18.196 The Lancastrian coastline is largely characterised as Urban with smaller areas of Open Coastal Marsh (LCT 18) associated with estuaries, within the Hest

Bank-Silverdale Marshes (18b), Lune Marshes (18d) and Piling and Cockerham Marshes (18e) LCAs; larger areas of Low Coastal Drumlins, within Carnforth-Galgate-Cockerham (12a) and Heysham Overton (12c) LCAs; and a few smaller areas of Coastal Dunes (LCT 19) along the Fylde Coast (LCA 19a). The Ribble Marshes LCA (18b) characterises the Ribble estuary.

18.197 The Preliminary Assessment in **Appendix 18.12**, as summarised in **Table 18.20**, has determined which LCAs are considered in the SLVIA. The baseline characteristics of those LCAs that are scoped into the SLVIA are as follows.

Coastal Plain LCA (2c) - Coastal Margins LCT (2)

18.198 The Coastal Plain (**Figure 18.11**) covers an extensive area around the Solway Firth, and smaller areas around the Duddon Estuary, Walney Island and Cartmel Sands. It continues into the LDNP where it is classified as Coastal Plain (B3) (LDNPP, 2021a).

18.199 This LCA comprises an open, flat and larger scale landscape with simpler land cover patterns, predominantly of improved pasture divided into large square fields bounded by drainage ditches. Rougher and marshy pasture with rushes or gorse scrub occur around the moss, saltmarsh fringes and along watercourses. On the exposed coast, hedges and trees are sparse with thicker hedges and wind sculpted hedgerow trees are scattered in more sheltered areas. Wind sculpted hedges and trees provide a sense of exposure to natural processes. Buildings and copses provide prominent features. There are long views with big expansive skies of the sea, and the Lakeland and Scottish Fells. Outer coastal plains are strongly influenced by the seasons and the weather and can create a sense of tranquillity and calm when the weather is good, or exposure when bad. The landscape type gives the appearance of peaceful backwaters relatively unspoilt by contemporary development.

18.200 The key characteristics of the Coastal Plain LCA (2c) are:

- Flat and slightly undulating coastal plain
- Long and narrow fields in undulating areas with larger fields in flat areas
- Intersected by shallow rivers and watercourses
- Hedges form main field boundaries
- Scarce tree cover
- Predominantly pasture with some arable in drier areas
- Frontiers of the Roman Empire – Hadrian's Wall WHS is a significant archaeological feature
- Historic field pattern strongly linked to settlements

18.201 Viewpoints that illustrate the existing landscape character of the Coastal Plain LCA (2c) include:

- 6. South Walney Nature Reserve (**Figure 18.29**)

Fylde Coast Dunes LCA (19a) - Coastal Dunes LCT (19)

The Fylde Coast Dunes (**Figure 18.11**) lie in a narrow discontinuous band between the sea and inland farmland or coastal development including sea walls or promenades. Their landform varies from natural hummocky dunes at St Anne's to more modified areas, some being levelled and managed as amenity grassland. Semi-natural grassland, sometimes grazed, is the predominant vegetation. The dunes are a small remnant of a once extensive system reduced by surrounding streets, car parks, tourist accommodation and golf courses. A network of winding, undulating minor paths and the seafront promenades provide access to the dunes. Modern buildings and car parks, often associated with tourism, appear as incongruous elements within the dunes and against the wild scenery. The open and exposed dunes provide sea views with dominant skies.

18.202 Viewpoints that illustrate the existing landscape character of the Fylde Coast Dunes LCA (19a) include:

- 8. Rossall Point, Fleetwood (**Figure 18.31**)
- 9. Blackpool Tower (**Figure 18.32**)

10. Lytham St Anne's (**Figure 18.33**)

North-West England - Visual receptors

Primary Transport Routes – A584

18.203 The 30.6km A854 runs between Cleveleys and Clifton where it adjoins the A583. It follows the coastline closely along the seaward edge of settlement, becoming Blackpool Promenade and only enters urban development again at Lytham St Anne's. Opposite Church Scar, the road briefly returns to the settlement edge, before passing through the eastern end of Lytham to Warton and Freckleton. For much of this length, the open sea is visible perpendicular to the road, albeit often interrupted by coastal structures and tourist attractions along the seafront. South of Blackpool the road runs along the foot of dunes and enter the urban form of Lytham St Anne's, these two elements screening the sea from view.

Lancashire Coastal Way

18.204 The long-distance route runs along the full length of the Lancastrian coastline from Cumbria to Merseyside. The coastline comprises a variety of landscapes such as the limestone scenery of Arnside/Silverdale AONB, grazed salt marshes, agricultural land, seaside resorts and major river estuaries. From

Silverdale Cove, the route runs along Silverdale Beach before following Shore Road and Linden Road through the town of Silverdale. Passing inland of Jenny Brown's Point, it then crosses the rail line to follow Crag Road before turning to follow the coast pass Carnforth. Entering Morecambe, it follows Marine Road to Station Promenade where it turns sharply inland along Central Drive. After crossing the River Lune, it follows the river's south bank to the coast. After a brief diversion inland of Braides, the route stays on the coastline past Fleetwood, Blackpool and Lytham St Annes. At Saltcotes, the route briefly follows Preston Road before following the north bank of the River Ribble past Warton aerodrome, where it turns inland abruptly at Freckleton Pool to end at Freckleton.

18.205 Views of the sea are perpendicular to much of the coastal route and the sea only lies directly ahead when heading westbound on sections north of Morecambe, Cockersand and Fleetwood (Viewpoint 8, **Figure 18.31**); and south of Lytham St Annes. Views of the sea are open and expansive around from the western coastline of the Fylde peninsula, while the northern coastline looks across Morecambe Bay and the southern coastline looks across the Ribble Estuary. Along the section of coast at Blackpool (Viewpoint 9, **Figure 18.32**), receding coastline encloses the sea to the north and south, within Cumbria, and Merseyside and North Wales respectively. As the route circumnavigates Morecambe Bay or skirts the Ribble Estuary, distant sea views become more enclosed, with the Furness and Fylde peninsulas containing views from Morecambe Bay.

Wyre Way

18.206 The 72km route comprises four sections, Section 1: Fleetwood Peninsula Loop (26km); Section 2: Shard Bridge to Garstang (19km); Section 3: Garstang to Abbeystead (16km) and Section 4: The Tarnbrook Loop (10.5km).

18.207 From Wyre Estuary Country Park, Section 1 heads north along the Wyre estuary before turning inland, to cross the peninsula before following the coastline from Rossall. It passes Rossall Point observation tower and marine lakes to the sea front at Fleetwood past the lighthouse and lifeboat station to the Knott End Ferry terminal. After crossing the Wyre Estuary the route heads South along the river, past old salt mines, sea defences and salt marsh, crossing Shard Bridge past the Skipool Creek yacht moorings and the Blackpool and Fleetwood Yacht Club to return to The Wyre Estuary Country Park.

18.208 Views of the sea from Section 1 are restricted to the length between the B5268/Fleetwood Road and Rossall Point (Viewpoint 8, **Figure 18.31**). Initially following the road, the sea will lie perpendicular to the route. As the route turns down Rossall Lane to the coastline, over the Amounderness Way and A587, the sea is directly ahead. Following the coast from Rossall School, the sea is

perpendicular to the direction of travel. East of Rossall Point, the open sea is directly ahead for westbound walkers while eastbound walkers have the enclosed Morecambe Bay to the north. East of Knott End, the remaining part of Section 1 follows the River Wyre inland with little visibility of the sea.

North-West England – Representative viewpoints

The existing view from representative viewpoints within North-West England are described in **Table 18.26**. Baseline photographic panoramas showing the existing view from each viewpoint are shown in the visualisation figures as cross referenced in **Table 18.26**.

Table 18.26 North-West England Representative Viewpoints

ID	Viewpoint	Baseline view
2	Haverigg Point (**Figure 18.25**)	The viewpoint is located at Haverigg Point, overlooking the Duddon Estuary. Dunes backing the viewpoint screen the view north. West of the viewpoint the coastline's aspect changes from westerly to southerly and the shores of the estuary enclose the wide, far-ranging sea view. To the south, the low hills of the Furness peninsula descend to flat coastal plain, hosting the settlement of Barrow-in-Furness, and Walney Island. The peninsula is largely agricultural with patches of woodland, becoming urban at its head. The view south south-west and out to sea overlooks the sandy expanse of Duddon Sands. Windfarm development extends across much of the horizon of open sea, appearing on the periphery of the seascape. The nearest WTGs are visible down to their clearly discernible yellow jackets. Inland are more dunes, farmland and Black Combe (Viewpoint 1). Onshore wind turbines are visible west of HMP Haverigg and on the hills of the Furness peninsula.
3	Ulverston (Hoad Monument) (**Figure 18.26**)	The OS mapped viewpoint is located next to the Hoad Monument (also known as the Sir John Barrow Monument), just north of Ulverston. The elevated viewpoint looks south-west over Ulverston and gently rolling farmland enclosed by hedgerows and interspersed with woods, to the sea. Backing the viewpoint, the landscape is predominantly covered by rough grazing against a backdrop of the Lake District fells. In the view, pylons and an isolated wind turbine are notable vertical features with offshore wind turbines extending across much of the view beyond the quite distant coastline. To the south, the view overlooks Morecambe Bay which is enclosed by the developed Lancashire coast, hosting the Heysham 1 and 2 power stations, with low coastline beyond continuing along north Wales to Conwy.

ID	Viewpoint	Baseline view
4	High Haume Farm (Dalton-in-Furness) **(Figure 18.27)**	The viewpoint is located on the Public Right of Way (PRoW) at the mast on the south face of High Haume. The expansive view overlooks rolling farmland to the coast, Walney Island and the sea. To the north-west, hedgerow in the immediate foreground screens much of the view. There is a glimpse of the near wild landscape of Sandscale Haws National Nature Reserve, north of Walney Island and the coastline at Haverigg Point (Viewpoint 2) while Duddon Estuary, coastline to the north and Black Combe (Viewpoint 1) are screened. To the south, beyond Morecambe Bay, the low-lying Lancastrian coast encloses the view. The developed coastline of Blackpool is discernible and marked by the prominent Blackpool Tower, above. Looking directly out to sea, farmland enclosed by hedges and interspersed with broadleaved woodland extends to the coast. Pylons, wind turbines and large farm buildings populate the farmland. Small settlements are dispersed throughout with the largest settlement, Barrow-in-Furness extending over the brow of a low hill. At Barrow shipping and large dockside structures, particularly cranes and Devonshire Dock Hall are discernible. Offshore windfarm development extends across a sizable proportion of the view in two groupings. To the north, the larger OWF (Ormonde) encroaches within the seascape from the horizon, encompassing a handful of rigs. To the south, the smaller OWF (Barrow) lies more towards the shore and clearly within the seascape. The profile of the Isle of Man is barely perceptible behind. Many of the offshore wind turbines of the Ormonde and the Walney Offshore Wind Farm grouping are visible down to their yellow jackets.
5	Walney Island (Biggar Bank Road) (**Figure 18.28**)	The viewpoint is located just south of the Round House Hub and Café on the road along the island's west coast. Residential development along the road backs the viewpoint. The Round House screens the long, straight coastline from the northerly view and it extends into the distance, to the south. The view of the open sea is panoramic and far ranging. Offshore windfarm development lies on the horizon, in two distinct groupings that occupy a sizable proportion of the sea view. The southern grouping is less dense and extensive. The nearest wind turbines are visible down to their yellow jackets.

ID	Viewpoint	Baseline view
6	South Walney Nature Reserve (**Figure 18.29**)	The viewpoint is located north-west of Coast Guard Cottages. The landscape of the nature reserve backs the viewpoint with settlement to the north and within Barrow; and Piel Channel and its island directly behind. A change in topography to the north screens the long, straight coastline which disappears to the south as its aspect changes from west-facing to south-facing. The view of the open sea is panoramic and far ranging. Offshore windfarm development lies on the horizon, forming a single grouping of wind turbines and occupying a sizable proportion of the sea view. The nearest wind turbines are visible down to their yellow jackets.
7	Heysham Head (**Figure 18.30**)	The viewpoint is located near the chapel at the northern end Heysham Head. The viewpoint lies within the Heysham Coast National Trust property at the Barrows, an area of grassland and woodland which was formally a picturesque garden, edged by the only sea-cliffs in Lancashire. Nearby are the 8th century remains of St Patrick's Chapel and several rock hewn graves. The wide view takes in the broad seascape enclosed by the Furness Peninsular and the Fylde coast east of Fleetwood, to the north-west and south-west respectively. The Furness peninsula slopes down gently from the head of Morecambe Bay to Walney Island with discernible settlements along the coastline. The silhouette of the Lake District fells behind terminates at the recognizable outline of Black Combe (Viewpoint 1). Several windfarms are visible within the peninsula's farmland and woodland. Behind the nearby Heysham Port, the Fylde coastline lies along the horizon. Heysham 1 and 2 power stations are located at the port, their rectangular bulk screening part of the view beyond. Associated pylons, a wind turbine and structures within the port are clearly observable. Offshore windfarm development is barely perceptible off the Walney Island coast. Its extent is not appreciable and has little influence on the view. The coastline is predominantly settled in character with Heysham Port considerably influencing its quality.
8	Fleetwood (Rossall Point) (**Figure 18.31**)	The viewpoint is located on the promenade at the point where the Fylde coastline turns from north facing to west facing. The panoramic sea view encompasses the seascape of Morecambe Bay and the Eastern Irish Sea. The recognisable silhouette of the Lake District fells, the Furness peninsula, Black Combe (Viewpoint 1) and Walney Island, enclose the view north. Coastal settlement on the peninsula is increasingly perceivable towards its tip. Large scale and tall structures within Barrow are discernible. Offshore WTGs appear as a single group on the otherwise open sea horizon, to the west. The closest of these are visible down to their jackets and they appear regularly spaced. Smaller maritime elements and shipping are

ID	Viewpoint	Baseline view
		detectable within the wide expanse of the seascape. Sea defence's screen much of the nearby coastline to the south, but Blackpool Tower is visible above these. The coastline is predominantly settled in character with Barrow-in-Furness influencing its quality.
9	Blackpool (near Tower) (**Figure 18.32**)	The viewpoint is located on the promenade near Blackpool RNLI Lifeboat Station between Blackpool's Central and North Piers. The viewpoint is backed by urban development within the town including Blackpool Tower and numerous buildings in leisure use. This section of the Fylde peninsula's coast is straight with a westerly aspect. To north and south the coastline recedes into the distance and is partially screened by sea defence's and shoreline structures including the flanking piers. Despite their reach across the broad sandy beach, the broad view takes in a very wide horizon of open sea. The expansive seascape is noticeably devoid of maritime structures. Two distinct offshore windfarm developments, at Barrow and West of Duddon Sands OWFs, appear quite compact on the horizon to the north-west. Their wind turbines appear regularly spaced on the periphery of the seascape and with much of their entire height visible.
10	Lytham St Anne's (**Figure 18.33**)	The viewpoint is located at St Anne's on the Sea on the Fylde peninsula, north of St Anne's Pier. The viewpoint is backed by urban development that screens the view inland. This section of the Fylde coast has a south-westerly aspect as it turns inland to form the Ribble Estuary. To north-west, the coastline disappears as it turns north. To the west, the expansive seascape of open sea is emphasized by the broad sandy expanse of Salter's Bank in the foreground. Offshore wind turbines appear in three separate groups: A distant group on the north-west horizon that extends across a notable portion of the view, comprising West of Duddon Sands and Walney OWFs; a similar, smaller group (Barrow OWF) partially screened by grass covered dunes in the foreground; and a more spread out and less dense grouping to the south (Burbo Bank/Extension). None of these grouping appears to encroach within the seascape but rather appear on its periphery. The nearby pier screens much of the view south. Beyond this the coast of North Wales is perceptible and encloses the view.

18.5.3.4 Merseyside

Overview

18.209 This section of the SLVIA includes the Sefton and Wirral districts of Merseyside. The geographical area of these districts is shown in **Figure 18.3**.

18.210 The region's current baseline seascape, landscape and visual amenity is described based on the MCAs which define this coastline (MCA 34: Blackpool Coastal Waters and Ribble Estuary; and MCA 36: Dee and Mersey Estuaries and Coastal Waters); and the NCAs (Merseyside Conurbation (58); Sefton Coast (57); and Wirral (59)) which defines its character at the national level. These MCAs are shown in **Figure 18.9** and the NCAs are shown in **Figure 18.10**.

Preliminary assessment

18.211 The construction of the Project has the potential to result in significant effects on the following receptors within Merseyside. These have been considered in the preliminary assessment (refer to **Appendix 18.2**) and summarised in the relevant tables below for Merseyside receptors:

- MCAs - **Table 18.27** (**Figure 18.9**)
- NCAs -**Table 18.28** (**Figure 18.10**)
- LCAs - **Table 18.29** (**Figure 18.11**)
- Parks and Gardens - **Table 18.30** (**Figure 18.12**)
- Country Parks - **Table 18.31** (**Figure 18.13**)
- Long distance walking routes - **Table 18.32** (**Figure 18.14**)
- Representative viewpoints - **Table 18.33** (**Figure 18.5**)

18.212 The receptors which have been scoped into the detailed assessment, along with the rationale are set out in **Table 18.27** - **Table 18.33** as follows.

Table 18.27 MCA - Merseyside

MCA	Rationale
MCAs included in the SLVIA	
MCA 34 - Blackpool Coastal Waters and Ribble Estuary	**Potential for significant visual effects as ZTV coverage extends across a notable area within the study area.**
MCAs omitted from the SLVIA	
MCA 35 Inner Liverpool Bay	No potential for significant effects due to the number and extent of existing offshore windfarms within the MCA.
MCA 36 Dee and Mersey Estuaries and Coastal Waters	No potential for significant effects due to the number and extent of existing offshore windfarms within the MCA.

Table 18.28 NCA - Merseyside

NCA	Rationale
NCAs included in the SLVIA	
57 - Sefton Coast	**Potential for significant visual effects as ZTV coverage extends across a notable area within the study area.**
NCAs omitted from the SLVIA	
Bowland Fells (34); Bowland Fringe and Pendle Hill (33); Cheshire Sandstone Ridge (62); Cumbria High Fells (8); Howgill Fells (18); Lancashire Coal Measures (56); Lancashire Valleys (35); Merseyside Conurbation (58); Mersey Valley (60); Shropshire, Cheshire and Staffordshire Plain (61); Southern Pennines (36); Yorkshire Dales (21); Wirral (59).	No potential for significant effects due to distance from the windfarm site and limited association between its surrounding seascape and the NCA, either due to the inland nature of the NCA or its predominantly urban character (NCAs 58 and 59).

Table 18.29 LCAs – Merseyside

Name	Rationale
LCAs included in the SLVIA	
2 - Coastal Dunes **3 - Dune Backlands** **4 - Coastal Marshlands**	**Potential for significant effects due to ZTV coverage arising from comparatively close distance to the Project, westerly coastal aspect and lower influence of offshore windfarm development.**
LCAs omitted from the SLVIA (Sefton)	
Sandy Foreshore (1); Carr Farmlands (5); Estate Farmlands (6); Settled Farmlands (7); Enclosed Marsh (8); Sandstone Hills (9).	No potential for significant effects due to the level and extent of existing offshore windfarms in the associative seascape and the predominantly urban nature of the LCA.
LCAs omitted from the SLVIA (Wirral)	
North Wirral Coastal Edge (1a); Dee Estuarine Edge (1b); Eastham Estuarine Edge (1c); The Birket River Floodplain (2a); The Fender River Floodplain (2b); Bidston Sandstone Hills (3a); Thurstaston and Greasby Sandstone Hills (3b); Irby and Pensby Sandstone Hills(3c); Heswall Dales Sandstone Hills(3d); Landican and Thingwall Lowland Farmland (4a); Thornton Hough Lowland Farmland and Estates(4b); Clatterbrook and Dibbin Valley Lowland Farmland and Estates(4c); Raby Lowland Farmland and Estates(4d); North Wirral Foreshore and Coastal Waters(5a); Dee Estuary (6a).	No potential for significant effects due to the number and extent of offshore windfarms in the associative seascape and the urban nature of the adjoining areas.

Table 18.30 Parks and Gardens - Merseyside

Parks and Gardens	Rationale
Parks and Gardens omitted from the SLVIA	
Muncaster Castle	No potential for significant visual effects as, while ZTV coverage extends across a notable area, woodland within the estate will limit visibility of the Project; and Ormonde, West of Duddon Sands and Walney OWFs extend across a large extent of views from the castle and within the seascape.
Croxteth Hall Park; Knowsley Park; Lytham Hall.	No potential for significant visual effects as, while ZTV coverage extends across a notable area, the inland location, woodland within the estate and intervening urban development would limit visibility of the Project.
Scarisbrick Hall	No potential for significant visual effects as, while ZTV coverage extends across a notable area, the inland location and woodland covered hill to the north would limit visibility of the Project.
Anfield Cemetery; Ashton Gardens; Ashton Memorial Gardens And Williamson Park; Astley Hall; Avenham Park; Avenham Walk; Barrow Park; Birkenhead Park; Borough Cemetery, St Helens; Churchtown Botanic Gardens; Derby Park; Flaybrick Memorial Gardens; Fleetwood Memorial Park; Grounds Of Thornton Manor; Harris Knowledge Park (Former Harris Orphanage);Haslam Park; Hesketh Park; Holker Hall; Ince Blundell Park; King's Gardens And South Marine Gardens; Lancaster Cemetery; Landscape Associated With The Former Pilkingtons Headquarters Complex; Miller Park; Moor Park; Newsham Park; Preston Cemetery; Princes Park, Liverpool; Promenade Gardens, Lytham St Anne's; St James's Gardens (Formerly St James's Cemetery);Stanley Park, Blackpool; Stanley Park, Liverpool; Taylor Park; The Mount Including Surrounding Cobble Wall; Worden Hall.	No potential for significant effects due to distance from the windfarm site and very small area within ZTV.
Capernwray Hall; Hoghton Tower; Levens Hall; Lever Park; Mesnes Park; Rivington Gardens; Woodfold Park.	No potential for significant effects due to distance from the windfarm site and small area within ZTV.

Parks and Gardens	Rationale
Allerton Cemetery; Belle Isle; Blackwell; Brockhole; Burton Manor; Castle Park, Frodsham; Dallam Tower; Gardens At Graythwaite Hall; Ness Botanic Gardens; Queen's Garden; Sefton Park; Sizergh Castle; The Dell, The Diamond And The Causeway, Port Sunlight; The Willows; Toxteth Park Cemetery; Wavertree Botanic Garden And Park.	No potential for significant effects as outside ZTV.

Table 18.31 Country Parks - Merseyside

Country Parks	Rationale
Country Parks omitted from the SLVIA	
Arrowe; Bardsea; Beacon Fell; Beacon Park; Bidston Hill; Croxteth Hall; Cuerden Valley Park; Eastham Woods; Haigh; Lever Park; North Wirral Coastal; Pex Hill; Rimrose Valley; Royden Park; Smithills; Stadt Moers; Terraced Gardens Rivington; Wirral, The; Witton; Wyre Estuary; Yarrow Valley	No potential for significant effects due to distance from the windfarm site and small area within ZTV.
Fell Foot; Marbury; Pennington Flash; Rivacre; Sankey Valley Park; Stanney Woods; Worthington Lakes	No potential for significant effects as no ZTV coverage.

Table 18.32 Long Distance Walking Routes – Merseyside

Name	Rationale
Long Distance Walking Routes included in the SLVIA	
Trans Pennine Trail	**Potential for significant effects due to the relative distance from the windfarm site and extent of the route near the coast with theoretical visibility of the Project.**
Long Distance Walking Routes omitted from the SLVIA	
Sefton Coastal Path	No potential for significant effects due to distance from the windfarm site and the extent of screening along the route between Southport and Formby. The route passes through woodland within Ainsdale National Nature Reserve (NNR) set back from the coast, or behind the sand dunes, such that there is limited visibility of the Project along this section. The path then takes a route inland to the south of Formby to Hightown,

Name	Rationale
	and then along the urbanised coastline of Crosby at longer distances.

18.213 Baseline descriptions are provided below for those seascape, landscape and visual receptors identified in the preliminary assessment in **Appendix 18.2** (and summarised above in **Table 18.27** - **Table 18.32**) as requiring further assessment. A baseline description of MCA 35 and MCA 36 also is provided for context, as they form the seascape setting to the Merseyside coast, however the Project is assessed as having no potential for significant effects on their perceived seascape character (as described in **Table 18.27**).

MCAs

Blackpool Coastal Waters and Ribble Estuary MCA (34)

18.214 MCA 34 (**Figure 18.9**), encompasses the Fylde Coast to the north, terminating at the southern edge of Lune Deep, and the Sefton Coast as far south as Formby Point. Separating these two coastlines, the Ribble Estuary cuts inland to Preston between Lytham St Anne's and Southport. The shallow, coastal area shelves very gently down from the low-lying Lancashire coastal plain.

18.215 The MCA adjoins MCA 32: Walney Coastal Waters and Duddon Estuary, to the north; the open waters of MCA 38: Irish Seas South (England), to the west; and the Mersey Channel (within MCA 36 Dee and Mersey Estuaries and Coastal Waters) and the busier waters of MCA 35: Inner Liverpool Bay to the south.

18.216 Wide, sandy beaches characterise the MCA, resulting from a combination of shallow waters and high tidal range. Sefton Coast is dominated by sand dunes in contrast to the more urban coastline to the north of the Ribble, centred on Blackpool. The Ribble Estuary is noted for its wildfowl, waders and seabirds. Further offshore, the Lennox oil and gas field reflects the importance of the Irish Sea for energy production.

18.217 The adjacent coastline includes the Lancashire and Amounderness Plain NCA (32) and Sefton Coast NCA (57) (**Figure 18.10**); the Fylde Coast Dunes LCA (19a) (Lancashire County Council, 2000); and the Dune Backlands LCA (3), Coastal Marshlands LCA (4) and Estate farmlands LCA (6) defined by the 'Landscape Character Assessment of Sefton' (Sefton Council, 2003) (**Figure 18.11**).

Inner Liverpool Bay MCA (35)

18.218 MCA 35 (**Figure 18.9**) is an intermediate area between the open sea to the west and the inshore area of flats and banks approaching the Mersey and Dee estuaries. The north-eastern edge of the MCA is defined by the main shipping lane from Liverpool. The south-west boundary extends into Welsh waters, guided by bathymetry and including the North Hoyle and Gwynt y Mor OWFs.

18.219 This MCA sits over 5km from the low-lying coasts to south and east. It lies in the infralittoral area of shallower waters, where freshwater influence boosts the numbers of marine organisms and helps to support fish stocks and coastal seabird populations. The area is on the main approach to the Mersey from across the Irish Sea, so is much used by shipping heading for the Queens Channel (see MCA 36: Dee and Mersey Estuaries and Coastal Waters). Ferries to the Isle of Man and Ireland pass through this area. Other human activity includes dredging and, historically, disposal of dredged material. The northern part of the area is within the Liverpool Bay oil and natural gas field, and offshore windfarms have been developed in recent years. Although offshore, the area is overlooked from the settled, low-lying coasts of the Wirral and Sefton.

Dee and Mersey Estuaries and Coastal Waters MCA (36)

18.220 MCA 36 (**Figure 18.9**) covers the Mersey and Dee Estuaries and their associated inshore areas, extending to include the mudflats around inner Liverpool Bay. It includes East Hoyle Spit, Newcome Knoll, Burbo Flats and the Queen's Channel which is the main approach for shipping to the Mersey. The northern boundary extends west of Formby along Taylor's Bank, which forms the northern side of the Queen's Channel. The offshore boundary adjoins the Inner Liverpool Bay MCA (35). The south-western boundary follows the Welsh Coast, extending offshore at Prestatyn and overlapping Dee Estuary (Wales) (MCA 01). For the purposes of the SLVIA, the area of MCA 36 entering Welsh waters is only considered as part of the Dee Estuary (Wales) (MCA 01).

18.221 The Mersey Estuary is characterised by major urban development, centred on Liverpool and Birkenhead, where the channel narrows and extending inland around the broader inner estuary. Liverpool is a long-established major port providing access inland and to the Manchester Ship Canal. North of Crosby the urbanised coastline gives way to beaches and dune systems. Historically, the Dee Estuary was also important for shipping but is much less developed. Tidal mud and sand flats backed by dunes and salt marsh characterise its broad inlet. The northern coast of the Wirral peninsular is more developed but its towns tend to be set back from the Dee coast. Extensive beaches allow access to small offshore islands at low tide. The busy shipping lane of Queen's

Channel influences the industrial character of the area, alongside onshore and offshore windfarms.

18.222 The adjacent coastline includes the Sefton Coast NCA (57), Merseyside Conurbation NCA (58) and Wirral NCA (59) (**Figure 18.10**); the Dune Backlands LCA (3), Coastal Marshlands LCA (4) and Estate farmlands LCA (6) defined by the 'Landscape Character Assessment of Sefton' (Sefton Council, 2003); and the North Wirral Coastal Edge LCA (1a), defined in 'Wirral Landscape Character Assessment' (WMBC 2019) (**Figure 18.11**).

NCAs

Sefton Coast NCA (57)

18.223 NCA 57 (**Figure 18.10**) is located 33.3km from the closest proposed WTG to the south-east of the Project windfarm site.

18.224 The Sefton Coast lies between the mouth of the Ribble Estuary and the edge of Crosby, to the north and south respectively. Intertidal sand flats and mudflats, coastal sand dunes and dune heathland, and conifer plantations, characterised the area which is backed by farmland. It contains a series of coastal settlements including Southport, Ainsdale, Formby and Hightown.

18.225 Shallow water and high tidal ranges have caused extensive sandy and muddy/sandy beaches along the Sefton Coast. Dunes of wind-blown sand are the dominant landscape feature of much of the coast. These rise to 20m AOD around Ainsdale and Formby where there are pine plantations on the dunes. Large areas of the coastline and estuaries are internationally designated for their conservation importance as wildlife habitats.

Merseyside - Landscape Character

18.226 Detailed descriptions of Merseyside's current baseline landscape and visual amenity are provided in the 'Landscape Character Assessment of Sefton' (SC, 2003) and 'Wirral Landscape Character Assessment' (WC, October 2019). These provide county level descriptions of LCAs shown on **Figure 18.11**.

18.227 Between the Ribble and Mersey Estuaries, the Sefton coastline is predominantly characterised by the Sandy Foreshore LCA (1) with a smaller area, to the north-western boundary, comprising Coastal Marshland LCA (4). The Coastal Dunes LCA (2) and LCA Dune Backlands (3) back these areas. The southern section, adjoining the River Mersey and within the Liverpool conurbation, is urban.

18.228 Viewpoints that illustrate the existing landscape character of the Sefton Coast include:

- 11. Southport Pier (**Figure 18.34**)
- 12. Formby Lifeboat Station (Formby Point) (**Figure 18.35**)

- 13. Clieves Hill (**Figure 18.36**)
- 14. Crosby Beach, near leisure centre (**Figure 18.37**)

18.229 The Wirral Coastline, between the Mersey and Dee estuaries, is predominantly urban with small areas characterised by the North Wirral Coastal Edge LCA (1a), adjoining the seascape of the North Wirral Foreshore and Coastal Waters Seascape Character Area (SCA) (5a); the Dee Estuarine Edge LCA (1b), adjoining the Dee Estuary SCA (6a); and the Eastham Estuarine Edge LCA (1c), adjoining the Mersey Estuary SCA (6b).

18.230 Viewpoints that illustrate the existing landscape character of the Wirral Coast include:

- 15. Fort Perch Rock, New Brighton (**Figure 18.38**)
- 16. Hoylake, Hilbre Point (**Figure 18.39**)

18.231 The Preliminary Assessment in **Appendix 18.12**, as summarised in **Table 18.29**, has determined which LCAs within Merseyside are considered in the SLVIA. The following sections provide baseline characteristics of those LCAs that are scoped into the SLVIA.

Coastal Dunes LCT (2)

18.232 The Coastal Dunes LCT (2) (**Figure 18.10**) is a semi-natural landscape characterised by small-scale dunes interspersed with occasional damp hollows. Marram grass covers extensive tracts of the dunes, with localised areas of blown sand along their seaward side. Their undulating ridges provide enclosure, reinforced by tree cover backing the dunes comprising pinewoods. Although these can appear incongruous, this is often balanced by the intricate transition between woodland and open dune. This dynamic relationship reflects the underlying character of the dune landscape.

18.233 Within this landscape there is a strong sense of visual containment with typically short views enclosed by dunes and mature pine plantations along their back. Views from the summits of seaward dunes, in contrast, are wider and more far ranging.

18.234 The key characteristics of the Coastal Dunes LCT (2) are:

- Small-scale undulating topography
- Intimate, visually contained landscape
- Wide vistas and glimpses of the sea from dune summits
- Mobile dunes with areas of blown sand
- Older ‘fixed’ dunes dominated by marram grass
- Occasional damp hollows with shallow pools

- Localised pinewoods to the rear of the dunes

Dune Backlands LCT (3)

18.235 The intimate Dune Backlands CT (3) (**Figure 18.11**) landscape is small scale, settled and pastoral. It forms the backlands to a closely associated low-lying zone of blown sand backing the coastal dunes. Wetland and heathland characterise their interface, the latter being particularly prevalent. A pattern of small rectilinear fields bounded by hedges or poorly defined by ditches and wire fences covers the area. Tree cover is limited such that lines of willow and other trees contribute strongly to the backland's character by filtering views and providing visual enclosure. Scattered farms and clusters of wayside dwellings populate the LCA.

18.236 The key characteristics of the Dune Backlands LCT (3) are:

- Low-lying hummocky topography
- Sandy soils with patches of heathland
- Dispersed pattern of farmsteads and wayside dwellings
- Poorly defined pattern of small rectilinear fields
- Lines of willow and scrub along ditches

Coastal Marshlands LCT (4)

18.237 The exposed, low-lying, semi-natural Coastal Marshlands landscape (**Figure 18.11**) is characterised by extensive tracts of unenclosed saltmarsh dissected by an intricate network of muddy creeks. The simple, visually unified landscape provides wide views out over the marsh to the far horizon. The sky and a sense of space dominate throughout. The marshlands have a quiet, secluded character that becomes bleak and uninviting when exposed to the full force of the sea winds.

18.238 The key characteristics of the Coastal Marshlands LCT (4) are:

- Flat, low-lying topography
- Intricate network of muddy creeks and channels
- Extensive tracts of unenclosed saltmarsh
- Wide views to far horizon
- Seasonally flooded shallow pools
- Large flocks of feeding birds

Merseyside - Visual receptors

Primary Transport Routes – A565

18.239 The 43.6km A565 runs between Tarleton and Liverpool, loosely following but being set back from the coastline as it traverses Southport, Formby and Crosby. Approaching Southport from the east, the town screens the sea and continues to do so as the road runs through it. Between Southport and Formby the dunes and woodland of Ainsdale Sand Dunes NNR continue to screen the sea from view. Urban form continues to restrict visibility of the sea as the road skirts the landward edge of Formby and the town itself limits visibility of the sea from the road south of the town. The road passes well inland of Hightown before woodland within Ince Blundell Park screens the landscape around the road entirely. Thereafter the road enters Crosby and the Liverpool conurbation and urban development encloses the road.

Trans Pennine Trail

18.240 The coast-to-coast Trans Pennine Trail (TPT) is a multi-user trail between Southport and Hornsea that traverses the Pennines and follows the network of former railway lines, canal towpaths and other waterside routes linking some of northern England's most historic towns and cities.

18.241 Following the coast south of Southport and its pier (Viewpoint 11, **Figure 18.34**) along Marine Drive and Coastal Road, the route provides expansive views over open sea perpendicular to the route as far south as Ainslie. Here, it turns inland to cross the rail line and the A565, where it joins NCN 62 to follow Plex Moss Lane with the sea directly ahead for westbound users and glimpsed in the distance beyond intervening vegetation within the flat coastal plain. East of Formby (Viewpoint 12, **Figure 18.35**), turning south to pass Burroughs wood, the route enters the Liverpool City Region and continues along Cheshire Lines Path crossing open farmland west of Ormskirk and Clieves Hill (Viewpoint 13, **Figure 18.36**), to Maghull. Progressing eastwards, limited tree cover increasingly filters the distant sea and encloses sea views. Entering the eastern edge of Maghull, the route becomes visually cut off from the sea as it passes around Jubilee Woods to cross the River Alt. At Netherton, the route re-enters the Liverpool conurbation and there is no visibility of the sea. From here the route follows the Leeds Liverpool Canal.

Merseyside – Representative viewpoints

18.242 The existing view from representative viewpoints within Merseyside are described in **Table 18.33**. Baseline photographic panoramas showing the existing view from each viewpoint are shown in the visualisation figures as cross referenced in **Table 18.33**.

Table 18.33 Merseyside - Representative Viewpoints

ID	Viewpoint	Baseline view
11	Southport Pier (**Figure 18.34**)	The viewpoint is located near Southport Pier on the Sefton coastline. This straight section of the Lancastrian coast has a north-westerly aspect. The view is enclosed to the north by the well-settled, low-lying coastline of the Fylde peninsula. To the north-west, the wide seascape of open sea is emphasized by the expanse of Southport Sands in the foreground. Offshore wind turbines are not perceptible in the view and Blackpool Tower, by virtue of its contrasting verticality in an otherwise flat coastal seascape, is the view's main feature. The nearby pier screens much of the view south. The viewpoint is backed by a busy road and retail and commercial development catering to visitors to the pier that screens the view inland.
12	Formby Lifeboat Station (Formby Point) (**Figure 18.35**)	The viewpoint is located on the sandy beach near the Formby Beach RNLI Lifeguard Station and grass covered dunes screen the view inland. This section of coastline forms a convex seaward curve such that the coastline turns out of sight to north and south. The panoramic view encompasses open sea with the coast of the Wirral peninsula and north Wales perceptible to the south and south-west, beyond wind turbines within Burbo Bank offshore windfarm. These are clearly discernible on the horizon, extending to a sizable proportion of it and appearing on the periphery of the seascape. Much of the height of their towers is visible and they appear well spaced. The offshore platforms within the Morecambe gas fields to the north-west are the only other perceptible maritime features, apart from smaller elements such as buoys.
13	Clieves Hill (**Figure 18.36**)	Lying south-west of Ormskirk in West Lancashire, the viewpoint is recognised by OS mapping. It is elevated on a low hill and the wide, far-ranging view encompasses the surrounding rural landscape of large fields bounded by hedgerows and interspersed with woodlands and dispersed settlement. To the south, the dense urban fabric of Liverpool lies in the middle distance against a backdrop of the hills of north Wales. The distinctive cranes of the Liverpool 2 container port are prominent above the general level of the city. Further west, wind turbines lying just offshore contrast with low-lying farmland and the Welsh hills in the far distance.
14	Crosby Beach, near leisure centre (**Figure 18.37**)	The viewpoint is located on the coastal edge of the Liverpool conurbation, near a public car park adjoining the Crosby Leisure Centre. The viewpoint overlooks the sandy Crosby beach and 'Another Place', a sculpture by Antony Gormley comprising 100 figures partially submerged in the beach. The wide, far-ranging view out to sea is partially contained by the Merseyside Coastline. This is low-lying and semi-natural to the north, albeit backed by residential

ID	Viewpoint	Baseline view
		development nearby. To the south, the coast is markedly urban with Liverpool's docklands, its cranes, onshore wind turbines and other tall structures relatively close by. Across the River Mersey is more residential development within the Wirral. Directly out to see the offshore wind turbines of Burbo Bank offshore windfarm are prominent, with the nearest being seen in their entirety. North Hoyle offshore windfarm is visible at long distance to the south.
15	Fort Perch Rock, New Brighton (**Figure 18.38**)	The viewpoint is located on the north-eastern tip of the Wirral headland by Fort Perch and is backed by Marine Lake and behind, leisure development along Marine Promenade. The moderately wide view of the Irish Sea is far ranging and enclosed by the coastline of Merseyside and Fort Perch, to the north-east/east; and the Marine Point Retail and Leisure Park - Shopping Centre, nearby to the west. Merseyside is low lying and predominantly urban with Seaforth Radio Tower, a single Seaforth wind turbine and tall structures within the docklands including cranes at the Liverpool 2 Container Terminal, clearly visible across the River Mersey. New Brighton Lighthouse is a prominent vertical structure nearby. Offshore windfarm development lies in three groupings extending across much of the view. Burbo Bank offshore windfarm is the nearest grouping and many of its wind turbines are visible down to their yellow transition pieces. These wind turbines appear relatively close by with the other groupings to the west appearing more distant. Fewer wind turbines are visible within the westernmost grouping (North Hoyle) which appears more dispersed. The central offshore windfarm (Gwynt y Môr) appears to contain a much higher number of wind turbines, which appear in receding rows that emphasises their number.
16	Hoylake, Hilbre Point (**Figure 18.39**)	Located on the north-western tip of the Wirral headland, the viewpoint lies at the western end of the sea defence's at Hilbre Point. The viewpoint lies at the start of a popular low-tide walk to the Hilbre Island Nature Reserve and is backed by residential development along the Wirral coastline. The panoramic view of the Irish Sea is far ranging and partially enclosed by the Merseyside coastline, to the north-east; and Hilbre Island, just offshore within the River Dee, and the north Wales coastline beyond, to the south-west. Merseyside appears low lying and distant in contrast to the north Wales coast, which appears much closer and comprises low hills covered by well wooded farmland. The broad sandy expanse of East Hoyle Bank lies in the foreground with numerous offshore wind turbines close by at Burbo Bank, visible down to their transition pieces; and further offshore to the south, at North Hoyle and Gwynt y

ID	Viewpoint	Baseline view
		Môr. Several offshore rigs are discernible alongside shipping activity.

18.5.3.5 North Wales

Preliminary assessment

18.243 The preliminary assessment presented in **Appendix 18.2** identifies that the Project has limited potential to result in significant effects on SLVIA receptors within North Wales and the Isle of Anglesey. This is due to the high number and geographical extent of existing offshore windfarm developments off the Welsh coast, and the distance from the windfarm site. The North Wales receptor area has therefore been scoped out of the detailed assessment in respect of landscape and seascape receptors, with no potential for significant effects to arise on these receptors in North Wales. However, a detailed assessment of representative viewpoints in this region has been undertaken within **Appendix 18.3** and baseline views from these representative viewpoints are summarised in **Table 18.34.**

18.244 The windfarm site would be located approximately 46.3km from the Point of Ayr, the closest part of the Welsh coast with the SLVIA study area. ZTV coverage is more fragmented along the Dee Estuary, becoming largely consistent along the north Wales coast between the Great Orme and Prestatyn. This becomes sparser inland as the Welsh hills rise up behind the coast at Snowdonia and the Clwydian range. The largest and most consistent area of ZTV covers the Vale of Clywd and just extends beyond the SLVIA study area. The closest part of the Isle of Anglesey coast, Penmon Point, lies approximately 56km from the windfarm site. The SLVIA study area only encompasses the Penmon peninsula and the coastline between Amlwych and Moelfre. ZTV coverage is more consistent along these parts of the Anglesey coast, however quickly cutting off as the ground rises inland.

18.245 The preliminary assessment in **Appendix 18.2** has identified limited potential for effects on seascape and landscape receptors in North Wales due to long distance from the windfarm site, the large scale of the associated seascape and the influence of operational offshore windfarms off the north Wales coast. Within views from the North Wales coast, the Project would be located entirely behind the operational offshore windfarms and represent a distant and small increase in the number and extent of offshore WTGs, and the Project's WTGs would often not be perceived at all in the prevailing weather conditions, at such long range subsumed behind the existing offshore windfarms.

18.246 The existing view from representative viewpoints within North Wales are described in **Table 18.34**. Baseline photographic panoramas showing the

existing view from each viewpoint are shown in the visualisation figures as cross referenced in **Table 18.34**

Table 18.34 North Wales - Representative Viewpoints

ID	Viewpoint	Baseline view
17	Talacre Beach (Point of Ayr) (**Figure 18.40**)	The viewpoint is located at the north-east corner of Flintshire in north Wales on Talacre Beach opposite the Point of Ayre lighthouse. The grass covered dunes backing the beach adjoin a well wooded rural hinterland interspersed with settlement and caravan parks near the beach. The open sea view is panoramic and far-ranging with the Wirral peninsula and the low-lying Merseyside coastline enclosing much of the view east. The cranes of Liverpool 2 and other tall docklands structures are notable within the predominantly level Merseyside coastline. In contrast, hills enclose the westward view of the north Wales coast. Looking directly out to sea, beyond the lighthouse, the expanse of sea is populated by three distinct groups of offshore wind turbines that collectively extend across the entire sea view. These are relatively close by but appear well spaced, to the east within Burbo Bank; denser within the central grouping of North Hoyle and Gwynt y Môr; and less numerous and dense within Rhyl Flats, to the west. Many of the wind turbines are visible down to their yellow transition pieces.
18	Prestatyn (Nova Centre) (**Figure 18.41**)	The viewpoint is located on the promenade along Prestatyn Beach on the coastline of Denbighshire. The beach is backed by urban development including a car park and the Nova Prestatyn leisure centre. The open sea view is panoramic, far ranging and enclosed by Rhyl, the Creuddyn Peninsula and inland hills, to the west; and the coastline of Merseyside and Lancashire with hills behind, to the east. While the Welsh coast appears well wooded with patches of farmland, extensive areas of settlement characterise the coast, particularly around Colwyn Bay. The Merseyside coast is flatter but equally developed with Liverpool 2's cranes clearly discernible. Looking directly out to sea over the straight sandy beach, offshore wind turbines extend across a sizable proportion of the sea horizon. These appear in three distinct groupings on the horizon. To the east, wind turbines within Burbo Banks appear fewer and more dispersed. The central grouping of North Hoyle and Gwynt y Môr covers the widest extent and appears most dense with a discernible layout pattern. To the west, the receding rows of the smaller Rhyl Flats OWF is apparent. Many of these wind turbines are visible down to their yellow transition pieces. Stone groynes with tall green markers divide the beach itself, while offshore, two rigs and shipping activity are visible.

ID	Viewpoint	Baseline view
19	Bryn-Ilwyn Viewpoint (Prestatyn) (**Figure 18.42**)	The OS mapped viewpoint is located next to the Gwaenysgor car park overlooking Prestatyn. The open sea view is panoramic, far ranging and enclosed by the Denbighshire/Conwy coastline to the west. The distinctive skyline of the Snowdonia hills descending to the Great Orme is clearly discernible beyond Colwyn Bay. Nearby hedgerow screens the easterly view. From this elevated location, the density of coastal settlements including Prestatyn, Rhyl and Abergele, is apparent. The hinterland comprises farmland enclosed by hedgerows with sporadic woodlands. The coastline has a broad, straight sandy beach beyond which three groupings of offshore wind turbines are visible. These extend across a sizable proportion of the sea horizon. The central grouping of North Hoyle and Gwynt y Môr appears both to cover the widest extent and to be the most dense. The layout pattern of this grouping and Rhyl Flats, to the west, is discernible. WTGs within Burbo Bank, to the east, appear fewer and more dispersed. Many of these wind turbines are visible down to their yellow transition pieces. From this elevated location the OWFs appear within the seascape, particularly the central grouping. Shipping and other maritime features including a rig are visible offshore.
20	Graig Fawr, Clywdian Range (**Figure 18.43**)	The OS mapped viewpoint is located on the western edge of the Clwydian hills at the hill's trigonometrical point, overlooking Meliden. The viewpoint lies within Graig Fawr Nature Reserve and backing the viewpoint, the landscape of the Clwydian Range and Dee Valley AONB comprises well wooded enclosed farmland. The North Wales Path and Offa's Dyke Path lie under 500m from the viewpoint, which is representative of visitors to the viewpoint, who are likely to include walkers taking a short diversion from these routes. The open sea view is expansive and far ranging. To the west, the Snowdonia hills descend to the Denbighshire/Conwy coastline and the Great Orme, enclosing the view. As Graig Fawr lies on the edge of the Clwydian hills, they screen the easterly view. This elevated location is more closely associated with the agricultural hinterland that extends into the Vale of Clwyd. This flat, hedgerow-enclosed farmland is well wooded while the nearby coastal settlements of Prestatyn and Rhyl are comparatively well treed. Settlement covers much of the land below the viewpoint and along the coast. Three groupings of offshore wind turbines occupy a sizable proportion of the sea horizon beyond the straight sandy coastline. The western Rhyl Flats OWF is the smallest grouping with wind turbines appearing in receding rows. The central grouping of North Hoyle and Gwynt y Môr appears both wider and denser than the flanking groupings. Burbo Bank, to the east, is discernible but more dispersed. Many of these wind turbines are visible down to their

ID	Viewpoint	Baseline view
		transition pieces and, due to the elevated viewpoint, encroach more within the seascape to appear less peripheral than from coastal viewpoints. Two masts lie on the eastern skyline at Bryn-llwyn while shipping and other maritime features including a rig are visible offshore.
21	Rhos Point (**Figure 18.44**)	The viewpoint is located on Marine Drive near the Holy Well and Chapel of St Trillo. The viewpoint is backed by residential development within Rhos-on-Sea. The expansive sea view is partially enclosed by Little Orme Head, to the west beyond Penrhyn Bay; and Llandulas, to the east beyond the larger Colwyn Bay, where the north Wales coastline and Clwydian hills emerge from behind the wooded hill of Cefn yr Ogof. Coastal settlement which aligns both bays is more prominent on the hills sloping down to the eastern bay. A single isolated grouping of offshore wind turbines, comprising Rhyl Flats and Gwynt y Môr OWFs, lies within the view. These are visible down to their yellow transition pieces and encroach within the seascape, rather than lying on the horizon.
22	Llandudno Promenade (**Figure 18.45**)	The viewpoint is located on Llandudno promenade. The viewpoint is backed by a road adjoining the promenade and behind, dense built form along the sea front of Wales' largest seaside resort that screens the inland view. The view is moderately wide and enclosed by the characteristic, rocky landforms of the Great Orme and Little Orme Head to the west and east, respectively. Llanduno's pier further encloses the view west. The seafront is urban in character with the rugged, stony qualities of the flanking landforms having some natural influence. Offshore wind turbines extend across a considerable proportion of the sea horizon and encroach within the contained seascape. The nearest of these are visible in their entirety.
23	Great Orme's Head (**Figure 18.46**)	The viewpoint is located within Great Orme Country Park, just north of the Summit Complex. The viewpoint is backed by the summit complex with the dramatic cliffs and wide sweep of Colwyn Bay behind. The view from the elevated viewpoint is panoramic and far ranging. The moderately distant coastlines of Anglesey and Denbighshire/Flintshire enclose the view west and east, respectively. Within the latter, Little Orme Head is a distinctive coastal landform relatively nearby. Rough grazing covers the Great Orme while the nearer coasts are covered by farmland, woodland and development. Development is notable on the low hill slopes above the shore beyond Colwyn Bay. A wide seascape contained by the Anglesey and North Wales coastline hosts several offshore windfarms to the north-east. Many of the

ID	Viewpoint	Baseline view
		wind turbines are visible in their entirety, below the horizon of open sea.

18.5.3.6 Isle of Man

Preliminary assessment

18.247 Based on the preliminary assessment presented in **Appendix 18.2**, the Isle of Man has been scoped out of the detailed assessment, as there is no potential for significant effects on seascape, landscape and visual receptors arising from the Project. Distance from the windfarm site is the main factor, as the Isle of Man lies outside the SLVIA study area and the windfarm site would lie 63.1km from Clay Head, the closest section of the Manx coast. Theoretical visibility within the ZTV coverage is possible within the eastern parts of the island, including this area around Douglas, and becomes sparse as the land rises into the eastern slopes of the hills around and including Snaefell and South Barrule. North of these hills, ZTV coverage is limited to a small area at the Bride Hills. Met Office visibility data indicates that there are no records of visibility beyond 60km measured from Walney Island.

18.248 The preliminary assessment in **Appendix 18.2** has identified limited potential for effects on seascape and landscape receptors in the Isle of Man due to long distance from the windfarm site, the prevailing visibility conditions, the large scale of the associated seascape and the influence of operational offshore windfarms in the Irish Sea. The Project WTGs would generally not be perceived at all in the prevailing weather conditions at such long range, at distances over 63km from the closest section of the Manx coast, and the Project is assessed as having not significant effects on seascape, landscape and visual receptors on the Isle of Man.

18.6 Assessment of effects

18.6.1 Impact receptors

18.249 The receptors that have potential to experience significant effects for seascape, landscape and visual have been identified in the preliminary assessment in **Appendix 18.2** and summarised in **Section 18.5**.

18.250 The specific receptors identified as requiring detailed assessment due to their potential to experience significant effects are listed in **Table 18.35.** The potential impacts of the Project during construction, operation and maintenance, and decommissioning are assessed for each of these receptors in **Sections 18.6.2, 18.6.3** and **18.6.4** respectively.

Table 18.35 Receptors requiring detailed assessment for seascape, landscape and visual impacts

Receptor group	Receptor	Distance to windfarm site (km)
LDNP		
Landscape Receptors – NCAs (**Figure 18.10**)	NCA 7 West Cumbria Coastal Plain	31.0
Landscape Receptors – County LCTs/LCAs (**Figure 18.11**)	Coastal Sandstone (E)	43.7
Landscape Receptors – Designations (**Figure 18.12**)	LDNP Special Qualities 1: A world class cultural landscape, 7: Mosaic of lakes, tarns, rivers and coast, 13: Opportunities for quiet enjoyment.	43.4
Visual Receptors - Primary transport routes (**Figure 18.13**)	A595	45.8
Visual Receptors - Long distance walking routes (**Figure 18.14**)	Cumbrian Coastal Way	43.3
	England Coast Path Route	43.3

Receptor group	Receptor	Distance to windfarm site (km)
Representative Viewpoints (**Figure 18.5**)	Viewpoint 1 Black Combe (**Figure 18.24**)	49.1
	Viewpoint 24 Silecroft Beach (**Figure 18.47**)	44.6
North-West England		
Seascape Receptors – MCAs (**Figure 18.9**)	MCA 32 Walney Coastal Waters and Duddon Estuary	2.9
	MCA 34 Blackpool Coastal Waters and Ribble Estuary	0
	MCA 38 Irish Sea South (England)	0
Landscape Receptors – NCAs (**Figure 18.10**)	NCA 32 Lancashire and Amounderness Plain	28.8
Landscape Receptors – County LCTs/LCAs (**Figure 18.11**)	Fylde Coast Dunes LCA (19a)	29.0
	Coastal Plain LCA (2c)	31.0
Visual Receptors - Settlements (**Figure 18.13**)	Fleetwood	30.6
	Blackpool	29.1
	Lytham St Anne's	29.5
Visual Receptors - Primary transport routes (**Figure 18.13**)	A584	29.1
Visual Receptors - Long distance walking routes (**Figure 18.14**)	Lancashire Coastal Way	29.1
	Wyre Way	30.5

Receptor group	Receptor	Distance to windfarm site (km)
Representative Viewpoints (**Figure 18.5**)	Viewpoint 2 Haverigg Point (**Figure 18.25**)	42.2
	Viewpoint 3 Ulverston (Hoad Monument) (**Figure 18.26**)	49.9
	Viewpoint 4 High Haume Farm (Dalton-in-Furness) (**Figure 18.27**)	43.3
	Viewpoint 5 Walney Island (Biggar Bank Road) (**Figure 18.28**)	34.0
	Viewpoint 6 South Walney Nature Reserve (**Figure 18.29**)	31.3
	Viewpoint 7 Heysham Head (**Figure 18.30**)	46.2
	Viewpoint 8 Fleetwood (Rossall Point) (**Figure 18.31**)	31.8
	Viewpoint 9 Blackpool (near Tower) (**Figure 18.32**)	29.2
	Viewpoint 10 Lytham St Anne's (**Figure 18.33**)	30.7
Merseyside		
Seascape Receptors – MCAs (**Figure 18.9**)	MCA 34 Blackpool Coastal Waters and Ribble Estuary	0
Landscape Receptors – NCAs (**Figure 18.10**)	NCA 57 Sefton Coast	33.3
Landscape Receptors – County LCTs/LCAs (**Figure 18.11**)	Coastal Dunes LCA (2)	33.1
	Coastal Marshland LCA (4)	33.8
	Dune Backlands (3)	34.1

Receptor group	Receptor	Distance to windfarm site (km)
Visual Receptors - Long distance walking routes (**Figure 18.14**)	Trans Pennine Trail	33.1
Visual Receptors - Settlements (**Figure 18.13**)	Southport	33.3
	Crosby	40.8
Visual Receptors - Primary transport routes (**Figure 18.13**)	A565	34.1
Representative Viewpoints (**Figure 18.5**)	Viewpoint 11 Southport Pier (**Figure 18.34**)	34.4
	Viewpoint 12 Formby Point (**Figure 18.35**)	35.0
	Viewpoint 13 Clieves Hill (**Figure 18.36**)	43.9
	Viewpoint 14 Crosby Beach (**Figure 18.37**)	43.1
	Viewpoint 15 Fort Perch Rock, New Brighton (**Figure 18.38**)	46.5
	Viewpoint 16 Hoylake, Hilbre Point (**Figure 18.39**)	45.7

18.6.2 Potential effects during construction

18.6.2.1 Effects on seascape character

18.251 The construction of the Project has the potential to result in significant effects on the perceived seascape character of MCA 32, MCA 34, and MCA 38, as scoped into the detailed assessment in **Table 18.35**.

18.252 Construction phase effects on seascape character would occur as a result of the construction activities, including the presence of jack-up vessels and/or heavy lift vessels during the construction phase for the installation of foundations, substructures and WTGs/OSP(s); windfarm service vessels and accommodation vessels; and partially constructed offshore elements. These construction phase activities may combine to alter the seascape character of the area within the windfarm site and the perceived character of the wider seascape through the visibility of these construction activities.

18.253 The effects arising as a result of the construction of the Project is assessed as being of the same magnitude and significance on all seascape character receptors as those arising due to their operation and maintenance, as assessed in **Section 18.6.3**, differing primarily as the effects would be short term and temporary during the length of the construction phase. There may also be some variation in appearance of the construction activities, compared to the operational and maintenance phase, mainly due to the appearance of partially constructed offshore WTGs/OSP(s) over the short-term and the influence of construction vessels in the seascape that would not be present during the operation and maintenance phase.

18.6.2.2 Effects on landscape character

18.254 The construction of the Project has the potential to result in significant effects on the perceived character of the LCAs, designations and their special qualities scoped into the detailed assessment in **Table 18.35**.

18.255 Construction phase effects on landscape character would occur as a result of the construction activities, including the presence of jack-up vessels and/or heavy lift vessels during the construction phase for the installation of foundations substructures and WTGs/OSP(s); windfarm service vessels and accommodation vessels; and partially constructed offshore elements. These construction phase activities may combine to alter the perceived character of the wider landscape through the visibility of these construction activities.

18.256 The effects arising as a result of the construction of the Project is assessed as being of the same magnitude and significance on all landscape character receptors as those arising due to their operation and maintenance, as assessed in **Section 18.6.3**, differing primarily as the effects would be short

term and temporary during the length of the construction phase. There may also be some variation in appearance of the construction activities, compared to the operational and maintenance phase, mainly due to the appearance of partially constructed offshore WTGs/OSP(s) over the short-term and the influence of the construction vessels in the seascape that would not be present during the operation and maintenance phase.

18.6.2.3 Effects on views and visual amenity

18.257 The construction of the Project has the potential to result in significant effects on the views and visual amenity of the visual receptors scoped into the detailed assessment in **Table 18.35**.

18.258 Construction phase effects on views and visual amenity would occur as a result of the construction activities, including the presence of jack-up vessels and/or heavy lift vessels during the construction phase for the installation of foundations, substructures and WTGs/OPSs; windfarm service vessels and accommodation vessels; and partially constructed offshore elements. These construction phase activities may combine to alter the views and visual amenity through the visibility of these changes in the seascape.

18.259 The effects arising as a result of the construction of the Project is assessed as being of the same magnitude and significance on all viewpoints and visual receptors as those arising due to their operation and maintenance, as assessed in **Section 18.6.3**, differing primarily as the effects would be short term and temporary during the length of the construction phase. There may also be some variation in appearance of the construction activities, compared to the operational and maintenance phase, mainly due to the appearance of partially constructed offshore WTGs/OSP(s) over the short-term and the influence of the construction vessels visible during the construction phase that would not be present during the operation and maintenance phase.

18.6.3 Potential effects during operation and maintenance

18.6.3.1 Introduction

18.260 Potential impacts during operation and maintenance on seascape, landscape and visual amenity include:

- Impact (daytime) of the Project on seascape character
- Impact of daytime visibility of the Project on landscape character and landscape planning designations
- Impact of daytime visibility of the Project on visual receptors
- Impact of night-time visibility of the Project on visual receptors

18.261 There may be impacts on seascape character through the operation and maintenance of the Project. In addition, impacts may arise as a result of views of the operation and maintenance of the Project from surrounding areas of the seascape, landscape and visual resource. Impacts would result only from above sea elements of the operation and maintenance. Impacts may arise during the day and at night due to operational aviation light markers and activity and safety lighting during maintenance activities of the offshore infrastructure, which may include CAA and marine navigation lighting, which may affect night-time views.

18.262 Effects of the Project on seascape character during the operation and maintenance phase are considered holistically across the seascape of the SLVIA study area in **Section 18.6.3.2**. Landscape and visual effects of the Project is assessed within each of the main geographic 'receptor areas' identified in the baseline conditions (**Section 18.5**), based on the following administrative boundaries within the SLVIA study area: LDNP; North-West England; and Merseyside (**Figure 18.3**).

18.263 Potential significant seascape, landscape and visual effects of the operational Project are contained within these scoped in geographic areas, with the effect of the Project on the landscape and visual receptors and viewpoints within these geographic receptor areas described in **Sections 18.6.3.4** to **18.6.3.6**. To inform this assessment, an assessment of the visual effects arising from the operation and maintenance of the Project on representative viewpoints within the SLVIA study area has been undertaken in detail in **Appendix 18.3** and is summarised in **Table 18.37**.

18.264 No likely significant effects are predicted to arise on seascape, landscape and visual receptors in North Wales and the Isle of Man as assessed in the preliminary assessment in **Appendix 18.2**. These conclusions have been made based on the preliminary assessment, knowledge of the baseline environment, the nature of planned works and the wealth of evidence on the potential for impact from such projects more widely.

18.6.3.2 Effects on Seascape Character

MCAs

18.265 An assessment of the likely significant effects arising from the operation and maintenance of the Project on the seascape character of MCAs (**Figure 18.9**) is set out in **Table 18.36**.

Table 18.36 Assessment of seascape character

Receptor	Sensitivity to change	Magnitude of change and significance of effects
MCA 32 Walney Coastal Waters and Duddon Estuary	**Location and boundaries**: MCA 32 covers the coastal waters to the south-west of Cumbria. The MCA extends from Haverigg Point in Cumbria to the Lune Deep off the Fleetwood coast. It includes the Duddon Estuary, Walney Island, and the shallow waters to the west of Morecambe Bay. The western boundary of the MCA approximately follows the 20m bathymetry contour line, marking a transition zone into the offshore MCA 38: Irish Sea South (England). **Sensitivity**: **Medium** The sensitivity of the MCA to changes associated with the Project is considered to be medium, reflecting that the seascape has medium value and its perceived character has a low susceptibility to changes that would occur as a result of the Project. This is based on the following assessment. ***Value*: *Medium*** Designation: The LDNP and World Heritage Site adjoins the Duddon Estuary, on the northern edge of the MCA. International designations reflect the importance of the intertidal habitats, including sand dunes, vegetated shingle, salt marsh and lagoons supporting a rich birdlife. Offshore, there are important subtidal habitats, protected by the West of Walney Marine Conservation Zone (MCZ) and Shell Flat and Lune Deep Special Area of Conservation (SAC). Aesthetic/scenic qualities*:* There is a marked contrast between natural and man-made elements on the land, coastline and sea, creating a distinct sense of place. Natural inter-tidal sands, flats, channels, islands and coastal habitats contrast with modern man-made interventions that have changed inherent seascape character, including major docks/shipyards at Barrow, military	**Magnitude of change**: **Low** The Project is located outside of MCA 32 within the adjacent Irish Sea and therefore would not result in any direct changes to the pattern of elements with this MCA, but has potential to lead to indirect changes to how it is perceived, with the introduction of further offshore WTGs in the background to the MCA when viewed from parts of the coast. When viewed from the closest parts of the MCA's coastline from Walney Island and the inshore coastal waters of the MCA, the Project would be situated at long distance and behind the baseline influence of operational offshore windfarms (within the regional windfarm grouping formed by Barrow, West of Duddon Sands, Ormonde and Walney Windfarms), such that the additional influence of the Project would be perceived as being subsumed behind existing windfarms, at greater distance and smaller scale further offshore. Other parts of the MCA are visually more contained and less exposed, with limited visibility of the Project from the hinterland of Walney Island, the Pier Channel/Walney Channel and much of the Duddon Estuary where intervening landform and the low-lying nature of the coast and inter-tidal sands restricts views of the Project.

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	bases, urban development and extensive offshore windfarm development. Perceptual qualities: MCA has some remote and isolated qualities, although views to large vessels, dredging activity, gas wells and offshore windfarms become important points of orientation and scale in an otherwise vast and featureless seascape. The offshore seascape hosts four windfarms (Barrow, Ormonde, West of Duddon Sands and Walney), forming prominent moving structures within the seascape in the waters between 7km and 20km from the coast. Cultural associations: The coastline of the MCA has long been settled, with the 14th-century Piel Castle protecting the harbour approach, and large numbers of wrecks in the area. Recreational and community value: Some recreational use/value for walking on the England Coast Path and wildlife watching at Nature Reserves on Walney Island and Duddon Sands. Heritage features are also valued by visitors. Another recreational activity is angling. Rarity: the MCA includes a number of relative rare features, including Walney Island which is England's largest barrier island; intertidal sands and mud flats within Duddon Estuary and channels around Walney Island. ***Susceptibility to change*: *Low*** **Natural** Coastal edge: Walney Island is England's largest barrier island, and protects the major port and shipbuilding centre of Barrow-in-Furness. Significant shoreline protection works line the Duddon Estuary and Barrow area, with the coastal railway line forming an important sea defence.	The Project introduces elements that may partially affect the perceived seascape character of the MCA, increasing the influence of offshore WTGs to the south, however existing OWFs already form a key defining characteristic of the MCA such that its perceived character would be subject to less change as a result of the addition of elements that are substantially characteristic within the existing seascape of the southern Irish Sea. Based on the assessment above, the magnitude of change to the perceived character of MCA 32 resulting from the operation and maintenance of the Project is assessed as **low.** **Significance of effects** When the **low** magnitude of change is combined with the **medium** sensitivity of the receptor, the effect of the Project on the perceived character of MCA 32 is assessed as **not significant (minor)**, direct, long-term, neutral and reversible.

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	Hinterland: Natural systems have been much modified over time; much of the coastal marshland has been drained over the centuries to provide farmland. Major urban area of Barrow-in-Furness sits within the hinterland of Walney Island. Tidal range: The coastline of this MCA includes large areas of intertidal sand and mud flats within Duddon Estuary and around Walney Island, resulting in a distinctive coastal landscape. The MCA extends offshore to the south and west of Walney, including shallow seas generally less than 20m in depth, with the exception of Lune Deep, a glacially-carved channel up to 86m in depth that provides shipping access into Morecambe Bay. **Cultural/social** Use of the sea: Lune Deep is important as a shipping access route through the sand banks and flats into Morecambe Bay. The offshore seascape hosts several windfarms in the waters between 7km and 20km from the coast. A 34km long pipeline from the Morecambe Bay Gas Field, located in MCA 38, supplies the Rampside Gas Terminal to the east of Walney Island. The waters of Duddon Estuary, Walney Channel and Foulney spit support harvested mussel beds, crab and lobster fisheries. Other fisheries include cod, bass and thornback ray netting, and sole and flatfish beam trawling in the Lune Deep. Use of the coast/hinterland: Barrow-in-Furness has been a major ship-building centre since the 19th century. It continues to be a centre for building the UK's nuclear submarine fleet, requiring the Walney Channel to be heavily dredged. Wildlife and heritage are the principal attractions for visitors, with recreational angling also important for tourism.	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	Historic features on coast: A chain of coastal defences dating to WWI and WWII, including pillboxes and observation posts, are reminders of the importance of Barrow's shipyard. **Quality/condition** Intactness: Seascape intact but subject to extensive commercial offshore activities, including hosting four windfarms (Barrow, Ormonde, West of Duddon Sands and Walney). State of repair: N/A. **Aesthetic and perceptual** Scale: Large scale open sea with vast expanse of open sea and skies, becoming small in scale locally within Duddon Estuary and Piel Channel/Walney Channel. Openness and enclosure: Very open away from the coast with limited enclosure, with only the offshore windfarm arrays to the north providing some sense of enclosure in the seascape, becoming more enclosed by surrounding landforms within Duddon Estuary and Piel Channel/Walney Channel. Exposure: Highly exposed open sea, often with poor visibility, becoming less exposed and more contained within the Duddon Estuary and Piel Channel/Walney Channel. Aspect: Due to the position of the windfarm site and orientation of the coastline, there is potential for WTGs in this MCA to be viewed primarily into the sun to the south/south-west from the coast. Generally viewed from low-lying and distant coastline. Seascape pattern and foci: OWFs extend across much of the northern part of the MCA, while the southern portion of MCA has fewer focal points, although Lune Deep provides shipping access route into Morecambe Bay. Tranquillity, wildness and remoteness: Windswept, exposed and remote character, which provides both contrasts to the form of	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	the Project infrastructure, but also a rationale for the wind energy influences. Perceptions of the area are strongly influenced by sea and weather conditions, with some sense of remoteness, however sense of tranquillity and wildness is diminished by the extent of offshore windfarm development. **Visual characteristics** Key views: Views out from the southern extent of the LDNP are dominated by the undeveloped Duddon Estuary which forms a significant component of the LDNPs setting in this locality. Intervisibility and associations: Views out to sea from Black Combe and the Southern Fells into the MCA are a notable characteristic of this part of the LDNP. Views inland have the backdrop of the Lake District's mountains but there are also industrial and modern man-made elements, such offshore windfarms out to sea. Views offshore feature the Isle of Man and the Galloway coast in Scotland. Typical receptors: Receptors include recreational users of the coastline of Walney Island and Duddon Sands, including the England Coast Path and wildlife watchers. Seascape experience: The susceptibility of MCA 32 lies mainly in the exposed views from coastline of Walney Island and the sense of remoteness of the sea, however the receptor is extensively modified and used for commercial offshore activities, including extensive offshore windfarm development, and susceptibility is reduced by the position of the Project at distance outside the MCA and behind these existing offshore windfarms, which means that most developments would be perceived as small and would be visible/perceptible infrequently beyond and in the background to the existing windfarm developed seascape.	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
MCA 34 Blackpool Coastal Waters and Ribble Estuary	**Location and boundaries**: MCA 34 is a shallow, coastal area shelving gently down from the low-lying Lancashire coastal plain. It encompasses the Fylde Coast to the north, terminating at the southern edge of Lune Deep, and the Sefton Coast as far as Formby Point to the south. Between these two coasts the Ribble Estuary, between Lytham St Anne's and Southport, cuts inland to Preston. The northern boundary of the area follows the edge of the Shell Flat on the south side of the Lune Deep, which is within MCA 32: Walney Coastal Waters and Duddon Estuary. **Sensitivity**: **Medium** The sensitivity of the MCA to changes associated with the Project is considered to be medium, reflecting that the seascape has medium value and its perceived character has a medium susceptibility to changes that would occur as a result of the Project. This is based on the following assessment. ***Value*: *Medium*** Designation: This MCA does not fall adjacent to any nationally protected landscapes. The protected dune systems of parts of the Sefton and Formby coastline support important species. Intertidal areas are internationally designated for their importance for migratory wildfowl, wading birds and sea birds. The Ribble Estuary is an NNR. Liverpool Bay Special Protection Area (SPA) includes all of this coast and supports common scoter and red-throated diver. The Fylde MCZ includes extensive areas of subtidal sediment habitats. Aesthetic/scenic qualities: Complex coastal processes, with a high rate of movement of sand and shingle, although sea defences limit this in places. The contrast between natural coastal processes and seascape character together with extensively urbanised coastline with notable regional landmarks, create a distinct sense of place. Aesthetic and scenic qualities	**Magnitude of change: Medium** The Project is located partially within the MCA, therefore has potential to have direct effects on the pattern of elements on its offshore edges, however the majority of the windfarm site is located outside the MCA and within the adjacent MCA 38 Irish Sea South. The Project has potential to lead to indirect changes to how it is perceived, with the introduction of offshore WTGs in the offshore extent and backdrop to the MCA when viewed from parts of the coast. When viewed from the closest parts of the MCA's coastline between Fleetwood, Blackpool and Formby (Sefton) and the inshore coastal waters of the MCA, the Project would be situated at long distance offshore, introducing a separate offshore windfarm influence on the sea skyline to the south of the Walney/West of Duddon Sands windfarm grouping. This is in a new part of the seascape to the east of the Blackpool coastal water/Sefton coast that is currently free of windfarm influence. Other parts of the MCA are visually more contained and less exposed, with limited visibility of the Project from the hinterland and much of the Ribble Estuary where intervening landform and the low-lying nature of the coast and inter-tidal sands restricts views of the Project.

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	are however influenced by the extent of the largely developed coastline of the MCA, its heavy visitor/tourist use and distant influence of offshore windfarms. Perceptual qualities: The seascape is not valued for its wildness, remoteness or tranquillity due to its largely developed coastline, with linear urban coastal seaside towns stretching along most of its length. The Ribble Estuary and parts of the Sefton Coast dunes (such as around Formby Point) have distinctive character, and in places, when screened from urban influences, a sense of remoteness and wildness. In general, any sense of remoteness, wildness and tranquillity is negated by the extent of settlement, coastal tourism related development and high visitor pressure, particularly during the summer months. Cultural associations: At Formby Point, coastal erosion of the foreshore has revealed preserved human, animal and wading bird footprints dating from the Mesolithic Period. Recreational and community value: The MCA has notable recreational value as the focus for visitor activity at the coast and displays traditional 'beach resort' qualities and interest arising from the interaction of the seascape and beaches with development and activities of people at the seafront and nearshore waters. The coastline of the MCA is highly valued by tourist visitors to the seaside, particularly at Blackpool, Lytham St Annes and Southport. Formby Beach is a National Trust site and is valued for recreational access to the beach and dunes, forming a relatively natural pocket of coastal landscape contrasting with the urban seafronts to the north. The Lancashire Coastal Way follows the coastline and is valued as a walking route providing access along the coast. Rarity: The coastline of the MCA is valued for its distinctiveness as a coastal resort at Blackpool including distinctive/unusual	The Project introduces elements that may partially affect the perceived seascape character of the MCA, increasing the influence of offshore WTGs in the central Irish Sea, between the distant regional windfarm groupings to the north and south. The magnitude of change to the perceived character of MCA 34 resulting from the operation and maintenance of the Project is assessed as **medium.** **Significance of effects** When the **medium** magnitude of change is combined with the **medium** sensitivity of the receptor, the effect of the Project on the perceived character of MCA 32 is assessed as **not significant (moderate)**, direct, long-term and reversible. Moderate effects are assessed as not significant on this MCA as they fall within the orange area of the matrix (indicated in orange in **Table 18.8**) and are considered not significant due to the medium sensitivity and medium magnitude of change factors evaluated. The changes do not occur at high magnitude nor on areas of high sensitivity seascape, and the introduction of the Project WTGs would occur as further elements that are already substantially characteristic in the baseline seascape context, in which the existing offshore windfarms in the Irish Sea have a moderating influence to the significance of further

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	landmarks, such as Blackpool Tower, pleasure beach and illuminations at night, which are fundamental to its character. The coastal waters of the MCA are relatively common over a long stretch of coast between Fleetwood in the north, Formby Point in the south and offshore to the 20m bathymetry line that marks a transition to the open waters of the Irish Sea. ***Susceptibility to change**: **Medium*** **Natural** Coastal edge: Wide, sandy beaches, resulting from a combination of shallow waters and a high tidal range, characterise the length of the MCA, but there are distinct differences between the Sefton Coast, which is dominated by sand dunes, and the more urban coastline to the north of the Ribble, centred on Blackpool. Man-made barriers protect most of the coast, and sand bars, salt marsh and dunes also provide a natural defence. Beyond the sandbanks, the Ribble Estuary is a landscape of intertidal salt marshes, pierced by dendritic creeks. Along the Sefton Coast the landscape is dominated by sand dunes, stretching over 17km long. Around Formby and Ainsdale the dunes reach over 20m high, forming dominant features. Hinterland: Fylde Coast in particular is now very urbanised, with much settlement and industrial development e.g. between Fleetwood, Blackpool and Lytham St Anne's, which is almost contiguously urbanised coast/hinterland. Urban and beach-based tourism along the coast is popular, most notably at Blackpool, Lytham St Annes and Southport. Tidal range: Shallow waters and a high tidal range (up to 9.8m at Lytham St Anne's) backed by extensive sandy and muddy/sandy beaches, intertidal sand flats and mudflats.	offshore windfarm development on seascape character.

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	Frequent storm surges, combining with high tides to cause flooding. **Cultural/social** Use of the sea: Lennox oil and gas field is within the MCA (one of five interlinked sites currently operational in Liverpool Bay) reflects the importance of the Irish Sea for energy production. Coastal waters and the Ribble Estuary are important nursery areas and supports commercial fisheries. Nearshore waters are used for seaside recreation. Use of the coast/hinterland: Urban and beach-based tourism along the coast is popular, most notably at Blackpool, Lytham St Anne's and Southport. The coast is also popular for bird watching, with a number of national and local nature reserves providing facilities for visitors. Recreational angling is also an attraction. Historic features on coast: There are a number of prominent landmarks on the developed areas of coast, such as the Listed Blackpool Tower and Pier. Blackpool Tramway runs from Blackpool to Fleetwood on the Fylde Coast and dates back to 1885, one of the oldest electric tramways in the world. **Quality/condition** Intactness: Seascape is intact but is subject to the presence of detractors including developed coast, shipping, coastal/nearshore recreational use of sea and windfarms visible in the setting of the MCA. Some influence from commercial offshore activities, including the regional windfarm groupings to the north (Barrow, Ormonde, West of Duddon Sands and Walney) and south (Burbo Bank, North Hoyle, Gwnt-y Môr), which are visible from the coast in the periphery/backdrop to the MCA.	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	State of repair: Generally well-maintained coast often with groynes and sea walls. Blackpool sea front has been subject to notable improvements in the public realm along the front. There are some neglected urban spaces and evident decline in seaside resorts, and on a busy summer's day there is capacity for the environment to appear neglected by the nature of busy tourism and seafront activity. **Aesthetic and perceptual** Scale: Large scale open sea particularly in areas further from the coast, becoming smaller in scale locally within Ribble Estuary. Openness and enclosure: Very open away from the coast with limited enclosure, with only the distant offshore windfarm arrays to the north and south, and the coastline to the east, providing some sense of enclosure in the seascape. MCA becomes more enclosed within the Ribble Estuary. Exposure: Generally exposed open sea, particularly the areas further from the coast, becoming less exposed nearer to the coast and more contained within the Ribble Estuary. Aspect: Due to the position of the windfarm site and orientation of the coastline, potential for WTGs in this MCA to be viewed into the setting sun to the west in views from the east. Only viewed from low-lying and distant coastline. Seascape pattern and foci: Other than the Lennox oil and gas field, and shipping/vessels, there are relatively few elements within this MCA, therefore, it is generally open seascape with little pattern or foci. Regional windfarm grouping to north and south are visible from the coast in the periphery/backdrop to the MCA. Landmarks are present along the coastal edge, particularly in Blackpool.	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	Tranquillity, wildness and remoteness: The Ribble Estuary and parts of the Sefton Coast dunes (such as around Formby Point) have distinctive character, and in places, when screened from urban influences, a sense of remoteness and wildness. In general, any sense of remoteness, wildness and tranquillity is negated by the extent of settlement, coastal tourism related development and high visitor pressure, particularly during the summer months. Seafront development, piers and Blackpool illuminations add lights, colour and activity at night. **Visual characteristics** Key views: Views seaward from the coastline are frequently simple views of sea and sky, to an unbroken horizon. From the coast there are long views to the mountains of North Wales and the Lake District, and from the Sefton Coast shipping lanes, offshore WTGs and oil and gas infrastructure are visible. Offshore WTGs become increasingly prominent in views moving south along the Sefton coast. The view from the viewing platform at the top of Blackpool Tower is a specific viewpoint that is popular with high numbers of visitors to the tower. Intervisibility and associations: Strong intervisibility and associations between the adjacent coastline low-lying, open coastline and the seascape of the MCA. Typical receptors: Residents of the settlements along the coastal urban areas. The coast is used as an open space for a large number of visitors, both for day trips and holidays, with receptors focused on the seaside and beaches. Lancashire Coastal Way/walkers view the seascape from the coastal edge. Seascape experience: Seascape character is typically experienced from main coastal settlements/seafronts, including crowded beaches (particularly in summer) where focus is on beach activities and tourist attractions (rather than on enjoyment	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	of seascape character). The susceptibility of MCA 34 lies mainly in the potential for changes to the open, simple sea views from coastline, however the receptor is extensively modified, includes distant offshore windfarm influences in its backdrop and the experience of the urban/tourist developed sea front moderates its susceptibility.	
MCA 38 Irish Sea South (England)	**Location and boundaries**: MCA 38 lies in the eastern Irish Sea, between the coasts of England, Wales and the Isle of Man. It lies 15km offshore at its closest point, off Walney Island. Its westward boundaries are defined by the outer boundaries of the North-West Offshore marine plan area. The eastern boundary, adjoining MCA 32: Walney Coastal Waters and Duddon Estuary, MCA 34: Blackpool Coastal Waters and Ribble Estuary, and MCA 35: Inner Liverpool Bay, approximately follows the 20m bathymetry contour line southwards from a point due west of Barrow-in-Furness, representing a gradual transition to inshore waters. The boundary with MCA 37: Irish Sea North (England) follows the main shipping lane running north-west from Morecambe Bay to the Point of Ayre, marking the transition to a less intensively used seascape. **Sensitivity**: **Low** The sensitivity of the MCA to changes associated with the Project is considered to be low, reflecting that the seascape has medium-low value and its perceived character has a low susceptibility to changes that would occur as a result of the Project. This is based on the following assessment. ***Value*: *Medium-low*** Designation: At its closest, this offshore MCA is around 14km from the south-western edge of the LDNP and World Heritage Site. The MCA's value lies mainly in its role as part of the wider, distant seascape setting of the LDNP and coastline of North-	**Magnitude of change**: **Medium** The majority of the windfarm site is located within MCA 38, therefore the Project would result in direct changes to the pattern of elements and characteristics of the part of the MCA seascape that lies within the windfarm site. The operation and maintenance of the Project would result in changes to the perceived character of the seascape character of MCA 38 as perceived by people at sea, and at long distances from the distant fells of the southern LDNP, the low-lying coasts of Barrow, Walney Island and the urbanised coastline of the Lancashire coastal plain, where the maritime character of MCA 38 is part of the associative seascape setting. When viewed from the coastline of Barrow-in-Furness, Walney Island, and the coast and fells of the southern LDNP, the Project would be situated at long distance and behind the baseline influence of existing offshore windfarms (within the regional windfarm grouping formed by Barrow, West of Duddon Sands, Ormonde and Walney Windfarms)

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	West England. Due to the intensity of human activity there is limited nature conservation interest. Aesthetic/scenic qualities: The southern part of the Irish Sea is a busy area, with multiple offshore activities including fishing, main shipping routes, oil and gas extraction and dredging. Offshore windfarms extend across the north-west of the MCA. Perceptual qualities: It is a busy, dynamic area defined by transport movement and the extent of offshore activities, which also influence the night-time character with lighting on the main oil and gas platforms and WTGs across the area. Cultural associations: The Irish Sea is of notable economic and cultural importance to regional trade, shipping and transport, as well as fishing and power generation. Notable historic crossings of the Irish Sea include several invasions from Britain. Recreational and community value: Very limited recreational and community value. Rarity: Although many aspects of its geomorphology, tides, use of the sea and cultural history are unique to the Irish Sea, the character of the seascape itself as a vast expanse of open sea with heavy shipping traffic and extensive offshore activities are common. ***Susceptibility to change*: Low** **Natural** Coastal edge and hinterland: This MCA does not have an adjacent coastline or an adjacent hinterland. Tidal range: Tidal flows are generally quite weak, only becoming slightly stronger along the south-western edge of the MCA. **Cultural/social** Use of the sea: Spawning grounds for commercial fishing are within the MCA. A series of offshore oil and gas platforms also	within the intervening area between the LDNP and the windfarm site. As such, the additional influence of the Project is perceived as being subsumed behind existing windfarms, at greater distance and smaller scale further offshore. When viewed from the low-lying urbanised coastline of the Lancashire coastal plain to the east, the Project would form a separate and distinct WTG array within the central part of the MCA, extending the influence of WTGs to the south of the existing regional windfarm group that occupies most of the northern portion of the MCA. The Project directly affects the MCA and introduces elements that could partially affect the perceived seascape character, increasing the influence of offshore WTGs to the south. However existing offshore windfarms already form a key defining characteristic of the MCA such that its perceived character would be subject to less change as a result of the addition of elements that are substantially characteristic within the existing seascape of the southern Irish Sea. The magnitude of change to the perceived character of MCA 38 resulting from the operation and maintenance of the Project is assessed as **medium.**

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	exist. In the north the Morecambe, Calder and Millom gas fields supply gas via pipelines to Barrow-in-Furness. Hamilton and Douglas fields in the south deliver their gas to Point of Ayr in North Wales, while oil from these fields is transferred to tankers. Dredging for aggregates is undertaken in the shallow sea east of the Isle of Man, and to the south in the vicinity of Douglas oil field. Use of the coast/hinterland and historic features on coast: Due to its position entirely offshore, this MCA does not have an adjacent coastline/hinterland, or historic features on the coast. **Quality/condition** Intactness: The seascape is intact but subject to extensive commercial offshore activities. The northern portion of the MCA is extensively developed by Walney offshore windfarm. State of repair: N/A (located entirely offshore with no adjacent coastline) **Aesthetic and perceptual** Scale: Large scale open sea with vast expanse of open sea and skies. Openness and enclosure: Very open away from the coast with limited enclosure, with only the offshore windfarms to the north providing some sense of enclosure. Exposure: Highly exposed open sea and weather conditions subject to rapid change. Strong tides and the narrow topography can give rise to rough seas. Visibility is often poor, changing quickly to dense fog, even in strong or gale-force winds which can last for several days. Aspect: Due to the position of the Project and orientation of the coastline, there is potential for WTGs in this MCA to be viewed from multiple aspects, including into the sun to the south from	**Significance of effects** When the **medium** magnitude of change is combined with the **low** sensitivity of the receptor, the effect of the Project on the perceived character of MCA 38 is assessed as **not significant (minor)**, direct, long-term and reversible.

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	the coast to the north, into the setting sun to the west in views from the east, and front-lit by the sun in views north from the coast to the south. Only viewed from elevated areas in the southern LDNP fells, otherwise a low-lying and distant coastline. Seascape pattern and foci: Several key shipping routes cross this area, adding to the busy nature of the waters. These routes include the approaches to the major ports. A large number of 'medium use' recreational sailing routes criss-cross the MCA and offshore windfarms extend across the north-west of the MCA. Tranquillity, wildness and remoteness: Perceptions of the area are strongly influenced by sea and weather conditions, with poor visibility evoking a strong sense of remoteness, however sense of tranquillity and wildness is diminished by the extent of offshore activities and marine traffic. Lighting from the offshore platforms and WTGs influences night-time seaward views. **Visual characteristics** Key views: The coast is relatively distant from this MCA, and the nearest areas are low-lying, meaning that there are low levels of intervisibility with the land. Under clear conditions, there is intervisibility with the hills of the LDNP and the Isle of Man. Intervisibility and associations: The offshore area is distant from low-lying coasts and is not widely visible except from the ferry routes which link England with Ireland and the Isle of Man, although it is overlooked in distant views from the Lake District fells. The southern fells of the LDNP are accessible and allow views out the sea, with a relationship with the MCA but at a distance. The MCA is also visible at a distance from low lying coasts of Barrow, Walney Island and the urbanized coastline of the Lancashire coastal plain.	

Receptor	Sensitivity to change	Magnitude of change and significance of effects
	Typical receptors: Walkers in the southern LDNP fells and coast; residents of settlements along the Lancashire coastal plain and visitors to the coast. Seascape experience: The susceptibility of MCA 38 lies mainly in the panoramic views from the southern LDNP fells and the sense of remoteness of the sea. The receptor is however extensively modified and used for commercial offshore activities, including extensive offshore windfarm development, and susceptibility is reduced by the distance of the MCA offshore, which means that most developments would be perceived as small and would be visible/perceptible infrequently.	

18.6.3.3 Effects on representative viewpoints

18.266 An assessment of the visual effects arising from the operation and maintenance of the Project on representative viewpoints within the SLVIA study area has been undertaken and is presented in full in **Appendix 18.3**. The findings of this detailed viewpoint assessment, summarised in **Table 18.37**, have been used to inform the assessment of effects on landscape and visual receptors within each of the main geographic areas of the SLVIA study area, described in turn in **Sections 18.6.3.4** to **18.6.3.6**.

Table 18.37 Viewpoint assessment summary

Viewpoint		Sensitivity	Magnitude of change	Level of effect	Significance
1	Black Combe (**Figure 18.24**)	High	Negligible	Minor	Not Significant, direct, long-term, neutral and reversible.
2	Haverigg Point (**Figure 18.25**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term, neutral and reversible.
3	Ulverston (Hoad Monument) (**Figure 18.26**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term, neutral and reversible.
4	High Haume Farm (Dalton-in-Furness) (**Figure 18.27**)	Medium-high	Low	Moderate /minor	Not Significant, direct, long-term and reversible.
5	Walney Island (Biggar Bank Road) (**Figure 18.28**)	Medium	Low	Minor	Not Significant, direct, long-term and reversible.

Viewpoint		Sensitivity	Magnitude of change	Level of effect	Significance
6	South Walney Nature Reserve (**Figure 18.29**)	Medium	Low	Minor	Not Significant, direct, long-term and reversible.
7	Heysham Head, Chapel Hill The-Barrows (**Figure 18.30**)	Medium-high	Medium-low	Moderate	Not Significant, direct, long-term and reversible.
8	**Fleetwood (Rossall Point) (Figure 18.31)**	**Medium-high**	**Medium**	**Moderate**	**Significant, direct, long-term and reversible.**
9	**Blackpool (near tower) (Figure 18.32)**	**High**	**Medium**	**Major/ moderate**	**Significant, direct, long-term and reversible.**
10	**Lytham St Anne's (Figure 18.33)**	**High**	**Medium**	**Major/ moderate**	**Significant, direct, long-term and reversible.**
11	**Southport Pier (Figure 18.34)**	**Medium-high**	**Medium**	**Moderate**	**Significant, direct, long-term and reversible.**
12	Formby Point (**Figure 18.35**)	Medium-high	Medium-low	Moderate	Not Significant, direct, long-term and reversible.
13	Clieves Hill (**Figure 18.36**)	Medium-high	Medium-low	Moderate	Not Significant, direct, long-term and reversible.
14	Crosby Beach (**Figure 18.37**)	Medium-high	Medium-low	Moderate	Not Significant, direct, long-term and reversible.

Viewpoint		Sensitivity	Magnitude of change	Level of effect	Significance
15	Fort Perch Rock, New Brighton (**Figure 18.38**)	Medium-high	Low	Moderate/ minor	Not Significant, direct, long-term and reversible.
16	Hoylake, Hilbre Point (**Figure 18.39**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term, neutral and reversible.
17	Talacre Beach (Point of Ayr) (**Figure 18.40**)	Medium-high	Low	Moderate/ minor	Not Significant, direct, long-term and reversible.
18	Prestatyn (Nova Centre) (**Figure 18.41**)	Medium-high	Low	Moderate/ minor	Not Significant, direct, long-term, neutral and reversible.
19	Bryn-Ilwyn Viewpoint (Prestatyn) (**Figure 18.42**)	Medium-high	Low	Moderate/ minor	Not Significant, direct, long-term and reversible.
20	Graig Fawr, Clwydian Range (**Figure 18.43**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term and reversible.
21	Rhos Point (**Figure 18.44**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term and reversible.
22	Llandudno Promenade (**Figure 18.45**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term and reversible.

Viewpoint		Sensitivity	Magnitude of change	Level of effect	Significance
23	Great Orme's Head (**Figure 18.46**)	Medium-high	Low	Moderate/ minor	Not Significant, direct, long-term and reversible.
24	Silecroft Beach (**Figure 18.47**)	Medium-high	Negligible	Minor	Not Significant, direct, long-term, neutral and reversible.

18.6.3.4 Effects on LDNP

18.267 The LDNP is located 43.4km to the north of the windfarm site and is shown in **Figure 18.12**. Its current baseline is described in **Section 18.5.3.2**, including its associate seascape setting, formed by the St Bees to Haverigg Coastal Waters MCA (31), its national and local level landscape character, special qualities and representative views from the coastal plain and southern fells.

18.268 The effect of the Project on the seascape, landscape and visual receptors within the LDNP, which were identified in the preliminary assessment as requiring further assessment, are assessed as follows.

Effects on LCTs

Coastal Sandstone LCT (E)

Sensitivity to change: **High**

18.269 The sensitivity of the LCT is considered to be high, reflecting the high value of the landscape and its perceived character and its medium-high susceptibility to changes arising as a result of the Project. The value of the LCT derives principally from the open, low-lying coastal landscape which provides extensive views westwards across the Irish Sea and forms the setting to the imposing High Fell backdrop, to the east. The susceptibility of the LCA to changes associated with the Project, derives from the visual association between the coastal area and the sea, where there is potential for development in the seascape to interrupt open views due to the intervisibility with the sea. There is a reduction in susceptibility due to the number and extent of offshore windfarm development within the associative seascape.

Magnitude of change: **Negligible**

18.270 The magnitude of change to the perceived character of the LCT resulting from the operation and maintenance of the Project is assessed as negligible. The LCT is located at long distance, over 43.7km, from the closest point of the windfarm site with its main orientation to the south-west, overlooking the Irish Sea. The Project would appear beyond the immediate seascape context, in the background to several operational offshore windfarms, within which they would appear to be entirely subsumed. In this context, the Project would not increase the lateral spread of offshore WTGs on the horizon. This change would have most influence on the shoreline, where there is clear visibility of the sea, reducing inland such that beyond approximately 2km from the coastline the influence of the Project would largely be imperceptible. This remains true on higher ground inland of Annaside and the lower slopes Corney Fell despite the related increased visibility of the Project within these areas.

Significance of effect

18.271 **Not significant** (minor), indirect, long-term and reversible on the perceived character of the LDNP coast comprising Coastal Sandstone LCT (E).

Effects on LDNP Special Qualities

18.272 The special qualities of the LDNP are defined in the LDNPP Management Plan 2020-2025 (LDNPP, 2021b) as indicators of what comprises its natural beauty. They have been defined as a result of stakeholder engagement and technical evidence prepared by the LDNPA since designation of the LDNP.

18.273 The LDNP has many special qualities which together define its sense of place and attract people to live and work in the area and visit the LDNP, but it is also a living, working and ever-changing landscape, shaped by its human history.

18.274 The special qualities of the LDNP are identified in **Section 18.5** and the special qualities scoped into the SLVIA are identified and described in **Table 18.16**, as those that may have potential to be significantly affected by the Project.

18.275 An assessment of the magnitude of change and residual effects arising from the operation and maintenance of the Project on the defined special qualities of the LDNP are set out in **Table 18.38**.

18.276 Although there are pockets of the LDNP landscape where the baseline conditions are such that the value of particular features or aesthetic dimensions are reduced, the LDNP is, as a whole, of high value, as recognised through its designation as a National Park. While the inherent sensitivity of the LDNP is high, there is some variation in the susceptibility of the different areas/LCAs within the LDNP to the specific nature of changes associated with the Project, reflected in the assessment of individual LCAs within the LDNP.

For the purpose of the assessment, the special qualities of the LDNP have been considered as being of **high sensitivity** to change.

Table 18.38 Assessment of effects on LDNP special qualities

Special Quality	Magnitude of change and effect on LDNP special quality
1. A world class cultural landscape	The operation and maintenance of the Project would result in zero change and no effect on the "extraordinary beauty and harmony" of the LDNP, as it would not result in any direct or physical changes to its landscape, or the diverse landscape which has arisen from a fusion of distinctive communal farming practices and picturesque elements dating from the 18th and 19th centuries. The Project would also result in zero change and no effect on the coast, lakes, distinctive farmland, fell, woodland, industrial activity and settlement of the LDNP's thirteen individually distinct valleys, expressed in this special quality. The LDNP's landscape reflects a unique fusion of a distinctive communal farming system which has been present for at least a millennium, that includes common land, hefting, stone walled field and the field system; and a 'designed landscape' with picturesque improvements dating from the 18th and 19th centuries. This special quality recognises the "extraordinary beauty and harmony diversity" of this fusion; and its inspirational qualities for both globally recognised writers and artists; and three significant conservation initiatives: the UK National Trust; the UK National Park movement; and the idea of Protected Landscapes as developed by the International Union for Conservation of Nature (IUCN), which underpins the concept of the World Heritage Cultural Landscape. The operation and maintenance of the Project only has potential to result in changes to views from the section of coastline within the LDNP and the south-western tip of the low fells which overlooks it. Within this restricted area, the Project would introduce a new, distant offshore windfarm element, within the associated seascape that is already characterised by a number of offshore windfarms. The number and extent of these existing windfarms is such that the introduction of the Project would not notably affect the diversity of the landscape when experienced from the coast between Drigg and Silecroft and the low fells backing it, particularly evident at Black Combe. The effect of the Project on the perception of the associated seascape would be restricted to the coast of the LDNP and the low fells backing the coast, including Black Combe, where the perception of the diverse landscape of the LDNP, which is recognised in this special quality, would undergo little change. The operation and maintenance of the Project would not result in any direct changes to the landscape elements and features of the LDNP, that underpins its special qualities and creates its diversity of landscapes. Although the physical features of the LDNP's diverse landscapes would not be changed, there would be some change to specific aesthetic/perceptual aspects of the landscape character and views offshore, within a limited area of the LDNP. The operation and maintenance of the Project would result in zero change and no effect on the larger part of the LDNP, where it would not be visible and would have no influence on the diverse character of the LDNP, or its inspiration qualities for artists and writers or conservation. This reflects the high relief of the Lake District's

Special Quality	Magnitude of change and effect on LDNP special quality
	topography and the distance from the windfarm site which, for most of the LDNP, is over 60km away and outside the SLVIA study area. The magnitude of change resulting from the operation and maintenance of the Project is assessed as **negligible,** and its effect on Special Quality 1 is therefore **not significant** (minor). This reflects the distant appearance of the Project, on the horizon beyond a seascape hosting several offshore farms that is only appreciable from the coastline within the LDNP and the western face of backing fells, notably Black Combe. Remaining areas of the LDNP which would have no visibility of the Project would undergo zero change with no effect on Special Quality 1.
7. Mosaic of lakes, tarns, rivers and coast	The operation and maintenance of the Project would not result in any direct changes to the high quality scenery and natural resource of the LDNP or the geology that underpins its special qualities and creates its diversity of landscapes. There would also be no direct changes to the LDNP's becks, rivers, lakes, tarns and coast that comprise its richly varied landscapes. The physical features of the LDNP would not be changed, but changes to specific aesthetic/perceptual aspects of landscape character and views offshore would arise from the Project. In terms of Special Quality 7, the Project would result in changes to the seascape setting associated with the LDNP. The operation and maintenance of the Project would perceptibly extend the existing influence of offshore wind energy development that already forms part of the perceived character within seas views from the LDNP, albeit appearing on the horizon behind and visually assimilated into this existing development. Within this context, the introduction of the Project would not be sufficient to notably detract from the high-quality scenery and natural resource of the LDNP, or the "impressive views" from it. The magnitude of change resulting from the operation and maintenance of the Project is assessed as negligible and its effect on Special Quality 7, not significant (minor). The effects of the Project on this special quality relate to its visibility on the seascape horizon from a relatively small geographic area. Views from many areas of the LDNP, including the larger part of its high fells and intervening valleys, being further inland and having less visual connection with the Irish Sea, would observe no change with the diversity of their landscapes remaining unaffected.
13. Opportunities for quiet enjoyment	Tranquillity is a "state of calm and quietude associated with peace, considered to be a significant asset of landscape" (Landscape Institute, 2013). The CPRE Tranquillity Report 2008 is useful in defining the terms "seeing, tranquillity" (i.e. visual) and "hearing, tranquillity" (i.e. audible), both of which contribute to the experience of tranquillity. Changes arising from the Project relate to the visual aspects of tranquillity, i.e. what is seen by people in the landscape and whether its visible elements detract from the perception of such "seen" tranquillity. With respect to the audible aspect of tranquillity, the Project would result in zero change and no

Special Quality	Magnitude of change and effect on LDNP special quality
	effect on the tranquillity that people gain from the quiet experienced in the landscape of the LDNP, due to the distance from shore and lack of noise impacts at this range. In many areas of the LDNP, the landscape lacks intrusive development and includes relatively 'unspoilt places'. Some areas are more tranquil than others, dependent on a number of influences. Areas of relative tranquillity are mapped on CPRE's Tranquillity Map, 2007. This reveals that the least tranquil areas of the LDNP lie around settlements, such as Keswick and Ambleside, and connecting transport corridors Upland Valley (LCT H) and Lowland Valley (LCT M). The most tranquil areas of the LDNP are the Rugged/Craggy Volcanic High Fells (LCT F) and the Low Fells (LCT K), the tranquillity reducing towards the LDNP's boundaries. Towards the south-west, the low level of settlement along the coast allows a less abrupt decrease in tranquillity within the High Fell Fringe (LCT J), Rugged Angular Slate High Fell (LCT G) and Coastal Sandstone (LCT E) (Figure 18.11). These areas have a greater amount of positive (visual) tranquillity factors and often relate to the perception of natural landscapes, such as 'natural' vegetation cover, wide open spaces, perceived wildness/remoteness, trees/woodland, streams/rivers/lakes, views to the sea and the stars at night. The Project would not affect many of these tranquillity factors but would only potentially affect other tranquillity factors relating to wide open spaces, perceptions of remoteness/wildness and impressive open views. Within the SLVIA study area, ZTV coverage is limited to the south-western tip of the LDNP, including its entire coastal section. This is mainly restricted to the coastal edge, within Coastal Sandstone (LCT E); and the seaward faces of hills within the High Fell Fringe (LCT J), Rugged Angular Slate High Fell (LCT G) and Rugged/Craggy Volcanic High Fells (LCT F). Within these areas, visibility of the Project within the associated seascape context would not notably erode the current levels of tranquillity and associated opportunities for quiet enjoyment, which is evident in representative viewpoints at Black Combe (Viewpoint 1) (Figure 18.24) and Silecroft Beach (Viewpoint 24) (Figure 18.47). In these coastal areas, the seascape setting and extensive sea views contribute more to the experience of relative tranquillity, particularly in good weather conditions and during calm seas. The existing seascape includes existing offshore windfarm development (Walney/Extension, Ormonde, West of Duddon Sands and Barrow) such that changes in tranquillity have to be measured in the context of this existing windfarm influence. The Project would extend the level of windfarm developments in the associated seascape, but as they would be visible in the distance on the horizon, they would be visually assimilated into the more extensive windfarms closer to the coast. The associated increase in visual movement would perceptibly increase, but within this context, would not be sufficient to affect the tranquillity of the coastal parts of the LDNP. Otherwise, the appearance of the Project relates rationally to the exposure of the LDNP coastline to the wind; and to the existing windfarm elements present in the seascape.

Special Quality	Magnitude of change and effect on LDNP special quality
	Special Quality 13 would undergo a negligible magnitude of change that is not significant (minor) in effect, but this would be limited to coastal areas with visibility of the Project. Night-time lighting of the Project would introduce further lighting in the relatively dark night skies. These would be viewed at long distance offshore, in the context of existing wind turbine lighting from parts of the LDNP and other lighting of cardinal buoys and vessels in the waters and result in negligible change and not significant (minor) effect to the tranquillity experienced within the LDNP coastline.

Effects on views and viewpoints

18.277 An assessment of the effects of the Project on representative viewpoints within the LDNP is undertaken within **Appendix 18.3** from Viewpoint 1 Black Combe (**Figure 18.24**) and Viewpoint 24 Silecroft beach (**Figure 18.47**). The following assessment provides a summary of these effects on representative views from the LDNP and provides assessment of representative visual receptors (such as settlements, transport routes and recreational routes) that were identified in the preliminary assessment as requiring further assessment.

Sensitivity to change: **Medium-high**

18.278 The visual amenity of the LDNP is of high value, as recognised by its designation as a National Park and World Heritage Site. This reflects the area's natural beauty, distinctiveness and unique combination of LCTs, features and elements. Views from the LDNP have high scenic qualities relating to the content and composition of the visible landscape, particularly the open Irish sea and the near-wild Cumbrian coast.

18.279 Susceptibility to the Project is medium-high, reflecting the quality of the landscape in view. The landscape of the LDNP is relatively lowly developed and fragile while the associative seascape is more robust, due to the number and extent of offshore windfarms within it. The coastline is very open and large scale, with smaller settlements having little visual presence. In comparison, offshore windfarm development is a notable influence on the sea horizon. Distance from the coast means these have little influence on the wild, scenic and tranquil qualities of the LDNP despite the close association of the south-western part of the LDNP and the Irish Sea.

Magnitude of change: **Low**

18.280 Changes to views from the LDNP arising from operation and maintenance of the Project would be low magnitude. The Project would lie over 43.4km from the nearest part of the LDNP, appearing in the far distance on the periphery of the associated seascape of the LDNP coastline. Several existing offshore windfarms within this seascape would appear to visually assimilate the Project behind. The lateral extent of such development would not appear to increase.

18.281 ZTV coverage is restricted to the shoreline and the western slopes of the gently undulating area behind, characterised as Coastal Sandstone LCT €; and the seawards faces of the western fells, characterised as High Fell Fringe LCT (J) and Rugged/Angular Slate High Fell LCT (G). The Project would be visible from much of the area due to its subtle gradient up to the fells. Landscape elements within the prevailing farmland, such as hedgerow, pockets of semi-natural woodland and settlement comprising dispersed farmsteads, hamlets and villages, such as Ravenglass and Silecroft (Viewpoint 24), would intermittently screen the Project.

18.282 The ZTV is more fragmented across the western slopes of Black Combe (Viewpoint 1) and Corney Fell, where more expansive views across the Irish Sea would take in the Project. Despite the perspective of the view from these elevated areas, the Project would remain peripheral to the associative seascape, albeit more distinct on the horizon.

Significance of effect:

18.283 Based on the combination of the high sensitivity of the receptors at Black Combe (Viewpoint 1) and medium-high sensitivity of the receptors at Silecroft Beach (Viewpoint 24) and negligible magnitude of change, the significance of effect arising from the Project on views experienced from Viewpoint 1 Black Combe and Viewpoint 24 Silecroft Beach within the LDNP is assessed as **not significant** (minor), direct, long-term and reversible.

Effects on visual receptors – primary transport routes

A595

Sensitivity to change: **Medium**

Road users are of medium sensitivity to the Project, due to the transient and incidental nature of their views, and the intermittent screening by intervening landscape features, which reduces their susceptibility to low. The sections of the road with most potential for significant effects extend between Drigg and Hallthwaites. Southbound receptors from Drigg would be more susceptible to the Project as this section lies on the highest part of the coastal plain and roadside vegetation is less evident. Receptors on both sections would be most susceptible as they approach the junction, being the road's closest point to the windfarm site.

Magnitude of change: **Low**

18.284 Changes to views from the A595 arising from operation and maintenance of the Project would be of low magnitude. The Project would lie over 45km from the nearest section of the road, appearing in the far distance on the periphery of the seascape adjoining the near-wild coastline. The Project would not increase the lateral extent of offshore windfarm development as existing offshore windfarms within the seascape would visually assimilate the Project behind. While ZTV coverage is consistent within the sections noted above, it fragments towards Bootle and cuts off east of Whicham. The Project would be perceptible but would not notably change the views seen by road users on the A595.

Significance of effect

18.285 Based on the combination of the medium sensitivity of receptors and the low magnitude of change to the views, the significance of effect arising as a result

of the Project on views experienced from the A595 is assessed as **not significant** (minor), direct, long-term and reversible.

Effects on visual receptors – recreational routes

Cumbrian Coastal Way/England Coast Path Route

Sensitivity to change: **Medium-high**

18.286 As the Cumbrian Coastal Way and England Coast Path Route follow the same route through the LDNP, they are considered concurrently in the assessment of visual effects arising from the operation and maintenance of the Project. This is informed by the Blade tip ZTV (**Figure 18.14**) and the Viewpoint Assessment (**Appendix 18.3**).

18.287 The sensitivity to change of walkers on the Cumbrian Coastal Way/England Coast Path Route is considered to vary along the section of the route from the northern boundary of the LDNP, at Drigg, to Selker Bay. Depending on the landscape context, factors including the transience, duration and changeability of views from the route would be of moderate susceptibility in this section. Between Selker Bay and the Southern boundary of the LDNP, at Silecroft, walkers have a more consistent experience due to the straightness of the coastline and its south-westerly aspect. As the Cumbrian Coastal Way/England Coast Path Route closely follows the shoreline, walkers on it have a high sensitivity to the Project due to the exposure of this coastal section of the route to changes in sea views.

Magnitude of change: **Negligible**

18.288 During operation and maintenance of the Project, the magnitude of change to views from the Cumbrian Coastal Way/England Coast Path Route would be negligible. All of the Project would lie in the far distance, in the background of the immediate seascape context and several operational offshore windfarms within that extend across much of the skyline and beyond the horizon, would appear to subsume them entirely. Due to the long range of the views from the route and the large scale of the seascape in view, the proposed WTGs would appear moderate to small in vertical height/apparent scale. These would be similar form to and appearance with existing WTGs within existing operational windfarms but would not extend the part of the horizon occupied by offshore WTGs. The Project would be continually visible for southbound receptors due to consistent nature of the coast-hugging route. Northbound receptors would observe less change as the windfarm site would lie behind them for the entire section of the route within the LDNP.

Significance of effect

18.289 Based on the combination of the medium-high sensitivity or receptors and the negligible magnitude of change to the views, the significance of effect arising as a result of the Project on views experienced from the Cumbrian Coastal

Way and England Coast Path is assessed as **not significant** (minor), direct, long-term and reversible.

18.6.3.5 Effects on North-West England

18.290 The North-West England geographic area of the SLVIA study area is shown in **Figure 18.4** and includes areas with an associative seascape setting within Cumbria (outside the LDNP) and Lancashire. This includes Barrow-in-Furness, Copeland and South Lakeland districts of Cumbria outside the LDNP; Fylde, Lancaster, West Lancashire and Wyre districts of Lancashire; and Blackpool.

18.291 The region's current baseline seascape, landscape and visual amenity is described in **Section 18.5.3.3**, including its associated seascape setting, formed by Walney Coastal Waters and Duddon Estuary (MCA 32), Morecambe Bay (MCA 33) and the Blackpool Coastal Waters and Ribble Estuary (MCA 34), its national and local level landscape character and representative views. The effects of the Project on the seascape, landscape and visual receptors within North-West England, which were identified in the preliminary assessment as requiring further assessment, are assessed as follows.

Effects on LCTs

Coastal Margins LCT (2) - Coastal Plain LCA (2c)

Sensitivity to change: **Medium-high**

18.292 The sensitivity of the LCT to the Project is considered to be medium-high, reflecting the medium value of the landscape and its perceived character, and its medium-high susceptibility to changes arising as a result of the Project. The value of the LCT derives principally from the open, low-lying coastal nature which provides extensive views across the Irish Sea. The LCT characterises much of the Cumbrian coastline outside the LDNP, including the banks of the Duddon and Cartmel estuaries, and Walney Island. The LCT lies between approximately 30 to 50km from the closest point of the windfarm site. While the estuaries are more influenced by the landscape of the opposite bank and the coastline of Morecambe Bay, at the Cartmel Estuary, the south-westerly aspect of Walney Island is more susceptible to change within the associated seascape. The susceptibility of the LCT to changes associated with the Project derives from the visual association between the coastal area and the sea, where there is potential for development in the seascape to interrupt open views due to the intervisibility with the sea. Existing offshore windfarm development within the Irish Sea, at the Barrow and West of Duddon Sands OWFs to the north, has a limited influence on this section coast and resultantly, there is a reduction in susceptibility.

Magnitude of Change: **Low**

18.293 The magnitude of change to the perceived character of the LCT resulting from the operation and maintenance of the Project is assessed as low. The coastline of Walney Island represents the area of the LCT nearest to the windfarm site and this area would undergo the most change arising from the Project. These will be clearly seen in the setting of the LCT and will exert an influence on its character. From the coast of Walney Island, the Project will appear on the sea horizon beyond the immediate seascape context, as shown in Viewpoint 6 South Walney Nature Reserve (**Figure 18.29**). The Project will appear within and be visually assimilated into the context of existing offshore windfarms which intervene between the coastline and the windfarm site. From further north along the coast, due to the dispersal of the existing windfarms, the Project infrastructure would appear to link the existing windfarms. As such, while the Project would only increase the existing number of offshore WTGs, they would noticeably reduce the level of open sea visible from the LCT.

Significance of effect

18.294 Based on the combination of the medium-high sensitivity of the receptor and the low magnitude of change, the significance of effect arising from the Project on the perceived character of the Coastal Margins LCT (2) - Coastal Plain LCA (2c) is assessed as **not significant** (moderate/minor), indirect, long-term and reversible.

Coastal Dunes LCT (19) - Fylde Coast Dunes LCA (19a)

Sensitivity to change: **Medium-high**

18.295 The sensitivity of the LCT to the Project operation and maintenance is considered to be medium-high, reflecting the medium value of the landscape and its perceived character, and its medium-high susceptibility to changes arising as a result of the Project. The value of the LCT derives principally from the relative rarity of this LCT along the predominantly urban coastline; and also its open, low-lying coastal nature which provides extensive views across the Irish Sea while forming the setting to the Urban landscape types (Industrial Age and Suburban) backing the LCT. The susceptibility of the LCT to changes associated with the Project derives from the visual association between the coastal area and the sea, where there is potential for development in the seascape to interrupt open views due to the intervisibility with the sea. Existing OWF development within the Irish Sea, at the Barrow and West of Duddon Sands offshore windfarms is a distant presence to the north-west, having some limited influence on this section coast, particularly to the north near Fleetwood, while offshore views from areas of the LCT to the south near Lytham St Annes are also influenced by the distant offshore windfarms within Liverpool Bay.

Magnitude of Change: **Low**

18.296 The magnitude of change to the perceived character of the LCT resulting from the operation and maintenance of the Project is assessed as low. The LCT occurs in isolated areas located at Rossall Point and Crusader Bank (between Blackpool and Lytham St Anne's), lying between approximately 28 to 32km of the closest point of the windfarm site. This section of the Fylde coastline has a westerly aspect that overlooks the Irish Sea. From both Rossall Point (Viewpoint 8) (**Figure 18.31**) and Lytham St Anne's (Viewpoint 10) (**Figure 18.33**) the Project would appear isolated on the sea horizon beyond the immediate seascape context. While existing offshore windfarms are visible to the north, off the Cumbrian coast, their position to the north-west and the intervening distance means the Project would appear as a new introduction within the LCT's associative seascape to the south of these existing OWFs.

Significance of effect

18.297 Based on the combination of the medium-high sensitivity of the receptor and the low magnitude of change, the significance of effect arising from the Project on the perceived character of the Coastal Dunes LCT (19) - Fylde Coast Dunes LCA (19a) is assessed as **not significant** (moderate/minor), indirect, long-term and reversible.

Effects on views and viewpoints

18.298 An assessment of the effects of Project on representative viewpoints within the north-west England region of the SLVIA study area is undertaken within **Appendix 18.3** from viewpoints 2 – 10, between Haverigg Point and Lytham St Anne's. The following assessment provides a summary of these effects on representative views from north-west England and provides assessment of representative visual receptors (such as settlements, transport routes and recreational routes) that were identified in the preliminary assessment as requiring further assessment.

Sensitivity to change: **Medium to high**

18.299 The sensitivity to changes associated with the Project of the receptors at representative viewpoints from the coastline of north-west England in the SLVIA study area is assessed as ranging between medium to high. Sensitivity to change varies according to the value of the views and the varying susceptibility to changes associated with the Project, depending on the activity and focus of the receptors.

Value: **Medium to high**

18.300 Areas designated at a national level for their landscape/scenic value along the coastline of north-west England (outside of the LDNP) are limited to the Arnside and Silverdale AONB at the mouth of the River Kent. Beyond this, there are areas of conservation value along the coastline including the Ribble

Estuary NNR, Liverpool Bay SPA and parts of the coastline adjoin Sites of Special Scientific Interest (SSSIs) covering intertidal areas and the coastal landscape, such as Duddon Estuary, Morecambe Bay, Lune Estuary and Wyre Estuary. The qualities tend to increase the value of views experienced from pockets of more naturalised coast and areas where the aesthetic/scenic qualities derived from complex coastal processes are most evident around Morecambe Bay and the Ribble Estuary.

18.301 The extensively urbanised coastline in between includes notable regional landmarks, such as Blackpool Tower, catering to heavy visitor/tourist use that creates a distinct sense of place. Combined with the influence of existing offshore windfarms, the character of the coastline is largely developed with fewer aesthetic/scenic qualities despite smaller, more natural areas along the coast. While these areas are valued for their wildness, remoteness or tranquillity, the predominant perception is of an active, busy coastline, particularly during the summer months when coastal tourism and visitor numbers are most high, particularly between Fleetwood, Blackpool and Lytham St Annes. The linear seaside towns of Blackpool and Lytham St Anne's have notable recreational value that depends in part on the sea views available from the west of the Fylde peninsula. Blackpool's tower, pleasure beach and illuminations at night, have a unique appeal within the country.

18.302 The value of views experienced from representative viewpoints 2 – 10 between Haverigg Point and Lytham St Anne's along the north-west England coastline is assessed in **Appendix 18.3** and varies between medium to high value, depending on the recognition of value attached to each view through planning designations and indicators of value placed by references, visitors and facilities for their enjoyment. This assessment of value is set out for each viewpoint in **Appendix 18.3**.

Susceptibility: **Medium to medium-high**

18.303 The susceptibility of receptors experiencing views from the coastline of north-west England within the SLVIA study area varies according to the occupation or activity of people experiencing the view at these particular locations, the extent to which their attention or interest may be focused on views and the visual amenity they experience at particular locations. Receptors include residents, visitors and recreational users of the coast and beaches, in which susceptible lies in the potential for changes to the open, simple sea views that they experience from coastline. Existing offshore windfarms are prominent in sea views off the coast of Barrow-in-Furness and Walney Island; but are also visible in views along the coastline of Wyre District, Blackpool and Fylde. Oil and gas infrastructure are also visible within the seaward views from the coastline. Views from the coastline extend out to a horizon of sea, are open and simple, influenced most by the sea and sky, but there are also long views north, to the Lake District, and south, to the mountains of North Wales.

18.304 Views of the seascape provide a setting to coastal resorts, such as Blackpool and Lytham St Anne's, their seafronts and associated beaches. Susceptibility to change within the sea views is reduced by existing offshore windfarms within the backdrop; artificial tourist attractions along the sea front; the predominantly urban character of the coastline; and the focus on beach activities and tourist attractions for visitors and recreational users. The density and extent of residential development along the Fylde coast means there are a high number of receptors with prolonged exposure to the Project. A large number of visitors, both for day trips and holidays, have a shorter, temporary susceptibility to changes in sea views. This includes visitors to Blackpool and Lytham St Anne's, with Blackpool Tower a specific viewpoint that is popular with high numbers of visitors, as well walkers using the Lancashire Coastal Way.

18.305 The susceptibility of views experienced from representative Viewpoints 2 – 10 between Haverigg Point and Lytham St Anne's along the north-west England coastline is assessed in **Appendix 18.3** and varies between medium to medium-high susceptibility, depending on the activity and attention of people and the visual amenity they experience at particular locations. This assessment of susceptibility to change is set out for each viewpoint in **Appendix 18.3**.

Magnitude of change: **Medium to Negligible**

18.306 The Project would be located at long distance, over 29km from the closest part of the coastline of north-west England within the SLVIA study area, with potential to be visible in long range views during period of very good and excellent visibility. The assessment of magnitude of change is set out for each representative viewpoint from the north-west England coastline in **Appendix 18.3**.

18.307 The magnitude of change to representative views from Barrow-in-Furness and Walney Island (Viewpoint 2 – 6) arising from the Project is assessed as either negligible or low. This is due to its long distance offshore and the position of the Project WTGs appearing in the background to existing operational offshore windfarms, behind which they are entirely subsumed. The Project would not extend the field of view occupied by existing offshore WTGs in these views and would introduce elements that are already substantially characteristic in the receiving views, with a similar form and scale behind the existing WTGs. The magnitude of change increases slightly moving south to Heysham Head (Viewpoint 7) to medium-low, where the Project begins to appear as a separate feature in the sea views while still being located at very long-range over 46km from coast at Heysham Head.

18.308 The magnitude of change to representative views from the Wyre, Blackpool and Fylde coastline (Viewpoints 8, 9 and 10) arising from the Project is assessed as increasing to medium, along the sea fronts of Fleetwood, Cleveleys, Blackpool and Lytham St Anne's; and in the open areas separating these settlements. The Project would still be located at long distance in views from this coastline (over 29km), however it is likely to introduce a separate OWF influence on the sea skyline in a new part of the view to the south of the existing offshore windfarm grouping (West of Duddon Sands and Walney), in a part of the view that is currently free of windfarm influence. The Project would introduce elements that are already a feature in the existing sea views, however the height of the Project WTGs would appear larger in apparent scale in views from this coastline, albeit, on the horizon to a large scale, open with a relatively simple seascape context.

18.309 Remaining areas of the settlements along the Wyre, Blackpool and Fylde coast that are set-back further inland would experience lower levels of change than that experienced at the coast due to the intervening urban area that limit visibility of the Project.

18.310 Within Fleetwood, these views would be restricted to the beach, promenade, Rossall Point, Fleetwood Golf Club course and the adjoining properties within the Larkholme area. The Project would be visible from the western end of larger roads running loosely east-west and aligning with the windfarm site. The density of urban form and the aspect of the Morecambe Bay coastline means remaining areas of Fleetwood have little visibility of the Irish Sea and low potential visibility of the Project.

18.311 South of Fleetwood, views from open farmland would also undergo a medium magnitude of change, but across a larger area, due to the lack of screening by urban form. Further south, visibility of the Project is restricted to the beaches, promenades and sea fronts of the towns of Cleveleys, Blackpool and Lytham St Anne's. The density of urban form and topography restrict visibility of the Project and limit the magnitude of change experienced from the remaining areas of these towns. Open areas between Blackpool and Lytham St Anne's are backed by tall dunes backing the beach, which would screen views of the Project from the western side of this area, including the St Anne's Old Links Golf Club course.

Significance of effect

18.312 The significance of effect of the Project is set out for each representative viewpoint from the north-west England coastline in **Appendix 18.3**.

The significance of effect of the Project on representative views from Barrow-in-Furness and Walney Island (Viewpoint 2 – 6) arising from the Project is assessed as **not significant** (minor) due to the negligible or low levels of

change that occur to the baseline views, in which existing offshore windfarms are substantially characteristic in the intervening seascape.

18.313 The significance of effect increases slightly moving south to Heysham Head (Viewpoint 7) but remains **not significant** (moderate), due to the Project being located at very long-range over 46km from the coast at Heysham Head.

18.314 Based on the combination of the high sensitivity of the receptors and medium magnitude of change, the significance of effect arising from the Project on views experienced in representative views from the seafronts of coastal settlements at Blackpool (Viewpoint 9) and Lytham St Anne's (Viewpoint 10) are assessed as **significant** (major/moderate). This is due to the lesser influence of windfarms in the baseline, the higher sensitivity of these particular viewpoints and the introduction of the Project as a separate offshore windfarm influence in a new part of the view and at larger apparent scale, albeit remaining at long distance (over 29km). The visual effect of the Project is assessed as dropping to **not significant** (moderate) from Fleetwood (Viewpoint 8), where the sensitivity of the viewpoint is slightly lower, the distance of the Project greater and influence of existing windfarms more prominent. These effects would be direct, long-term and reversible.

Effects on visual receptors – settlements

Fleetwood

18.315 The assessment of effects on visual receptors within Fleetwood is informed by the assessment of Viewpoint 8 Fleetwood, Rossall Point (**Figure 18.31**) within **Appendix 18.3.**

Sensitivity to change: **Medium-high**

18.316 Sensitivity within Fleetwood is considered medium-high, due to the high value placed on sea views by recreational receptors using the beach and promenade, and residential receptors; and their medium susceptibility to the Project, which is reduced by the surrounding urban development and the influence of existing OWFs within the Irish Sea off the Cumbrian coast (Barrow, West of Duddon Sands, Walney and Ormonde) which are notable elements in views from the coast.

18.317 The coastal town of Fleetwood lies on the north-west corner of the Fylde peninsula, between the River Wyre and the Irish Sea, and adjoining Morecambe Bay to the north. Much of the town is slightly set back from the coast behind open space along the coast between the Outer Promenade and The Esplanade, to the north, and the Sea Wall and Marine Parade/Fairway, to the south. The town is set further back at Rossall Point, behind Fleetwood Golf Club course. From the Docks, the A587 runs north-south through the town, which comprises extensive areas of residential development. While the ZTV (**Figure 18.5**) indicates potential visibility of the Project from much of the

town, urban form restricts sea views to those from open space near the coast, the seaward boundary of the town and higher buildings within it. The foreground context of the town, the port and distant offshore windfarm development within the Barrow/Walney/West of Duddon Sands windfarm grouping reduces receptor susceptibility to the Project.

Magnitude of Change: **Medium to Negligible**

18.318 The magnitude of change to views from Fleetwood would be medium along the coastal edge, and negligible from the larger part of town behind. Properties adjoining the town's northern and western boundary have potential for views of the Project and those at the north-west corner, being closest to the windfarm site, have greater potential visibility of them. Recreational users of the beach, promenade and seafront including the golf course would have direct views to the Project. The sea wall, being embanked, would screen the Project from the ground floor of seafront properties within the Larkholme area. The density of urban form and the aspect of the Morecambe Bay coastline means remaining areas of the town have little visibility of the Irish Sea and low potential visibility of the Project.

Significance of effect

18.319 Based on the combination of the medium-high sensitivity of the receptors and medium magnitude of change, the significance of effect arising from the Project on views experienced from the beaches, promenade and seafront properties of Fleetwood is assessed as **significant** (moderate), with the effect reducing to **not significant** (minor) within the settlement away from the seafront. These effects would be direct, long-term and reversible.

18.320 Views from the coastal areas of Fleetwood as assessed as having a slightly lower sensitivity to change than the settlements to the south (such as Blackpool and Lytham St Anne's) because WTGs are already substantially characteristic in the baseline views from Fleetwood, in which the existing offshore windfarms in the Irish Sea (Barrow/West of Duddon Sands/Walney and Ormonde) have a moderating influence to changes arising from further OWF development in the views from the coastal areas of Fleetwood. The changes arising do not occur at high magnitude due the distance of the Project offshore, with the effects considered to be around the threshold of significance, however taking a precautionary approach are assessed as significant on balance, only from the coastal areas of Fleetwood.

Blackpool

18.321 The assessment of effects on visual receptors within Blackpool is informed by the assessment of Viewpoint 9 Blackpool (near Tower) (**Figure 18.32**) within **Appendix 18.3.**

Sensitivity to change: **High**

18.322 Sensitivity within Blackpool is considered high, due to the high value placed on sea views by recreational receptors using the beach, seafront, associated tourist attractions and facilities, and residential receptors; and their medium susceptibility to the Project, which is reduced by the surrounding urban development and the influence of existing offshore windfarms within the Irish Sea.

18.323 Blackpool and the adjoining town of Cleveleys, to the north, lies on the straight, western coastline of the Fylde peninsula. Residential development extends to the promenades along the coast that widen south of Anchorsholme Park to accommodate the Blackpool and Fleetwood Tramway and open space containing lawns and footpaths. Within Blackpool, the seafront is highly developed with three piers and numerous attractions, ending at the southern edge of the town. The ZTV (**Figure 18.5**) indicates potential visibility of the Project from much Cleveleys and the south of Blackpool. While this remains consistent along the coast, behind the seafront ZTV coverage rapidly becomes fragmented in the north of Blackpool. Extensive urban form along this coastline restricts sea views to those from open space near the coast, the seaward boundary of the town and higher buildings/structure within it. The urban foreground context and distant offshore windfarm development within the Barrow/Walney/West of Duddon Sands windfarm grouping reduces receptor susceptibility to the Project.

Magnitude of change: **Medium to Negligible**

18.324 Changes to views from the Blackpool and Cleveleys coastline arising from the Project would be medium magnitude for seafront properties and recreational users of the beaches and seafront facilities; and negligible from the larger, interior area of the urban area.

18.325 Views of the Project from the beaches, promenades, open space and adjoining seafront properties along the Cleveleys/Blackpool coastline would generally be open, direct and long range. The Project would appear as a new, isolated offshore windfarm on the sea skyline to the south of the existing Barrow/Walney/West of Duddon Sands windfarm grouping. The density of urban form would largely restrict visibility of the Project to the seaward edge of the urban area. This would moderate its impact, particularly where tourist attractions, piers and transport infrastructure such as the tramway, intervene in the view. Behind the seafront, remaining areas of the urban area have little visibility of the Irish Sea beyond the roads running nearly perpendicular to the coast. These would generally provide channelled views of the Project north of the South Shore and west of the A5099. Beyond this area, the pattern of development is more piecemeal and conforms less with its gridiron pattern. This factor, combined with the density of urban form and less so, topography,

restricts the magnitude of change to low, where there would be some visibility of the Project, or negligible, where there would be little to none.

Significance of effect

18.326 Based on the combination of the high sensitivity of the receptors and medium magnitude of change, the significance of effect arising from the Project on views experienced from the beaches, promenade and seafront properties of Blackpool and Cleveleys is assessed as **significant** (major/moderate), with the effect reducing to **not significant** (minor) within the settlement away from the seafront. These effects would be direct, long-term and reversible.

Lytham St Anne's

18.327 The assessment of effects on visual receptors within Lytham St Anne's is informed by the assessment of Viewpoint 10 Lytham St Anne's (St Anne's Pier) (**Figure 18.33**) within **Appendix 18.3.**

Sensitivity to change: **High**

18.328 The sensitivity of receptors within Lytham St Anne's is considered high, due to the high value placed on sea views by recreational receptors using St Anne's beach, St Anne's Pier and Promenade Gardens, and residential receptors; and their medium susceptibility to the Project, which reflects the influence of the surrounding urban development and the existing offshore windfarms, within the Barrow/Walney/West of Duddon Sands windfarm group and the Burbo Bank/Gwynt y Môr windfarm group.

18.329 Lytham St Anne's lies on the southwest corner of the Fylde peninsula, between the River Wyre and the Irish Sea, and adjoining the Ribble Estuary, to the south. The town adjoins the roads of North Promenade and Inner Promenade which back the dunes behind the shoreline. The pattern of residential development tends to be perpendicular to the coastline. ZTV coverage (**Figure 18.5**) indicates potential visibility of the Project from the entire town, but urban form restricts sea views to those from open space near the coast, the town's sea front and higher buildings. The foreground context of the town, south-westerly aspect of the coast and distant offshore windfarm development reduces receptor susceptibility to the Project.

Magnitude of change: **Medium to Negligible**

18.330 The change to views from Lytham St Anne's arising from the Project would be medium magnitude along the shoreline and sea front and would reduce to negligible in the urban area behind. From the south Fylde coastline, views of the Project would be long range, and it would appear as a new, isolated offshore windfarm on the sea skyline to the south of the existing Barrow/Walney/West of Duddon Sands windfarm grouping. These views would be restricted to the seafront and adjoining properties, with dunes

backing the beach intervening within views from ground level. The pattern and density of urban form combined with the aspect of the coastline means remaining areas of the town would have little visibility of the Project. Tall dunes backing the beach north of Lytham St Anne's would screen the Project from St Anne's Old Links Golf Club course and the town's northern edge.

Significance of effect

18.331 Based on the combination of the high sensitivity of the receptors and medium magnitude of change, the significance of effect arising from the Project on views experienced along the beach, promenade and seafront of Lytham St Annes is assessed as **significant** (major/moderate), with the effect reducing to **not significant** (minor), within the remaining area of the town away from the seafront. These effects would be direct, long-term and reversible.

Effects on visual receptors – primary transport routes

A584

18.332 The assessment of effects on the A584 is informed by the assessment of Viewpoint 9: Blackpool (near Tower) in the viewpoint assessment (**Appendix 18.3**), which is shown on **Figure 18.32**.

Sensitivity to change: **Medium**

18.333 Road users on the A584 are of medium sensitivity to the Project, due to the transient and incidental nature of their views. Built form screens the sea from view within Lytham St Anne's and Cleveleys. The sea is visible along the stretch of road between Anchorholme Park, on the south side of Cleveleys, and the tram depot on the southern edge of Blackpool, where the A854 forks inland, and dunes increasingly intervene in the view to the sea between Blackpool and Lytham St Anne's. While built form intermittently screens the sea view and many small landscape elements intrude on seaward views, this section of the road is more susceptible to changes associated with the operation and maintenance of the Project than other sections.

Magnitude of change: **Medium**

18.334 Changes to views from the A854 arising from operation and maintenance of the Project would be of medium magnitude between the south side of Cleveleys and the tram depot on the edge of Blackpool. Owing to the largely consistent aspect of the coastline, topography and route, the road would have largely consistent theoretical visibility of the Project on its route through Blackpool alongside the promenade, albeit with actual visibility from the road being intermittent behind occasional buildings and smaller elements such as lighting, the tramway and vegetation alongside the promenade.

18.335 In open views from the road, the Project would be notable on the sea horizon in the far distance, on the periphery of a large-scale seascape and separated

from the perceptible offshore windfarms to the north-west off the Cumbrian coast. In comparison, the Project WTGs would appear relatively larger in apparent scale due to their taller apparent height, larger rotor diameter and comparative distance offshore. The Project would however be seen from an urban context that is strongly influenced by the seaside facilities which provide visual clutter in the views from the A584 through these intervening elements and contrasting with the simple composition of the sea views.

Significance of effect

18.336 Based on the combination of the medium sensitivity of receptors and the medium magnitude of change to the views, the significance of effect arising from the Project on views experienced from the A584 is assessed as **not significant** (moderate), direct, long-term and reversible. Moderate effects are assessed as not significant on views from the A584 as motorists are assessed as having a lower sensitivity to change (than residents or visitors) as they are dynamic, attentive to the road and immediate surroundings, and less focused of the views to the sea from the largely urban context of this road. The changes also do not occur at high magnitude and the introduction of the Project WTGs would occur as further elements that are already partially characteristic in the baseline views of the sea from the road.

Effects on visual receptors – recreational routes

18.337 The assessment of effects on recreational routes considers the Lancashire Coastal Way and Wyre Way (**Figure 18.14**) and is informed by the assessment of Viewpoint 8 Fleetwood, Rossall Point (**Figure 18.31**), Viewpoint 9 Blackpool (**Figure 18.32**) and Viewpoint 10 Lytham St Anne's (**Figure 18.33**) within **Appendix 18.3.**

Lancashire Coastal Way

Sensitivity to change: **Medium-high**

18.338 Walkers on the Lancashire Coastal Way are likely to place a medium-high value on the views from the route. Their susceptibility lies in the potential for changes to the open, simple sea views from coastline. These look directly out to an unbroken horizon of sea, are panoramic and simple, and are dominated by the sea and sky. There are also long views north, to the Lake District, and south, to the mountains of North Wales that provide alternatives to the sea view.

18.339 Susceptibility to change to the views from the Lancashire Coastal Way is reduced by the presence of offshore elements including existing offshore WTGs within these views, the level of urban development influencing the view, and the intervention of smaller scale elements (such as street furniture, lighting etc) along the seafronts. The existing offshore WTGs to the north and south are increasingly prominent towards the south of the route. Oil and gas

infrastructure within the sea is also observable from the route. As this route follows the seafronts of the settlements on the Fylde coastline, urban development is a strong influence along considerable sections of the route. Piers, other seafront structures, tourist attractions, associated transport infrastructure and smaller elements within the settlements intervene within the simple sea views, especially within Blackpool.

Magnitude of change: **Medium to negligible**

18.340 The magnitude of change to views from the Lancashire Coastal Way would be medium between Fleetwood and Lytham St Anne's; reducing to medium-low along the southern edges of Morecambe Bay between Fleetwood and Glasson (River Lune); and would be negligible from the remaining sections of the Lancashire Coastal Way within the SLVIA study area.

18.341 The route closely follows the coastline of the Fylde peninsula, running along the promenades of each settlement, with the Project windfarm site lying perpendicular to the route. For walkers, the Project would be a notable introduction to a part of the seascape currently free of offshore WTGs. This would be consistent along the Fylde coast, due to the consistent character of this section of the route. The Project would be seen within the urban context of this section of coast and the number of piers, seafront structures, tourist attractions and associated landscape elements intervening in views of it would generally moderate the impact of its introduction, especially within Blackpool. Between Blackpool and Lytham St Anne's, the route passes inland of tall dunes backing the beach which screen the Project. Views from this short stretch would undergo a negligible magnitude of change. Beyond the urban west coast of Fylde the route runs through open countryside and aligns with the windfarm site.

18.342 The Project would lie directly ahead of westbound receptors along the northern coastline, east of Knott End-on-Sea to Fluke Hall Marsh; and eastbound receptors, along the southern coastline, east of Lytham to the route's terminus. Despite the route's alignment, the change to views from these sections would be medium-low in magnitude, due to the increased distance to the windfarm site and the greater influence of the immediate coastline to the west. Beyond the Fylde peninsula, the route follows the Lancastrian coastline around Morecambe Bay. Views from this section of the routes would undergo a negligible magnitude of change arising from the distance from the windfarm site and the greater influence of the coastline surrounding the bay.

Significance of effect

18.343 Based on the combination of the medium-high sensitivity of receptors and the medium magnitude of change to the views, the significance of effect arising from the Project on views experienced along the urban section from Knott

End-on-Sea to Lytham St Anne's is assessed as **significant** (moderate); dropping to **not significant** (minor) along the River Ribble east of Lytham St Anne's to Freckleton and **not significant** (negligible) along the section east of Knott End-on-Sea (Fluke Hall Marsh) extending around Morecambe Bay. These effects would be direct, long-term and reversible.

Wyre Way

Sensitivity to change: **Medium-high**

18.344 Walkers on the Wyre Way are likely to place a medium-high value on the views from the route. Their susceptibility lies in the potential for changes to the open, simple sea views primarily from Section 1 of the Wyre Way, which is co-incident with the route of the Lancashire Coastal Way between Rossall School, Rossall Point and the ferry across the River Wyre. Views from this section of the Wyre Way look out to the sea horizon are open and simple and are influenced by the sea and sky. Alternative long views north across Morecambe Bay to the Furness peninsula and the Lake District; and south, to the mountains of North Wales are available between Rossall School and Rossall Point. The presence of existing offshore WTGs, and oil and gas infrastructure within these sea views, and the level of urban development influencing them, reduces the susceptibility to change.

Magnitude of change: **Medium to negligible**

18.345 The magnitude of change to views from Section 1 of the Wyre Way, which is coincident with the Lancashire Coastal Path around Rossall Point is assessed as medium. The Wyre Way follows the same route as the Lancashire Coastal Way between Rossall School, Rossal Point and the ferry across the River Wyre. This section of the route runs along Fleetwood's sea wall, with the Project windfarm site lying perpendicular to the route and the Outer Promenade, where it would be directly ahead in views experienced by people walking west along the path (but behind viewers walking east towards Fleetwood and the River Wyre. The Project would be a notable introduction to a part of the seascape currently free of offshore WTGs and would be seen within the urban context of Fleetwood. Beyond Section 1, the Wyre Way follows the banks of the Wyre Estuary and the River Wyre to the Forest of Bowland. These inland sections (2, 3 and 4) would have little or no visibility of the Project due to the low-lying route of the path along the River Wyre, which extends inland behind the extensive intervening urban areas along the coast, such that viewers would experience a negligible magnitude of change.

Significance of effect

18.346 Based on the combination of the medium-high sensitivity of receptors and the medium magnitude of change to the views, the significance of effect arising from the Project on views experienced from the Wyre Way is assessed as **significant** (moderate) along the coastal stretch of Section 1 from Rossall

School to Rossall Point and Fleetwood, reducing to **not significant** (minor) on views from Sections 2, 3 and 4 that extend along the River Wyre inland away from the coast behind intervening urban areas.

18.6.3.6 Effects on Merseyside

18.347 The Merseyside geographic area of the SLVIA study area is shown in **Figure 18.3** and includes areas with an associate seascape setting within the Sefton and Wirral districts of Merseyside in particular (including the settlements of Southport, Formby and Crosby), with the wider parts of Merseyside extending inland including Liverpool, Knowsley and St. Helens.

18.348 The region's current baseline seascape, landscape and visual amenity is described in **Section 18.5.3.4**, including its associate seascape setting, formed by parts of the Blackpool Coastal Waters and Ribble Estuary MCA (MCA 34), its national and local level landscape character and representative views. The effect of the Project on the seascape, landscape and visual receptors within Merseyside, which were identified in the preliminary assessment as requiring further assessment, are assessed as follows.

Effects on LCTs

Coastal Dunes LCT (2)

Sensitivity to change: **Medium-high**

18.349 The sensitivity of the Coastal Dunes LCT to the Project is considered to be medium-high, reflecting the medium value of the perceived landscape character and its medium-high susceptibility to changes arising as a result of the Project. The value of the LCT derives principally from the relative fragility of this LCT along the predominantly urban coastline and its open, low-lying coastal nature which provides extensive views across the Irish Sea, while forming the setting to the Urban landscape types (Industrial Age and Suburban) backing the LCT. The susceptibility of the LCT to changes associated with the Project derives from the visual association between the coastal area and the sea, where there is potential for development in the seascape to interrupt open views due to the intervisibility with the sea.

18.350 Existing offshore OWF development has a notable influence in the seascape setting of the LCT within Liverpool Bay and off the Welsh coast, extending west across the arrays of Burbo Bank, Burbo Bank Extension, Gwynt y Môr, North Hoyle and Rhyl Flats, which moderate the susceptibility to further changes. Existing offshore windfarms within the Irish Sea to the north have a negligible influence on this section coast due to their distance and position beyond the skyline.

Magnitude of change: **Medium-low**

18.351 The magnitude of change to the perceived character of the Coastal Dunes LCT resulting from the operation and maintenance of the Project is assessed as assessed as medium-low. The Coastal Dunes LCT covers a relatively narrow strip behind the shoreline around Formby Point between Southport and Crosby, where it becomes much narrower. To the north of Formby Point, this section of the Sefton coastline has a north-westerly aspect that overlooks the Irish Sea, while to the south of Formby Point, the aspect is to the south-west towards Liverpool Bay. The perceived seascape character in this south-westerly aspect is strongly influenced by the presence of Burbo Bank and Burbo Bank Extension OWFs, with further windfarm influence extending west into the distance off North Wales.

18.352 The north-easterly aspect is less influenced by existing windfarms, with existing OWFs barely perceptible off the Cumbrian coast, such that the Project would appear as a new introduction within the expansive seascape context to the north-east of the LCT. The Project would introduce a separate OWF influence on the sea skyline to the north-east, however it would introduce elements that are already characteristic features in the receiving seascape and would be experienced in the context of a large-scale seascape and at long distance from the LCT. This reduces its magnitude of change on the perceived character of the Coastal Dunes LCT, which would continue to afford both an intimate and contained experience within the dunes, as well as wide vistas and glimpses of the sea from the dune summits.

Significance of effect

18.353 Based on the combination of the medium-high sensitivity of the receptor and the medium-low magnitude of change, the significance of effect arising from the Project on the perceived character of the LCT is assessed as **not significant** (moderate), indirect, long-term and reversible on the perceived character of the Coastal Dunes LCT (2). Moderate effects are assessed as not significant on the perceived character of this LCT as they fall within the orange area of the matrix (indicated in orange in **Table 18.8**) and are considered not significant due to the medium-high sensitivity and medium-low magnitude of change factors evaluated. The changes do not occur at high magnitude nor on areas of high sensitivity seascape, and the introduction of the Project WTGs would occur as further elements that are already substantially characteristic in the baseline seascape context, in which the existing offshore windfarms within Liverpool Bay (Burbo Bank/Burbo Extension) and off North Wales (Gwynt y Môr/North Hoyle/Rhyl Flats) have a moderating influence to the significance of further offshore windfarm development on the perceived landscape character of this coastal LCA.

Dune Backlands LCT (3)

Sensitivity to change: **Medium**

18.354 The sensitivity of the LCT to the Project is considered to be medium, reflecting the medium value of the landscape and its perceived character, and its medium susceptibility to changes arising as a result of the Project. The value of the LCT derives principally from the relative rarity of this LCT along the predominantly urban coastline, and its open, pastoral nature which contrasts with the adjoining urban landscape types. The limited susceptibility of the LCT to changes associated with the Project derives from the weaker visual association between these open areas and the sea, where there is potential for development in the seascape to interrupt open views. The LCT is influenced by adjoining urban development and its expansion, including recreational uses such as sports pitches, which extends considerably into the LCT. Limited intervisibility with the Irish Sea and the influence of urban development reduces the LCT's susceptibility to the Project.

Magnitude of change: **Low**

18.355 The magnitude of change to the perceived character of the LCT resulting from the operation and maintenance of the Project is assessed as low, with areas of the LCT have negligible or zero magnitude of change where there is no visibility of the Project. Much of the LCT has limited or filtered visibility of the seascape of the Irish Sea. In the areas with most potential to be affected by the Project, linear tree groups associated with ditches in combination with flat topography would limit views and therefore the magnitude of change. In areas of the LCT adjoining settlement to the west, urban form would restrict the visibility of the Project. This is particularly true inland of Southport, Formby and Hightown but also applies south of Formby. Woodland within Ainsdale Sand Dunes NNR would restrict the visibility of the Project from much of the LCT including Woodvale Airfield. West of Formby, similar woodland would screen views out to sea and the Project.

Significance of effect

18.356 Based on the combination of the medium sensitivity of the receptor and the low magnitude of change, the significance of effect arising from the Project on the perceived character of the Dune Backlands LCT (3) is assessed as **not significant** (minor), indirect, long-term and reversible.

Coastal Marshland LCT (4)

Sensitivity to change: **Medium-high**

18.357 The sensitivity of the LCT to the Project is considered to be medium-high, reflecting the medium value of the landscape and its perceived character, and its medium-high susceptibility to changes arising as a result of the Project. The value of the LCT derives principally from its close association and intervisibility

with the sea which provide wide views to far horizon. These are characteristic of the LCT which, due to this close association, is secluded and verging on bleak in character. Susceptibility of the LCT to changes associated with the Project derives from this visual association between the coastal area and the sea, and the potential for changes to the wide views of the far horizon. The Project has potential to interrupt characteristic open sea views due to the intervisibility with the sea. Distant existing offshore windfarm development off the Cumbrian coast to the north, has a limited influence on this section coast due to distance (over 40km) and the position of these windfarms beyond the skyline. The aspect of the LCT's coast to the north-east also limits the exposure to existing offshore windfarms in Liverpool Bay and off North Wales to the south-west.

Magnitude of change: **Low**

18.358 The magnitude of change to the perceived character of the LCT resulting from the operation and maintenance of the Project is assessed as low. The Project is likely to be intermittently visible from the flat, low-lying topography and saltmarsh, forming a new introduction to the wide views to the far horizon. Due to its distance offshore, the Project would form horizon development to the wide views afforded from the LCT, rather than appearing within its seascape. The Project is unlikely to interrupt the main impression of sky and space, due to its small vertical scale and position close to the horizon. The Project would also relate legibly to the exposure experienced from this LCT. The LCT coastline has a north-westerly aspect that is subject to limited influence from existing windfarms, such that the Project would appear as a new element on the sea horizon beyond the immediate seascape context. Parts of the LCT encompass Crossens Marsh, Hesketh Golf Club course, Southport Golf Links, Marine Lake and Victoria Park, which have partially eroded the natural qualities of the LCT, which together with the influence of urban form within Southport moderates the magnitude of change to further development influences.

Significance of effect

18.359 Based on the combination of the medium-high sensitivity of the receptor and the low magnitude of change, the significance of effect arising from the Project on the perceived character of the LCT is assessed as **not significant** (moderate/minor), indirect, long-term and reversible on the perceived character of the Coastal Marshland LCT (4).

Effects on views and viewpoints

18.360 An assessment of the effects of the Project on representative viewpoints within the Merseyside region of the SLVIA study area is undertaken within **Appendix 18.3** from Viewpoint 11 Southport Pier (**Figure 18.34**), Viewpoint 12 Formby Point (**Figure 18.35**), Viewpoint 14 Crosby Beach (**Figure 18.37**), Viewpoint

15 Fort Perch Rock, New Brighton (**Figure 18.38**) and Viewpoint 16 Hoylake (Hilbre Point) (**Figure 18.39**).

18.361 The following assessment provides a summary of these effects on representative views from Merseyside and provides assessment of representative visual receptors (such as settlements, transport routes and recreational routes) that were identified in the preliminary assessment as requiring further assessment.

Sensitivity to change: **Medium-high**

18.362 Open sea views from coastal settlements within Merseyside such as Southport (Viewpoint 11), Formby (Viewpoint 12) and Crosby (Viewpoint 14), New Brighton (Viewpoint 15) and Hoylake (Viewpoint 16) are generally of medium to medium-high value. This reflects the value placed on sea views by recreational users accessing the beach and associated facilities at Birkdale Sands, Ainsdale Sands and Formby Point; and by residents within the coastal settlements of Southport, Formby, Hightown and Crosby, within the Liverpool conurbation. Open sea views from coastal settlements within Merseyside neither encompass a designated landscape nor are afforded planning policy protection, which moderates their assessed value. Informal recognition is indicated by the seaward alignment of the urban sea frontages and the popularity of the beaches/sea fronts with visitors. The views have some scenic qualities relating to the content and composition of the visible landscape, particularly the large-scale, open and exposed sea and skies viewed from the low coastline, however extensive urban development, and tourism influences and activities influence the sea front's scenic qualities.

18.363 Scenic quality and value derive partially from views out to the open Irish sea, and the more natural and smaller scale coastal landscapes of the Coastal Dunes LCT (2) and Coastal Marshlands LCT (4) to the north and south of Southport respectively; and the adjoining Dune Backlands LCT (3).

18.364 The susceptibility of coastal views from the Merseyside coastline to the Project is generally assessed as being medium-high, including views from the representative viewpoints. This reflects the level to which the views may be susceptible to changes arising from the Project that may be perceptible within prevailing long-range, wide vistas glimpsed from the coastal landscape. The high level of development within this section of the Merseyside coastline limits susceptibility to the Project however, restricting the coastline's wild, scenic and tranquil qualities to the smaller undeveloped areas, despite the coastline's close association with the Irish Sea.

18.365 Susceptibility to change is assessed as medium-high from representative viewpoints, as residents have prolonged views, whose main attention and interest are on the sea and other elements within their immediate surroundings. Views from these settlements are experienced by a relatively

large number of these settlements' residents. Many of these viewpoints are also well visited by tourists and visitors, who are susceptible to changes occurring to sea views, generally over a short duration during their visit to the coast. On a busy summer's day there is capacity for the character of views to be fundamentally changed by intensity of public use at the seafront and beach activity. There are direct views out to sea from the coastal edge, from the low coastline over open and exposed sea, in which viewers are more liable to be influenced by the Project. Elements associated with the urbanised coast and tourism influences, and activities detract, from the existing visual amenity and moderate visual sensitivity. Views from the Merseyside coast are strongly influenced by the presence of Burbo Bank and Burbo Bank Extension OWFs, with WTGs also extending west into the distance off North Wales, which moderates the susceptibility to change. The north-easterly aspect experienced from the Sefton coast further north near Southport is less influenced by existing windfarms.

Magnitude of change: **Medium to negligible**

18.366 Operation and maintenance of the Project would result in a medium magnitude of change to views from the northern part of the coast from Southport (Viewpoint 11), reducing to medium-low from Formby Point (Viewpoint 12) and Crosby Beach (Viewpoint 14), and low to negligible in views from the Wirral coast such as Fort Perch Rock, New Brighton (Viewpoint 15) and Hoylake (Viewpoint 16). The Project would lie between 30 to 40km from the nearest part of the Merseyside coast, appearing in the far distance on the periphery of the seascape adjoining the strongly developed coastline. The Project would introduce a separate OWF influence on the sea skyline to the north-east, however it would introduce elements that are already characteristic features in the receiving views (which are particularly influenced by Burbo Bank and Burbo Bank Extension OWFs).

18.367 The Project would also be viewed as horizon development, in the context of a large-scale seascape and at long distance from the coast. ZTV coverage, although widespread across the Merseyside coastline, is more fragmented within the Coastal Dunes LCT (2) south of Southport and the low-lying hummocky topography and landscape elements within the Dune Backlands LCT (3), such as willow and scrub along ditches, would intermittently screen the Project. In views from the Wirral coast, such as from New Brighton (Viewpoint 15) and Hoylake (Viewpoint 16), the Project would introduce distant WTG elements that already are characteristic in the receiving views and would appear in the background to existing operational offshore windfarms, beyond the immediate seascape context and notably smaller in apparent scale due to their distance from the Wirral coast.

Significance of effect

18.368 Based on the combination of the medium-high sensitivity of the receptors and medium magnitude of change the significance of effect arising from the Project on views experienced from Viewpoint 11 Southport Pier is assessed as **significant** (moderate), reducing to **not significant** (moderate) as the coast progresses southwards along the Merseyside coast to Formby Point (Viewpoint 12) and Crosby Beach (Viewpoint 14), then reducing further from the Wirral coast to **not significant** (moderate/minor) from New Brighton (Viewpoint 15) and **not significant** (minor) from Hoylake (Viewpoint 16). The effects would be direct, long-term and reversible.

Effects on visual receptors – settlements

Southport

Sensitivity to change: **Medium-high**

18.369 Southport (**Figure 18.33**. Viewpoint 11 Southport Pier) is a generally low-lying settlement on the Fylde and Amounderness Plain. The town contains an extensive area of residential development partially separated from the coastline by recreational seafront facilities associated with Southport Pier and including King's Gardens and South Marine Gardens, Princes Park and Victoria Park, which are valued by residents and visitors to the town. The ZTV (**Figure 18.5b**) indicates potential visibility of the Project from the much of the town, including the Marshside, Crossens and Birkdale areas. Inland areas of the town are shown as having more intermittent visibility of the Project while the southern end of the town, Hillside, has limited visibility.

18.370 As confirmed by field survey assessment, the low-lying character of the landform and density of built development would restrict sea views to those from open space near the coast, the seafront, and higher buildings within the town as being those most susceptible to changes arising from the Project. Views towards the sea from the majority of Southport would include the foreground context of the town and be subjected to local screening by buildings and vegetation, with the susceptibility to changes arising from the Project reducing with distance inland away from the seafront.

Magnitude of change: **Medium to Negligible**

18.371 The magnitude of change to views from Southport would be medium for residents of seafront properties and recreational users of Birkdale Sands or the seafront facilities, as assessed from Viewpoint 11 (**Appendix 18.3**). The magnitude of change would reduce to negligible from the larger, interior area of Southport where sea views are restricted by intervening buildings within the urban environment. Properties adjoining the open space along the shoreline have the greatest potential for views of the Project. These include Marshside, behind Crossens Marsh, Hesketh Golf Club and Southport Golf Links; central

Southport, behind Marine Lake, Princes Park and Victoria Park; and Birkdale, behind the dunes backing Birkdale Sands. Views of the Project from this seaward boundary of the town would be open and direct.

Significance of effect

18.372 Based on the combination of the medium-high sensitivity of the receptors and medium magnitude of change, the significance of effect arising from the Project on views experienced by residents of seafront facilities, properties and recreational users of Birkdale Sands are assessed as **significant** (moderate), with the effect reducing to **not significant** (minor) from areas within Southport that are set-back from the seafront.

Crosby

Sensitivity to change: **Medium-high**

18.373 The coastal town of Crosby is a generally low-lying settlement separated from the sea by a narrow strip of coastal dunes (LCT 2) and Crosby Coastal Park. Comprising extensive areas of residential development, the town is part of the Liverpool conurbation with only Rimrose Valley Country Park preventing continuity with adjoining urban form. The ZTV (**Figure 18.5b**) indicates potential visibility of the Project from coastal areas of the town, where coastal views are likely to be valued by residents and visitors to areas around Crosby Beach (Viewpoint 14, **Figure 18.37**). Theoretical visibility extends to other areas of the town, including the Blundellsands and Great Crosby areas, reducing in the south towards Waterloo. Field survey assessment has however confirmed that the low-lying intervening landform and dense urban form restricts sea views to those from open spaces near the coast, the seaward boundary of the town and higher buildings within it. The main orientation of the town is also to the west/south-west, across Liverpool Bay, which is oblique to the Project and reduces its susceptibility to changes occurring to the north-east. Views towards the sea from much of Crosby would include the foreground context of the town with local screening by buildings and vegetation, with the susceptibility to changes arising from the Project reducing with distance inland away from the seafront.

Magnitude of change: **Medium-low to negligible**

18.374 The magnitude of change to views from Crosby would be medium-low along the coastal edge, such as from Crosby Beach (Viewpoint 14) (**Figure 18.37**), reducing to negligible from the larger inland part of town away from the seafront. Properties adjoining the town's northern and seaward boundaries have potential for views of the Project. Those at the north-west corner, being closest to the windfarm site, have the greatest potential visibility of the Project. Along the northern boundary, dunes within the West Lancashire Golf Club course and other intervening landscape elements further inland reduces the potential visibility of the Project. This is greater along the seaward boundary

due to the intervening seascape. Existing OWFs in Liverpool Bay (Burbo Bank and Burbo Bank Extension) lie almost directly ahead of seafront properties and would be a prominent influence. The Project would introduce a separate offshore windfarm influence on the sea skyline to the north-east, however, it would introduce elements that are already characteristic features in the receiving views (which are particularly influenced by Burbo Bank and Burbo Bank Extension).

Significance of effect

18.375 Based on the combination of the medium-high sensitivity of the receptors and medium-low magnitude of change, the significance of effect arising from the Project on views experienced from Crosby is assessed as **not significant** (moderate), indirect, long-term and reversible. Moderate effects are assessed as not significant on views from the coastal areas of Crosby as they are assessed as having a slightly lower sensitivity to change than the settlements to the north (such as Blackpool and Lytham St Anne's) and due to the medium-low magnitude of change factors evaluated. The changes do not occur at high magnitude, nor on views of high sensitivity and the introduction of the Project WTGs would occur as further elements that are already substantially characteristic in the baseline views from Crosby. The existing OWFs within Liverpool Bay (Burbo Bank/Burbo Extension) and off North Wales (Gwynt y Môr/North Hoyle/Rhyl Flats) have a moderating influence to the significance of further offshore windfarm development in views from the coastal areas of Crosby.

Effects on visual receptors – primary transport routes

A565

Sensitivity to change: **Medium**

18.376 Road users on the A565 are of medium sensitivity to the Project, due to the transient and incidental nature of their views, which reduces their susceptibility. The sections of the road with more potential for effects arising from the Project are those approaching the coast near Southport or those that run through open countryside between the settlements. These sections are likely to be more valued by people travelling on the route, than views experienced within urban areas, such as the sections to the east of Hightown (between Crosby and Formby) and approaching Southport, being the most susceptible for northbound road users.

Magnitude of change: **Low to negligible**

18.377 Changes to views from the A565 arising from the operation and maintenance of the Project would be of low to negligible magnitude. There are very few sea views from the A565 due to its route set-back from the coast and the intervening landform and landscape elements that prevent views to the sea,

from the majority of the route. Much of the route of the A565 passes through urban areas including Formby and Southport, where views are restricted by the surrounding built environment. The A565 passes through Southport but does not follow the seafront, being set back within the town.

18.378 There are short sections of the route that pass through open countryside between Crosby, Formby and Southport, however views to the sea tend to be restricted by intervening vegetation and coastal landforms. There may be short, fleeting section of the route, such as entering Southport (near Royal Birkdale) where the Project may be visible in the far distance out to sea and may be seen within the context of a vast seascape as a new windfarm grouping that is separate from other existing offshore WTGs on the skyline. These views are likely to be fleeting and very short in duration, and not representative of the wider negligible change that occurs to views from the route.

18.379 Further south, as the road orientation changes passing Formby, visibility of the Project is likely to be restricted by urban form. This would be further reduced by topography and woodland within Ainsdale Sand Dunes NNR as well as vegetation both along the road and within the wider landscape. This is particularly true on the approach to Crosby through Moss Wood. The Project is unlikely to be perceptible in views from the majority of the A565 and would not notably alter the views experience by road users.

Significance of effect

18.380 Based on the combination of the medium sensitivity of receptors and the low to negligible magnitude of change to the views, the significance of effect arising from the Project on views experienced from the A565 is assessed as **not significant** (minor/negligible), direct, long-term and reversible.

Effects on visual receptors – recreational routes

Trans Pennine Trail

18.381 The assessment of visual effects arising from the operation and maintenance of the Project is informed by the Blade tip ZTV (**Figure 18.14**) and the Viewpoint Assessment (Viewpoint 11 Southport Pier, **Appendix 18.3**).

Sensitivity to change: **Medium-high**

18.382 Walkers on the section of the Trans Pennine Trail between Southport and Ainsdale, where the route hugs the coast and has consistent sea views, have a medium-high sensitivity to the Project due to the exposure of this coastal section of the route to changes and the value that walkers place on sea views over this section of the Trans Pennine Trail. The sensitivity to change is however moderated by the presence of existing offshore windfarms in Liverpool Bay within the baseline views, particularly Burbo Bank and Burbo Bank Extension, which are prominent. Along remaining sections of the Trans

Pennine Trail, which extend inland away from the coast and do not readily afford sea views, walkers are generally considered to have medium susceptibility due to the inland landscape context, limited sea views (and reduced susceptibility of these views to changes), and the transience, duration and changeability of views from the route that would moderate their susceptibility.

Magnitude of change: **Medium to negligible**

18.383 Views from the Trans Pennine Trail during operation and maintenance of the Project would undergo a medium magnitude of change along the coastal section between Ainsdale and Southport. Views from this coastal section of the route are likely to be similar to that represented by Viewpoint 11 near Southport Pier (**Figure 18.34**). This section of the Trans Pennine Trail follows a coastal route that follows the seafront in Southport alongside Birkdale Sands, passing the dunes at the Ainsdale and Birkdale Nature Reserve and the Ainsdale Hills before extending inland. The Project is oblique to this coastal section of the Trans Pennine Trail but would appear as a new windfarm on the sea skyline to the north-west within the same sector of the view as the very distant existing offshore windfarms off the Cumbrian coast. The Project would lie on the horizon beyond the immediate seascape and is likely to appear closer and larger in apparent scale than the existing WTGs off the Cumbrian coast.

18.384 Further south, as the Trans Pennine Trail turns inland to cross the rail line and the A565 to follow Plex Moss Lane, westbound walkers may glimpse the Project beyond intervening vegetation, directly ahead by and in the distance, however views are likely to be restricted by intervening urban areas of Southport. Visibility of the Project would diminish further eastwards as tree cover increasingly screens the sea view before urban form completely screen it at Netherton. Beyond the coastal section of the route, from inland areas extending between Ainsdale and Liverpool, the magnitude of change to views from the Trans Pennine Trail is assessed as negligible.

Significance of effect

18.385 Based on the combination of the medium-high sensitivity of receptors and the medium magnitude of change to the views, the significance of effect arising from the Project on views experienced from the coastal section of the Trans Pennine Trail between Southport and Ainsdale is assessed as **significant** (moderate), reducing to **not significant** (minor) along the remaining sections of the route extending inland from Ainsdale away from the coast.

18.6.3.7 Assessment of night-time effects on views and character

Introduction

18.386 This section provides an assessment of the visual effects arising from the visible lighting requirements (aviation and marine navigational) of the Project. The Project would have impacts on visual receptors/views at night during the operation and maintenance phase.

18.387 CAA guidance requires that 'en-route obstacles' at or above 150m above ground level are lit with visible lighting to assist their detection by aircraft. As such, there is potential that parts of the Project may be visible at night. A description of the proposed lighting is found within **Chapter 5 Project Description** and the worst-case scenario for night-time lighting of the Project is set out in **Table 18.2**. The effect of the Project at night would result primarily from visible medium intensity (2,000 cd) flashing red coloured aviation light fittings located on the top of each nacelle of the peripheral WTGs.

18.388 This visual assessment of WTG lighting is supported by a baseline lighting map (**Figure 18.16**), a ZTV of the aviation lighting (**Figure 18.17**) and night-time photomontage visualisations from three viewpoints in Fleetwood (**Figure 18.31h-m**), Blackpool (**Figure 18.32h-m**) and Lytham St Anne's (**Figure 18.33h-m**). These viewpoints have been scoped into the assessment as representative of the impacts from the closest section of coastline to the Project, where there is potential for the lighting of the Project at night to be most visible.

18.389 The effects of the Project at night from all viewpoints located at greater distances from the north-west England coast, the LDNP, Merseyside and North Wales would be of diminished intensity and of lesser effect. In views from the coastline of Cumbria, the LDNP, the Wirral and North Wales at night, the lighting of the Project may only be visible in the background to the lighting of operational windfarms at closer range, where the effects of the Project on views at night are assessed as **not significant** given the distance, diminished intensity, and position of the lighting behind existing windfarm lights.

Regulations and guidance

18.390 In the UK, the International Civil Aviation Organization (ICAO) requirements for lighting WTGs are implemented through CAA publication CAP 764: Policy and Guidelines on Wind Turbines (CAA, 2016), and CAP 393: Air Navigation Order 2016 (CAA, 2016).

18.391 The proposed WTGs, at a maximum of 310m above HAT to blade tip, would require lighting under Article 223 of the Air Navigation Order (CAA, 2016). This requires that WTGs of 60m or more above sea level HAT in UK territorial waters are 'fitted with one medium intensity steady red light positioned as close as reasonably practicable to the top of the fixed structure' and that 'the

periphery of the group need to be fitted with a light'. For the purpose of the assessment, medium intensity aviation lighting is assumed to be 2,000cd fitted on the top of each nacelle, positioned on assumed peripheral structures shown in **Figure 18.17**.

18.392 For 2,000cd medium intensity steady or fixed red lights, ICAO indicates a requirement for no lighting to be switched on until 'Night' has been reached, as measured at 50cd/m2 or darker. CAA have confirmed that UK policy broadly aligns with the international standards, including insofar as the point at which lights must be switched on at 'Night' rather than 'Twilight'.

18.393 Article 223 of Air Navigation Order (CAA, 2016) also requires that 'the angle of the plane of the beam of peak intensity emitted by the light must be elevated to between 3-4° degrees above the horizontal plane', but that 20-45% of the peak intensity is to be visible at the horizontal plane and not more than 10% of the peak intensity is visible at 1.5 degrees or more below the horizontal plane. This focusses the 2,000cd lighting in the horizontal plane between 3-4° above horizontal and allows for a reduced intensity of the light at and below the horizontal plane.

18.394 Article 223 of Air Navigation Order (CAA, 2016) also allows for 2,000cd aviation lights to be dimmed to 'not less than 10% of the minimum peak intensity' if 'visibility in all directions from every wind turbine generator in a group is more than 5km'. Visibility conditions are measured using a visibility sensor, to allow the aviation lights to dimmed automatically to respond to prevailing meteorological conditions. 2,000cd lights would therefore only be experienced in visibility of <5km; and their intensity would be dimmed to 200cd in visibility of >5km.

18.395 GLVIA3 (Landscape Institute, 2013) recommends that *'the visual effects assessment will need to include qualitative assessments of the effects of the predicted light levels on night-time visibility'* and that *'reference should be made to appropriate guidance, such as that provided by the Institution of Lighting Professionals* (ILP, 2011)'.

18.396 Guidance produced by the Institute of Lighting Professionals (ILP, 2011) is useful in setting out some key terminology that is used in this visual assessment of wind turbine lighting:

- '*Obtrusive Light - whether it keeps you awake through a bedroom window or impedes your view of the night sky, is a form of pollution, which may also be a nuisance in law and which can be substantially reduced without detriment to the lighting task*
- *Skyglow – the brightening of the night sky*
- *Glare – the uncomfortable brightness of a light source when viewed against a darker background*

- *Light Intrusion – the spilling of light beyond the boundary of the property or area being lit, are all forms of obtrusive light which may cause nuisance to others'*

Assessment methodology

18.397 The assessment of night-time visual effects is based on the description of proposed WTG lighting set out in the assumed worst-case scenario in **Table 18.2** (based on the maximum number of WTGs scenario) and the ICAO/CAA regulations and standards described above, utilising the methodology set out in **Appendix 18.1**.

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

18.399 A worst-case approach is applied to the assessment that considers the potential effects of medium-intensity 2,000cd lights in clear visibility. It should be noted however, that medium intensity lights are only likely to be operated at their maximum 2,000cd during periods of poor visibility. A further assessment of the likely effects is therefore made factoring in embedded mitigation, i.e., that the 2,000cd aviation lights would be dimmed to 10% of their value (200cd) if meteorological conditions permit (when visibility is greater than 5km).

18.400 It should be noted that the WTGs would also include infra-red lighting on the hubs, which would not be visible to the human eye. Details of the lighting would be agreed with the MOD. The focus of the night-time visual assessment in this assessment is on the visible lighting requirements of the Project.

18.401 The study area for the visual assessment of WTG lighting is shown in **Figure 18.17** and is coincident with the 60km SLVIA study area, however, lighting effect and the assessment is particularly focused on the closest areas of the coastline, within approximately 35km. Viewpoints have been scoped into the assessment as representative of the impacts from the closest section of coastline to the Project, between Fleetwood and Lytham St Anne's, where there is potential for the lighting of the Project at night to be most visible. The effects of the Project at night from all areas located at greater distances would be of diminished intensity and of lesser effect.

18.402 ICAO indicates a requirement for no lighting to be switched on until 'Night' has been reached, as measured at 50cd/m2 or darker. It does not require 2,000cd medium intensity to be on during 'twilight', when seascape and landscape character may be discerned. The aviation and marine navigational lights may be seen for a short time during the twilight period when some recognition of landscape features/profiles/shapes and patterns may be possible. It is

considered however, that level of recognition does not amount to an ability to appreciate in any detail landscape character differences and subtleties, nor does it provide sufficient natural light conditions to undertake a landscape character assessment.

18.403 The assessment of the lighting of the Project is primarily intended to determine the likely significant effects on the visual resource i.e., it is an assessment of the visual effects of aviation lighting on views experienced by people at night. The matter of visible aviation and marine navigation lighting assessment is primarily a visual matter and the assessment presented focusses on that premise.

18.404 The Scottish Government has established an Aviation Lighting Working Group of key stakeholders (including NatureScot) to help ensure consistent assessment of night-time effects from visible WTG lighting. The group's objective is to produce guidance to streamline the process for night-time lighting assessments. While this guidance has yet to be published, there is some consensus that the perception of landform/skylines at night is a relevant consideration (with perception being a component of visual effects), however there is also widespread agreement that it is not possible to undertake landscape/coastal character assessment after the end of civil twilight, when it is technically 'dark' and WTG aviation lighting is switched on. With respect to landscape character, NatureScot (September 2023), advise that assessments focus on *'effects on perceived landscape sensitivities, in particular where qualities of wildness, remoteness and lack of man-made elements are features of the landscape'*.

18.405 Assessment of proposed WTG lighting on coastal character at night is therefore focused on particular areas where the landform of the foreshore, coastal landforms and inshore islands may be perceived at night with lights in the background on the sea skyline (i.e. where a perceived character effect may occur as a component of visual effects); and for particular designations where dark skies are a specific 'special quality' defined in their citation.

Visual representations

18.406 A ZTV map has been produced to show the areas from which the medium-intensity aviation lights may be seen (**Figure 18.17**). This ZTV can be used to identify where the aviation lights may theoretically be visible and how many lights may be theoretically visible from different locations. The ZTV illustrates the 'bare ground' situation and does not take into account the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility. It also does not indicate the decrease in visibility of the lights that occurs with increased distance. The nature of what is visible from 5km away would differ markedly from what is visible from 15km or 30km away,

although both are indicated on the ZTV as having the same level of visibility in terms of number of aviation lights visible.

18.407 Night-time baseline view panoramas and photomontage visualisations showing medium-intensity nacelle mounted aviation lighting are presented from three viewpoints:

- Viewpoint 8 Fleetwood (**Figure 18.31h-m**)
- Viewpoint 9 Blackpool (**Figure 18.32h-m**)
- Viewpoint 10 Lytham St Anne's (**Figure 18.33h-m**)

18.408 These viewpoints have been selected to be representative of the closest section of the SLVIA study area coastline to the windfarm site, from which the visual effect of aviation lighting at night is likely to be at its maximum.

18.409 The night-time photography has been captured in low light conditions, after the end of civil twilight, when 'night' has been reached and when other artificial lighting, such as streetlights, car headlamps and lights on buildings are on. This is to show how the aviation lighting would look compared to the existing baseline at such times, being optimum and worst case for the purposes of the assessment.

18.410 Although aviation lighting manufacturers must meet the minimum requirements, their products may vary in relation to recommended limits set out in ICAO standards, which makes it difficult producing accurate visualisations as the lighting characteristics of different light fittings of the same intensity may vary outside the minimum requirements stipulated by ICAO. The night-time photomontages shown in these figures have been produced to show 2,000cd lighting to inform the assessment of worst-case effects assessed, and are likely to over-represent the visibility of aviation warning lighting experienced, as in reality they are likely to operate at reduced intensity (200cd) in clear visibility conditions.

Night-time effects on views and visual amenity

18.411 Visual effects of the aviation lighting would only occur where their introduction influences the visual amenity and views experienced by people in the area. The geographic areas where these visual effects may occur is defined by the ZTV shown in **Figure 18.17**. The nacelle aviation light ZTV can be used to identify where the aviation lights may theoretically be visible and how many lights may be visible from different locations. The ZTV is based on the nacelle mounted position of the aviation lights, at 170m hub height, on each of the proposed WTGs. The base mapping has been darkened to give an indication of those areas that would not be affected by visibility of the aviation lighting.

18.412 The aviation lighting ZTV has been calculated using digital terrain data, which does not account for the screening effects of vegetation or built form. The

aviation lighting ZTV therefore shows a worst-case and is likely to overstate the actual visibility of the Project, which would be further screened by vegetation or built form, and the intensity of the lights would likely be further reduced by prevailing atmospheric conditions in long-range views out to sea.

18.413 The ZTV (**Figure 18.17**) shows that the WTG aviation lights would not be visible from large geographic areas where the terrain prevents views of the WTG aviation lights. These areas are shown in 'dark grey' in the mapping with no ZTV colouring. Notably, the areas where the WTG aviation lights would not be visible include:

- The majority of the southerly LDNP within the SLVIA study area, with the exception of limited areas of high ground around Black Combe and Corney Fell at the southern edges of the LDNP
- The majority of low-lying areas of the Cumbrian coastal plain and inner Morecambe Bay
- Inland areas of Wyre, Fylde and West Lancashire away from the coast across the low-lying areas of the Lancashire plain
- The large majority of Merseyside, the Wirral and North Wales, with the exception of the coastal edge and immediate hinterland

18.414 The ZTV (**Figure 18.17**) shows some areas of higher theoretical visibility of the WTG aviation lights from the coastline of Walney Island, the Wirral and North Wales. However, from these areas, the WTG aviation lights would be subsumed behind existing lighting of the operational offshore windfarms which are lit at night and would have minimal additional influence at such long range and at low intensity, compared to the existing WTG lighting that is located at closer range and greater intensity. The effect of the Project at night on coastal views from North Wales, the Wirral area of Merseyside and Barrow in Furness (including Walney Island) is assessed as being of negligible magnitude and **not significant** (minor).

18.415 The ZTV (**Figure 18.17**) shows that the main areas of higher theoretical visibility of the WTG aviation lights would be from the open seas within the SLVIA study area. These includes areas of the south Irish Sea within approximately 30km of the windfarm site, waters off Morecambe Bay and Blackpool Coastal Waters, including the Fylde coastline between Fleetwood and the Ribble Estuary, and the Sefton coast between Southport and Formby Point. These are all areas of coastline where the baseline influence of lighting at night is greatest. The effect of the Project at night on coastal views from these areas are assessed with reference to representative viewpoints in Fleetwood (**Figure 18.31h-m**), Blackpool (**Figure 18.32h-m**) and Lytham St Anne's (**Figure 18.33h-m**). These viewpoints have been selected to be representative of the closest section of the SLVIA study area coastline to the

windfarm site, from which the visual effect of aviation lighting at night is likely to be at its maximum.

18.416 The sensitivity of these viewpoints at night is considered to be **medium-low**, reflecting a low value and the receptors experiencing the view having medium susceptibility to change. There is no formal recognition of these views as having value at night-time (for example, as a dark skies discovery site) and they are not specifically promoted to encourage visitors with the express intention of viewing the night sky. Although they are locations from which to look out to sea at night, the susceptibility of people experiencing night-time views is influenced by existing lighting within these settlements. This includes sea-front residential lighting, street lighting, vehicles, lighting of Blackpool illuminations, fun fair and piers at Blackpool and Lytham St Anne's, and existing offshore WTG lighting out to sea. The susceptibility of receptors is therefore relatively lower than areas where the baseline contains no or limited existing lighting. The influence and intensity of existing lighting of these sea fronts notably reduces the sensitivity to change to the appearance of distant WTG lighting out to sea.

18.417 The predicted view of the aviation lights at 2,000cd is shown in the photomontage views from viewpoints in Fleetwood (**Figure 18.31h-m**), Blackpool (**Figure 18.32h-m**) and Lytham St Anne's (**Figure 18.33h-m**).

18.418 Aviation lighting at the nacelle height of the WTGs of the Project is predicted to be visible in the views at night only in very good and excellent visibility conditions, with the closest potential WTG aviation light located approximately 31.7km from Fleetwood, 29.1km from Blackpool and 30.6km from Lytham St Anne's. Marine navigational lights at WTG platform level are predicted not to be visible from these viewpoints due to their relatively low position at platform level and the effect of earth curvature forming an intervening horizon that prevents them from being visible at such long distance offshore.

18.419 The aviation lighting of the proposed WTGs would introduce further point sources of red light into the distance, at slightly varying heights, that would be seen low to the horizon, limiting the intrusion into views of stars in the night-sky that may be seen above. The visible aviation lights would be small scale and very distant and would not be unusual in the context of other distant WTG aviation lighting seen offshore in views from these viewpoints. The views from this Fylde coastline are not within a dark location and as such the introduction of WTG aviation lighting would be appreciated in the context of other light sources, at a range of distances.

18.420 As a result of these factors, the magnitude of change on the night-time views from viewpoints in Fleetwood (Viewpoint 8), Blackpool (Viewpoint 9) and Lytham St Anne's (Viewpoint 10) resulting from the WTG aviation lights operating at 2,000cd is assessed as **low**, and when combined with the

medium-low sensitivity of receptors at these viewpoints, results in a **not significant** (minor/negligible), direct, long-term, and reversible visual effects.

18.421 The aviation lights may influence the continuity between the dark sea below and the dark skies above, however they are low to the horizon and do not extend into, nor impede, the view of sky at night. The aviation lights are not expected to result in obtrusive light that impedes the wider expanse of night sky which can be experienced readily above the viewer, nor result in brightening of the night sky (skyglow) or glare on to the sea surface, and would therefore not be of detriment to the overall experience of the night skies in these views, which are substantially influenced by baseline lighting at higher intensity, including Blackpool illuminations over a 10km stretch of Blackpool promenade.

18.422 The operation of aviation lighting at the lower intensity of 200cd when visibility from every WTG is >5km would provide further mitigation and reduction in the perceived intensity of the visible WTG aviation lighting.

18.423 Given the urban developed character of the Fylde coastline the effect of the lighting of the Project at night is also considered to be not significant on the perceived landscape and coastal character.

18.6.4 Potential effects during decommissioning

18.6.4.1 Effects on seascape character

18.424 The construction of the Project has the potential to result in significant effects on the perceived seascape character of MCA 32, MCA 34 and MCA 38, scoped into the detailed assessment in **Table 18.35**.

18.425 Decommissioning phase effects on seascape character would occur as a result of the decommissioning activities, including the presence of jack-up vessels and/or heavy lift vessels during the decommissioning of foundation substructures, WTGs and OSP(s), the presence of service and accommodation vessels, and the presence of partially decommissioned offshore elements. These decommissioning phase activities may combine to alter the seascape character of the area within the windfarm site and the perceived character of the wider seascape through the visibility of these decommissioning activities. These effects would however only occur during the decommissioning phase, beyond which decommissioning would prevent longer-term visual impact arising as the Project would be removed from the seascape.

18.426 The effects arising as a result of the decommissioning of the Project is assessed as being of the same magnitude and significance on all seascape character receptors as those arising due to their operation and maintenance, as assessed in **Section 18.6.3**, differing primarily as the effects being short-

term and temporary during the length of the decommissioning phase. There may also be some variation in appearance of the decommissioning activities, compared to the operation and maintenance phase, mainly due to the appearance of partially decommissioned offshore WTGs over the short-term and the influence of the decommissioning vessels in the seascape that would not be present during the operation and maintenance phase.

18.6.4.2 Effects on landscape character

18.427 The decommissioning of the Project has the potential to result in significant effects on the perceived character of the LCAs, designations and their special qualities scoped into the detailed assessment in **Table 18.35**.

18.428 Decommissioning phase effects on landscape character would occur as a result of the decommissioning activities, including the presence of jack-up vessels and/or heavy lift vessels during the decommissioning of foundation substructures, WTGs and OSP(s), the presence of service and accommodation vessels, and the presence of partially decommissioned offshore elements. These decommissioning phase activities may combine to alter the perceived character of the wider landscape through the visibility of these decommissioning activities. These effects would however only occur during the decommissioning phase, beyond which decommissioning would prevent longer-term visual impact arising as the Project would be removed from the seascape.

18.429 The effects arising as a result of the decommissioning of the Project is assessed as being of the same magnitude and significance on all landscape character receptors as those arising due to their operation and maintenance, as assessed in **Section 18.6.3**, differing primarily as the effects would be short-term and temporary during the length of the decommissioning phase. There may also be some variation in appearance of the decommissioning activities, compared to the operation and maintenance phase mainly due to the appearance of partially decommissioned offshore WTGs over the short-term and the influence of the decommissioning vessels during the decommissioning phase that would not be present during the operation and maintenance phase.

18.6.4.3 Effects on views and visual amenity

18.430 The decommissioning of the Project has the potential to result in significant effects on the views and visual amenity of the visual receptors scoped into the detailed assessment in **Table 18.35**.

18.431 Decommissioning phase effects on views and visual amenity would occur as a result of the decommissioning activities, including the presence of jack-up vessels and/or heavy lift vessels during the decommissioning of foundation

substructures, WTGs and OSP(s), the presence of service and accommodation vessels, and the presence of partially decommissioned offshore elements. These decommissioning phase activities may combine to alter the views and visual amenity through the visibility of these decommissioning activities. These effects would however only occur during the decommissioning phase, beyond which decommissioning would prevent longer-term visual impact arising as the Project would be removed from the seascape.

18.432 The effects arising as a result of the decommissioning of the Project is assessed as being of the same magnitude and significance on all viewpoints and visual receptors as those arising due to their operation and maintenance, as assessed in **Section 18.6.3**, differing primarily as the effects would be short-term and temporary during the length of the decommissioning phase. There may also be some variation in appearance of the decommissioning activities, compared to the operation and maintenance phase mainly due to the appearance of partially decommissioned offshore WTGs over the short-term and the influence of construction vessels during the decommissioning phase that would not be present during the operation and maintenance phase.

18.7 Cumulative effects

18.433 In order to undertake the CEA, and as per the PINS advice note (PINS, 2019), the potential for cumulative effects has been established considering each Project-alone effect (and the ZoI of each impact) alongside the list of plans, projects and activities that could potentially interact. These stages are detailed below.

18.7.1 Identification of potential cumulative impacts

18.7.1.1 Methodology

18.434 Part of the cumulative assessment process is the identification of which individual impacts assessed for the Project have the potential for a cumulative effect on receptors (impact screening). This information is set out in **Table 18.39**. All impacts identified in **Section 18.6** have the potential for a cumulative effect on receptors.

18.435 The CEA takes into account the impact associated with the Project together with other relevant plans, projects and activities. Cumulative effects are therefore the additional or combined effect of the Project in combination with the effects from other projects on the same receptor or resource. Refer to **Chapter 6 EIA Methodology** for the over-arching approach to the CEA and use of the PINS Advice Note Seventeen.

18.436 GLVIA3 (Landscape Institute and IEMA 2013, p120) also defines cumulative landscape and visual effects as those that *'result from additional changes to the landscape and visual amenity caused by the proposal in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.'*

18.437 NatureScot's guidance, Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot 2021) is widely used across the UK to inform the specific assessment of the cumulative effects of onshore and offshore windfarms. Both GLVIA3 and NatureScot's guidance provide the basis for the methodology for the cumulative SLVIA undertaken within this chapter. The NatureScot (2021) guidance defines:

- *"Cumulative effects as the additional changes caused by a Proposed Development in conjunction with other similar developments or as the combined effect of a set of developments taken together (NatureScot, 2021: p4);*
- *Cumulative landscape effects are those effects that 'can impact on either the physical fabric or character of the landscape, or any special values attached to it' (NatureScot, 2021, p10); and*

- *Cumulative visual effects are those effects that can be caused by combined visibility, which occurs where the observer is able to see two or more developments from one viewpoint and/or sequential effects which occur when the observer has to move to another viewpoint to see different developments" (NatureScot, 2021, p11)*

18.438 In line with PINS, NatureScot guidance and GLVIA3, cumulative effects are assessed in this SLVIA as the additional changes caused by the Project in conjunction with other similar developments (not the totality of the cumulative effect). The CEA assesses the cumulative effect of the proposed development with other projects (**Table 18.39**) against the current baseline (**Section 18.5**), with the assessment of significance apportioning the amount of the effect that is attributable to the Project. The additional contribution of the Project to the cumulative effect upon the baseline character/view is assessed and information provided on *'how the effects of the applicant's proposal would combine and interact with the effects of other development'* (PINS, 2019).

18.439 Adjacent developments may complement one another, or may be discordant with one another, and it is the contribution of the Project to these cumulative effects that is assessed in the CEA, such as through design discordance or proliferation of multiple developments affecting characteristics, views or new geographic areas. Judgements are made as to whether character changes are likely to occur because of multiple developments becoming a prevailing characteristic of the seascape or view.

18.7.1.2 Tiered approach to CEA

18.440 In accordance with PINS advice on CEA (PINS, 2019), NatureScot guidance (NatureScot, 2021) and GLVIA3 (para 7.13) (Landscape Institute, 2013), existing projects and those which are under construction (see **Table 18.39**) are included and described as part of the SLVIA baseline conditions, including the extent to which these have altered character and views, and affected sensitivity to windfarm development. As such, the main assessment set out in **Section 18.6** has considered the additional effect of the Project in conjunction with a baseline that includes existing operational and under-construction projects. This includes assessment of the Project against magnitude factors such as its size, scale, spread and landscape context, as well as cumulative effect factors relating to the operational and under-construction windfarms, such as its increase in spread, aesthetic relationship, and contrasts of size and spacing of WTGs of the projects.

18.441 This CEA sets out a further assessment of the additional cumulative seascape, landscape and visual effects of the Project with other potential future projects.

18.442 In undertaking this CEA for the Project, it is important to bear in mind that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside the Project. Therefore, a tiered approach has been adopted in line with PINS advice on CEA (PINS, 2019). This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the projects' parameters. The tiered approach that has been utilised within the CEA employs the following tiers (PINS, 2019):

- Tier 1 assessment – all permitted and submitted applications, whether under the Planning Act 2008 or other regimes, but not yet implemented[2]
- Tier 2 assessment – projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted
- Tier 3 assessment – projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted; identified in the relevant Development Plan (and emerging Development Plans) recognising that there will be limited information available on the relevant proposals; and identified in other plans and programmes that set the framework for future development consents/approach, where such development is reasonably likely to come forward

18.7.2 Identification of other plans, projects and activities

18.443 The identification and review of the other plans, projects and activities that may result in cumulative effects for inclusion in the CEA (described as 'project screening') was undertaken alongside an understanding of Project-alone effects.

18.444 All projects considered for CEA across all topics have been identified within **Appendix 6.1 CEA Project Long List** of **Chapter 6 EIA Methodology**, which forms an exhaustive list of plans, projects and activities relevant to the Project.

18.445 Those included in the overall short list for the CEA have then been subject to a screening exercise specific to potential cumulative impacts on seascape, landscape and visual receptors (**Table 18.39**). Each project or plan has been considered on a case-by-case basis for screening in or out of this CEA assessment based upon data confidence, effect-receptor pathways and the

[2] Under construction projects are considered as part of the baseline conditions in line with GLVIA3

spatial/temporal scales involved. Projects screened into the CEA with potential for cumulative impact interactions for seascape, landscape and visual receptors are mapped in the cumulative search area base plan compiled within the 60km SLVIA study area (**Figure 18.18**). The specific projects scoped into the CEA for seascape, landscape and visual receptors, are set out in **Table 18.39**.

Table 18.39 Summary of projects considered for the CEA in relation to the SLVIA

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
Baseline - Operational and under-construction projects that are part of the baseline and considered as part of main SLVIA assessment set out in **Section 18.6.**					
South Morecambe DP3 and DP4 (gas platforms)	Decommissioned	N/A	0 - 5.1	N	Gas platform and jacket decommissioning activities completed in 2023 with no above ground infrastructure remaining.
Oil and gas infrastructure, including platforms and associated cables and pipelines for Calder, South Morecambe and North Morecambe gas fields	Operational	Existing oil and gas infrastructure	Nearest surface infrastructure is located 0.9km to the west of the windfarm site	N	Considered as part of the baseline conditions in assessment of Project potential effects (**Section 18.6**) and for the CEA in **Section 18.7.3**.
Telecom cables, including: ▪ Vodafone Lanis 1 ▪ EXA Atlantic ▪ Sirius South ▪ Rockabill ▪ Havhingsten ▪ Hibernia 'C', Atlantic, ESAT 2 ▪ Isle of Man/UK Interconnector	Operational	Existing sub-sea telecommunications and electrical cables	0 – 5.0		

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
Aggregate production areas: ▪ Liverpool Bay aggregate production area (Area 457) ▪ Liverpool Bay aggregate exploration and option area (Area 1808) ▪ Hibre Swash Aggregate Production Area	Open	Existing aggregate production areas	9.7 – 29.0		
Disposal grounds: ▪ IS205 Barrow D Disposal Area ▪ Site Y Disposal Area ▪ Size Z Disposal Area ▪ Morecambe Bay: Lune Deep Disposal Area	Open	Active disposal ground	16.8 – 30.1		
West of Duddon Sands Offshore Windfarm	Operational	40 WTGs x 150m blade tip height (120m rotor diameter)	12.9		
Walney Extension IV Offshore Windfarm	Operational	47 WTGs x 188m blade tip height (154m rotor diameter)	18.8		
Walney I Offshore Windfarm	Operational	51 WTGs x 137m blade tip height (107m rotor diameter)	20.3		

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
Barrow Offshore Windfarm	Operational	30 WTGs x 120m blade tip height (90m rotor diameter)	21.0		
Walney II Offshore Windfarm	Operational	51 WTGs x 150m blade tip height (120m rotor diameter)	22.7		
Walney Extension 3 Offshore Windfarm	Operational	40 WTGs x 195m blade tip height (164m rotor diameter)	26.4		
Ormonde Offshore Windfarm	Operational	30 WTGs x 153m blade tip height (126m rotor diameter)	27.0		
Gwynt y Môr Offshore Windfarm	Operational	160 WTGs x 133m blade tip height (107m rotor diameter)	28.9		
Burbo Bank Extension Offshore Windfarm	Operational	32 WTGs x 187m blade tip height (164m rotor diameter)	29.1		
Burbo Bank Offshore Windfarm	Operational	25 WTGs x 143.5m blade tip (107m rotor diameter)	33.4		
North Hoyle Offshore Windfarm	Operational	30 WTGs x 107m blade tip height (80m rotor diameter)	36.3		
Rhyl Flats Offshore Windfarm	Operational	25 WTGs x 133.5m blade tip height (107m rotor diameter)	40.0		
Hillhouse Waste Water Treatment Works Onshore Wind Cluster	Operational	2 WTGs x 61m blade tip height (52m rotor diameter)	41.0		

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
Haverigg II and III Onshore Windfarm	Operational	8 WTGs. 4 WTGs x 62.6m blade tip height (Haverigg II) and 4 WTGs x 76m blade tip height (Haverigg III)	42.3		
Heysham Port Onshore Windfarm	Operational	1 WTG x 77m blade tip height	43.9		
Seaforth Onshore Windfarm	Operational	5 WTGs x 72m blade tip height	44.3		
Port of Liverpool Onshore Windfarm	Operational	4 WTGs x 125m blade tip height	47.2		
United Utilities Fazakerly Wind Turbine	Operational	1 WTG x 78m blade tip height (56m rotor diameter)	50.3		
Simonswood Industrial Estate	Operational	1 WTG x 102m blade tip height (54m rotor diameter)	50.5		
Kirkby Moor Onshore Windfarm	Operational	12 WTG x 42m blade tip height (34m rotor diameter)	50.8		
Kingspan Single Turbine	Operational	1 WTG x 78m blade tip height (56m rotor diameter)	55.9		
Pen Y Bryn Onshore Windfarm	Operational	2 WTGs x 52m blade tip height (27m rotor diameter)	59.3		

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
Tier 1 - all permitted and submitted applications, but not yet implemented					
Awel y Môr Offshore Windfarm	Consented.	34 WTGs x 332m blade tip height (306m rotor diameter), offshore substations, offshore and onshore export cables, onshore substation and connection infrastructure into the National Grid.	28.9	Y	Visual effects considered as part of the Tier 1 CEA in **Section 18.7.3.2**.
Tier 2 - Scoping Report submitted and on Planning Inspectorate programme of projects					
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	Pre-application stage. PEIR published in October 2023.	Transmission assets for the Morgan and Morecambe offshore windfarm projects, including OSP(s), Morgan offshore booster station, offshore and onshore export cables, onshore substations and onshore connection infrastructure into the National Grid.	0	Y	Visual effects considered as part of the Tier 2 CEA in **Section 18.7.3.2**. OSP(s) for the Project (up to 2) are assessed as part of the potential impacts of the Project in **Section 18.6**.
Mona Offshore Wind Project	Pre-application stage. PEIR submitted in 2023.	Windfarm in the Irish Sea with capacity of up to 1500MW, awarded as part of the Round 4 Offshore Wind Licensing Arrangements.	10.0	Y	Visual effects considered as part of the Tier 2 CEA in **Section 18.7.3.2**.

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
		WTGs, foundations, and OSP(s) located within the Mona array PEIR boundary. Up to 67 WTGs with a maximum blade tip height of up to 324m above Lowest Astronomical Tide (LAT) and maximum rotor diameter of up to 280m. Four OSPs. The WTGs would be lit and marked as required for aviation and navigation purposes.			
Morgan Offshore Wind Project Generation Assets	Pre-application stage PEIR published in 2023.	Windfarm in the Irish Sea with capacity of up to 1500MW, awarded as part of the Round 4 Offshore Wind Licensing Arrangements. WTGs, foundations, and OSP(s) located within the Morgan Array PEIR Boundary. Up to 68 WTGs with a maximum blade tip height of up to 324m above LAT and maximum rotor diameter of up to 280m. Four OSPs. The WTGs would be lit and marked as required for	16.7	Y	Visual effects considered as part of the Tier 2 CEA in **Section 18.7.3.2**.

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
		aviation and navigation purposes.			
Mooir Vannin Offshore Windfarm	Scoping Report published October 2023	A maximum of 100 WTGs with a maximum blade tip height of 389m (above LAT).	43.7	Y	Visual effects considered as part of the Tier 2 CEA in **Section 18.7.3.2**.
Tier 3 - Scoping Report not yet submitted and on Planning Inspectorate programme of projects or identified in the relevant Development Plan or programmes set for framework of future development					
Carbon Capture Storage Area (EIS Area 1)	Licences awarded in 2023 (see Morecambe Net Zero Cluster Project below)	Unknown	0	N	Licence area noted and awarded to Spirit Energy (the project considers repurposing the North and South Morecambe natural gas fields to create a carbon storage cluster). Exploration surveys are being undertaken (2024), however, project timescales are unknown and there are no specific details of associated offshore works. It is possible existing infrastructure would be used and there would be minimal visual effects.
Morecambe Net Zero Cluster Project (carbon storage cluster)	Early planning				
Gateway Gas Storage Project	On hold	N/A	4.1	N	Project considered, however insufficient information available as the Project has been on hold since 2010.

Project	Status	Project Maximum Design Scenario	Distance from the windfarm site (km)	Screened into the CEA (Y/N)?	Rationale
Carbon Capture Storage Licence (CS004)	Licenced in 2020	N/A	7.5	N	Licence area linked to the HyNet North West project. Applications for the HyNet Carbon Dioxide pipeline and HyNet North West Hydrogen Pipeline projects encompass onshore works only and there are no specific details of associated offshore works, however it is possible existing infrastructure would be used and there would be minimal visual effects.
Welsh Government Pre-assessed Areas for Onshore Wind Energy – Development Region 1	Plan – part of National Development Framework	Pre-Assessed Areas for Wind Energy are defined by Future Wales (the National Development Framework) as areas where there is a presumption in favour of large-scale wind energy development.	Approx. 53	N	Considered but not assessed further in CEA as no information on specific projects within this development region available.

18.7.3 Assessment of cumulative impacts

18.446 Having established the residual effects from the Project with the potential for a cumulative effect, along with the other relevant plans, projects and activities, the following sections provide an assessment of the level of cumulative effect that may arise. These are assessed below in groups of Tiers.

18.447 Given the interconnected nature of the Project and the Transmission Assets, a separate 'combined' assessment of these is provided within the CEA (**Section 18.7.3.1**). Thereafter, the cumulative assessment considers all plans, projects and activities screened into the CEA (**Section 18.7.3.2**).

18.7.3.1 Cumulative assessment – the Project and Transmission Assets (combined assessment)

18.448 While the Transmission Assets[3] are considered in a separate ES as part of a separate DCO Application (combined with the Morgan Offshore Wind Project Transmission Assets), given the functional link, a 'combined' assessment has been made considering both the Project and the Transmission Assets. This provides an assessment of impact interactions and additive effects and thus any change in the significance of effects as assessed separately.

18.449 The Transmission Assets PEIR (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023) informs the assessment.

18.450 The elements of the Transmission Assets that have the potential to interact with the Project in relation to SLVIA, include:

- Export cables adjoining the Morgan Offshore Wind Project Generation Assets and the Project and making landfall south of Blackpool
- Booster station required for the Morgan Offshore Wind Project
- OSP(s) (for the Project and Morgan Offshore Wind Project)
- Onshore cables for the Morecambe Offshore Windfarm and Morgan Offshore Wind Project
- Onshore substation for the Morecambe Offshore Windfarm and Morgan Offshore Wind Project

[3] As the Transmission Assets includes infrastructure associated with both the Project and the Morgan Offshore Wind Project Generation Assets, it should be noted that the combined assessment considers the transmission infrastructure for both the Project and the Morgan Offshore Wind Project Generation Assets (and includes all infrastructure as described in the Transmission Assets PEIR).

18.451 The following (project-alone) impacts were concluded in the Transmission Assets PEIR (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023a):

- Seascape and landscape character: offshore infrastructure – **Negligible** to **Moderate adverse** effect (not significant in EIA terms)

  Onshore landscape charater: onshore substation – **Negligible** to **Major adverse** effect (significant in EIA terms)

- Onshore landscape charater: onshore cable – **Negligible** to **Moderate adverse** effect (not significant in EIA terms)
- Visual: onshore substation – **Negligible** to **Major adverse** effect (significant in EIA terms)
- Visual: onshore cable and landfall – **Negligible** to **Major adverse** (significant in EIA terms)

18.452 There is potential for the Morgan and Morecambe OSP(s) and the Morgan offshore booster station (due the position of its search area in the vicinity of the Project windfarm site (**Figure 18.18**) to be viewed together with the Project during the operational phase. However, given the scale of the Transmission Assets in relation to the Project WTGs the effects are not considered to be elevated above those assessed separately for the Project, noting the minimal contribution of the Transmission Assets to additive effects. Cumulative effects are considered to be more likely to materialise considering all plans and projects screened into the CEA and as such are assessed in further detail in **Section 18.7.3.2**.

18.453 There is also potential for the Morgan and Morecambe onshore and offshore export cables to contribute to cumulative effects with the Project during construction on receptors in the vicinity of the cable landfall point between Lytham St Anne's and Blackpool. However, there is no impact during the operational phase as cables would be buried onshore and offshore.

18.454 Considering the transient nature of construction works and maintenance activities for the offshore export cables, no significant additive effects have been identified, and assessments made for the Project and the Transmission Assets are not considered to be elevated above that assessed separately.

18.455 There is potential for the Morgan and Morecambe onshore export cable corridor to contribute to cumulative effects with the Project during construction on receptors in the vicinity of the landfall point near Blackpool Airport. The landfall, where the offshore export cable comes onshore would be installed by horizontal directional drilling (HDD) (or equivalent trenchless technique) from a location at or near Blackpool Airport (Figure 1.4 of Chapter 1: Seascape, landscape and visual resources (Volume 4) of the Transmission Assets PEIR).

This would pass beneath the railway and sand dunes and would require an HDD compound at or near the airport, and an exit pit above Mean High Water Springs (MHWS). From a point above MHWS, either HDD (or equivalent trenchless technique) or open cut trenching may be used to reach the entry point at Mean Low Water Springs (MLWS). This activity falls entirely within LCA 19a Coastal Dunes – Fylde Coast Dunes.

18.456 The construction activities associated with the landfall and onshore export cable route would generally only cause disruption during the temporary construction phase. Once operational, the cable would be hidden underground with only inspection covers visible at the joint bays and link boxes. There is potential for cumulative effects on LCA 19a Coastal Dunes – Fylde Coast Dunes due to the direct effects of the landfall construction activities and the indirect effects of the construction, and operation and maintenance of the Project windfarm site. Cumulative landscape effects are likely to occur to the perceived character of this part of the LCA and cumulative visual effects are likely to be experienced by people using the beach for leisure and recreation, where the construction of the cable landfall would be prolonged and disruptive, with compounds and construction vehicles being prominent features in views from the beach, experienced in combination with views of the construction of the Project windfarm site out to sea. The cumulative effect is assessed to be **significant** (major/moderate) and of local spatial extent within this LCA experienced by people using the beach for leisure and would be of short-term duration within the construction period.

18.457 Cumulative impacts due to the cable landfall construction may also be experienced by people using the Lancashire Coastal Way, people driving and residing along Clifton Drive North, and people visiting Lytham St Anne's LNR. Cumulative impacts on these receptors during construction work would however be minimal and **not significant**, as the onshore export cables would be installed underground from a location on or near the airport (with an exit pit above MHWS at the top of the beach) and the landfall activities and Project windfarm site would be screened by intervening sand dunes, therefore the Project has limited contribution to the cumulative effect.

18.458 There is very limited potential for the Morgan and Morecambe onshore substations (and inland sections of the onshore cable route) to result in cumulative effects with the Project as they are located well inland onshore, with different receptors impacted compared to those impacted by the Project windfarm site. There is very limited potential for combined or sequential visibility of the substations and the Project windfarm site, as evident in the preliminary ZTVs for the Morgan and Morecambe onshore substations (Figure 1.2 and 1.3 of the Transmission Assets PEIR (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023a)).

18.7.3.2 Cumulative assessment – All plans and projects

Tier 1

Introduction

18.459 The Tier 1 CEA assessment considers all permitted and submitted applications that are not yet implemented within the SLVIA study area, as listed in **Table 18.39** and shown in **Figure 18.18**.

18.460 There is only one Tier 1 project within the SLVIA study area with potential for cumulative impacts with the Project on seascape, landscape and visual receptors. An order granting development consent for Awel y Môr Offshore Windfarm was made by the Secretary of State in September 2023. The maximum design scenario for Awel y Môr Offshore Windfarm consists of 34 WTGs x 332m blade tip height (306m rotor diameter) located 28.9km from the Project windfarm site and 10.6km from the closest point of the North Wales coast. It is located to the west of the operational Gwynt y Môr Offshore Windfarm (Figure 18.18).

18.461 The screening assessment in **Table 18.39** has identified that there is potential for the operation and maintenance phase of Awel y Môr Offshore Windfarm to overlap with the Project's operation and maintenance phase, and potential for the construction phases to overlap between 2027 – 2030, leading to potential cumulative impacts on seascape, landscape and visual receptors.

18.462 The effects identified are considered as being possible to arise only if Awel y Môr Offshore Windfarm becomes operational, however it is the case that application stage projects may not ultimately be built in the form that they are submitted, or may not be built at all, introducing some uncertainty that effects assessed in the Tier 1 assessment may not arise in full.

18.463 The Tier 1 CEA considers the additional cumulative effect of the Project with Awel y Môr Offshore Windfarm, with the assessment of significance apportioning the amount of the effect that is attributable to the Project.

18.464 The potential for cumulative effects arising in the Tier 1 assessment on views and visual amenity, and perceived effects on seascape and landscape character, is informed by the assessments undertaken in the assessment of potential Project impacts in **Section 18.6**. The potential cumulative effects arising with Awel y Môr Offshore Windfarm are a subset of those considered for the Project-alone. This is because some of the potential impacts identified and assessed for the Projects alone, are of low or negligible magnitude, or localised geographic extent and temporary in nature, and therefore have limited potential to interact significantly with changes associated with other projects.

18.465 The contribution of the Project to the Tier 1 cumulative effect with Awel y Môr Offshore Windfarm on views/visual amenity, seascape and landscape character is described for each broad geographic region within the SLVIA study area with reference to representative viewpoints on these coastlines and the cumulative wireline visualisations presented in **Figure 18.24 – 18.47**.

North Wales

18.466 The potential impacts identified and assessed for the Project-alone on receptors in North Wales (where Awel y Môr Offshore Windfarm has most potential to effect) are of negligible or low magnitude and not significant (as assessed in **Section 18.6**). It is considered that these potential impacts have limited potential to interact with changes associated with Awel y Môr Offshore Windfarm. This is primarily due to the distance of the Project off the North Wales coast (45-60km) and its position in the background to existing operational offshore windfarms off North Wales, and Awel y Môr Offshore Windfarm, behind which they are almost entirely subsumed.

18.467 The Awel y Môr Offshore Windfarm cumulative ZTV in **Figure 18.21** shows the potential geographic extent of combined theoretical visibility of the Project with Awel y Môr Offshore Windfarm. Although this appears to show potential for a wide zone of combined visibility, views from the North Wales coast are substantially influenced by existing operational offshore windfarms in the baseline and would be further affected by the additional influence of Awel y Môr Offshore Windfarm at closer range in the Tier 1 scenario.

18.468 Awel y Môr Offshore Windfarm is shown in the wireline visualisations from North Wales in Viewpoint 17 Talacre Beach (**Figure 18.40**), Viewpoint 18 Prestatyn (**Figure 18.41**), Viewpoint 19 Bryn Llwyn (**Figure 18.42**), Viewpoint 20 Graig Fawr (**Figure 18.43**), Viewpoint 21 Rhos Point (**Figure 18.44**), Viewpoint 22 Llandudno (**Figure 18.45**) and Viewpoint 23 Great Orme (**Figure 18.46**) in North Wales.

18.469 The cumulative wirelines from these viewpoints illustrate that there would be potential for the Project to be visible in combination with Awel y Môr Offshore Windfarm (as well as the baseline operational offshore windfarms), located to the north in the same part of the offshore views. The Project would form a visually recessive distant element at 45–50km in the context of the visually more pronounced Awel y Môr Offshore Windfarm. Awel y Môr would be visible at closer proximity (approximately 12-27km) and larger vertical scale in these representative views from the North Wales coast, contributing more to the cumulative effect, whilst the Project would be subsumed behind Awel y Môr in views from the west, and behind Gwynt y Môr, Rhyl Flats and North Hoyle in views from the east. The Project would appear more distant and recessive, introducing elements that are characteristic in the receiving view with a similar

form and which would appear notably smaller in apparent scale due to their longer distance from viewpoints in North Wales.

18.470 The contribution of the Project to the cumulative effect with Awel y Môr Offshore Windfarm on views and visual amenity experienced from the North Wales coastline within the SLVIA study area is assessed as being of low to negligible magnitude. Consequently, even for receptors of high sensitivity at the coast or within AONBs, its resulting contribution to the cumulative effect on views and perceived character of the seascape off the North Wales coast is assessed as being **not significant** (moderate/minor), reducing further for receptors of lower sensitivity to change.

Merseyside

18.471 Similarly low to negligible levels of magnitude of change and **not significant** (minor) contribution to the cumulative effect with Awel y Môr Offshore Windfarm would occur in views from the Wirral, such as representative views from Viewpoint 15 Fort Perch Rock (**Figure 18.38**) and Viewpoint 16 Hoylake (**Figure 18.39**) for similar reasons to those assessed for North Wales. The Project would be located over 45km from the Wirral coast, appearing in the background behind or in the context of Burbo Bank and Burbo Bank Extension Offshore Windfarms, and Awel y Môr is viewed behind North Hoyle and Gwynt y Môr at long range, such that they have limited potential to interact and both contribute small amounts to the low levels of cumulative change arising in the Tier 1 scenario. The coast and hinterland of the Wirral are also largely urbanised between New Brighton, Birkenhead, Moreton and Hoylake, with low to negligible levels of change to the perceived seascape and landscape character and **not significant** (minor) contribution to the cumulative effect seascape and landscape receptors.

18.472 Low to negligible levels of magnitude of change and **not significant** (minor) contribution to the cumulative effect with Awel y Môr Offshore Windfarm would occur in views from the Sefton coast, such as representative views from Viewpoint 14 Crosby (**Figure 18.37**), Viewpoint 12 Formby Point (**Figure 18.35**) and Viewpoint 11 Southport Pier (**Figure 18.34**). Although the Project would introduce a separate offshore windfarm influence on the sea skyline in a new part of the view that is currently free of windfarm influence, it would still be between 34–43km from the Sefton coast and critically, Awel y Môr Offshore Windfarm would be located at even longer distance subsumed behind the extensive array of intervening operational offshore windfarms (Burbo Bank, Burbo Bank Extension and Gwynt y Môr), such that they have limited potential to interact and result in low levels of cumulative change in the Tier 1 scenario. The coast and hinterland of the Sefton are also largely urbanised between Crosby, Formby and Southport, with low to negligible levels of magnitude of change to the perceived seascape and landscape character and **not**

significant (minor) contribution to the cumulative effect on seascape and landscape receptors.

North-West England

18.473 Awel y Môr Offshore Windfarm is located over 50km from the closest southern part of the Fylde coastline near Lytham St Anne's (Viewpoint 10, **Figure 18.33**) and 54km from Blackpool (Viewpoint 9, **Figure 18.32**). Although there is potential for combined theoretical visibility, as shown in the wirelines a small amount of the rotors and upper towers of Awel y Môr Offshore Windfarm may be visible beyond the horizon at long distance and small scale, during infrequent periods of excellent visibility. The cumulative effect of the Project is likely to be imperceptible for the large majority of the time due to the lack of visibility of Awel y Môr Offshore Windfarm at such long range. The Project and Awel y Môr Offshore Windfarm therefore have limited potential to interact and result in low to negligible levels of cumulative change and **not significant** (minor) cumulative effects in the Tier 1 scenario on the visual amenity and perceived seascape and landscape character of the Fylde coastline (which is also extensively urbanised between Lytham St Anne's, Blackpool and Fleetwood).

18.474 The contribution of the Project to the cumulative effect with Awel y Môr on views/visual amenity and perceived seascape and landscape character of the coastline of the Heysham area of Lancaster District, Barrow-in-Furness (including Walney Island) and the southern LDNP fells and its coastline is assessed as **not significant** (none) with zero magnitude of change arising due to the distance of Awel y Môr Offshore Windfarm over 70km from Walney Island (Viewpoint 5, 80km from Heysham (Viewpoint 7) and 88km from the southern LDNP fells (Viewpoint 1 Black Combe).

Tier 2

Introduction

18.475 The Tier 2 CEA considers all projects within the SLVIA study area with a Scoping Report submitted on the Planning Inspectorate programme of projects, and those with a published PEIR, as listed in **Table 18.39** and shown in **Figure 18.18**. This consists of the Mona Offshore Wind Project, the Morgan Offshore Wind Project Generation Assets and the Transmission Assets, as well as all projects considered in Tier 1 (permitted and submitted applications that are not yet implemented). Mooir Vannin Offshore Wind Farm is also considered within the Tier 2 CEA.

18.476 The Transmission Assets project (for which a Scoping Report was published in October 2022 and a PEIR published in October 2023) includes the OSP(s) for both projects, a proposed Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV

cables and associated grid connection infrastructure. The Morecambe OSPs (up to two) that form part of the Transmission Assets are also assessed as part of the potential impacts of the Project in **Section 18.6**[4] and are not considered separately within this Tier 2 CEA.

18.477 There is potential for the Morgan offshore booster station to contribute to some limited additional cumulative effects with the Project due to the position of its search area in the vicinity of the Project windfarm site (**Figure 18.18**). These effects are considered further in the following Tier 2 CEA for receptors within each region of the study area. There is also potential for the Morgan and Morecambe onshore export cables to contribute to cumulative effects with the Project during construction on receptors in the vicinity of the landfall point between Lytham St Annes and Blackpool. These effects are considered further in the following Tier 2 CEA for the North-West England region of the study area.

18.478 There would be limited effects during construction of the offshore export cables of the Transmission Assets due to their temporary and transient nature, and no potential for cumulative operational effects with the offshore export cables for the Transmission Assets as these are sub-sea (and therefore have no operational impact).

18.479 There is also very limited potential for the Morgan and Morecambe onshore substations (and inland sections of the onshore cable route) to result in cumulative effects with the Project, as they are located well inland onshore, with different receptors impacted compared to those impacted by the Project windfarm site. There is very limited potential for combined or sequential visibility of the substations and the Project windfarm site, as evident in the preliminary ZTVs for the Morgan and Morecambe onshore substation (Figure 1.2 and 1.3 of the Transmission Assets PEIR (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023a)).

18.480 The Tier 2 CEA also considers the additional cumulative effect of the Project with Mona Offshore Wind Project and the Morgan Offshore Wind Project (Generation Assets). In accordance with the Round 4 leasing, the anticipated nominal capacity of each project is 1.5GW. Separate consent applications will be submitted by Mona Offshore Wind Limited and Morgan Offshore Wind Limited respectively for each project. The EIA Scoping Reports for the Mona Offshore Wind Project and the Morgan Offshore Wind Project (Generation Assets) were submitted to The Planning Inspectorate and Natural Resources

[4] In addition, OSP(s) for the Morgan Wind Project are also in the scope for the Morgan Wind Project (Generation Assets) Scoping Report and PEIR.

Wales in May/June 2022, and the PEIRs for the Mona Offshore Wind Project and the Morgan Offshore Wind Project (Generation Assets) were published in April 2023.

18.481 The Morgan Array Area, is located in the Eastern Irish Sea, approximately 22km from the Isle of Man and 37km from the northwest coast of England (**Figure 18.18**).

18.482 The Mona Array Area, is also located in the Eastern Irish Sea, approximately 30km from the Anglesey coastline, 40km from the northwest coast of England, and 33km from the Isle of Man (**Figure 18.18**).

18.483 Both projects consist of offshore WTGs, foundations and OSP(s) located within the respective Morgan Array Area and Mona Array Area (**Figure 18.18**). Each project has a project design envelope consisting of four OSPs and up to 68 WTGs with a maximum blade tip height of up to 324m above LAT, and maximum rotor diameter of up to 280m. Worst-case scenario layouts from the PEIRs for the Mona Offshore Wind Project and Morgan Offshore Wind Project (Generation Assets) have been used as the basis for the CEA and are shown in **Figure 18.18**. The WTGs would be lit and marked as required for aviation and navigation purposes.

18.484 Mooir Vannin Offshore Wind Farm would comprise an offshore array of 100 WTGs, or fewer, with a maximum blade tip height of 389m (above LAT) (Ørsted, 2023) contained within the Agreement for Lease (AfL) area off the Isle of Man (**Figure 18.18**).

Certainty and data confidence

18.485 The cumulative landscape and visual effects of scoping stage sites are not generally considered in CEAs for onshore windfarm development, in line with best practice guidance (NatureScot, 2021), which states that:

'An assessment of cumulative impacts associated with a specific development proposal should encompass the effects of the proposal in combination with:

- *existing development, either built or under construction*
- *approved development, awaiting implementation*
- *proposals awaiting determination within the planning process with design information in the public domain. Proposals and design information may be deemed to be in the public domain once an application has been lodged, and the decision-making authority has formally registered the application'*

18.486 This guidance generally recommends cumulative assessment goes only as far as assessing projects where an application has been lodged, however, it does also state that *'occasionally it may be appropriate to include proposals*

which are in the early stages of development in an assessment, particularly where clusters of development or "hotspots" emerge. However, a degree of pragmatism is required to enable proposals to progress to determination'.

18.487 GLVIA3 (Landscape Institute, 2013) also supports the approach of assessing projects with planning consent and those that are subject of a valid planning application, stating (7.14) that *'schemes that are at the pre-planning or scoping stage are not generally considered in the assessment of cumulative effects because of uncertainty about what will actually occur, that is, it is not 'reasonably foreseeable''.*

18.488 GLVIA3 does however note, that *'there may be occasions where such schemes may be included in the assessment if the competent authority or consultation bodies consider this to be necessary. Such a request should only be made if absolutely necessary to make a realistic assessment of potential cumulative effects'.*

18.489 Offshore specific guidance (PINS, 2019) recommends that projects where a scoping report has been submitted are considered in the CEA within the Tier 2 assessment, while also recognising that there is a decreasing level of detail likely to be available moving from Tier 1 to Tier 3. There is less certainty in terms of the whether the effects assessed in a Tier 2 CEA would materialise or occur to the level assessed in the CEA, given the uncertainty of the consent, the limited amount of information available on which to base assessments and the potential for project design envelopes to change during the application and consenting process.

18.490 Cumulative ZTV mapping of the Morgan Offshore Wind Project (Generation Assets) and Mona Offshore Wind Project and are presented respectively in **Figure 18.22** and **Figure 18.23**. The PEIR WTG layouts for these projects are also shown in the wirelines in **Figures 18.24** to **18.47**. The lateral extent of the Mooir Vannin Offshore Wind Farm is also indicated in the wirelines in **Figures 18.24** to **18.47** however the WTG layout is not shown due its status at Scoping.

18.491 As per the Tier 1 CEA, the potential cumulative effects arising with Mona Offshore Wind Project, the Morgan Offshore Wind Project (Generation Assets), Transmission Assets and the Mooir Vannin Offshore Wind Farm are a subset of those considered for the Project alone. The CEA is therefore informed by the Project-alone assessments undertaken in **Section 18.6**, with Project-alone effects of low or negligible magnitude having limited potential to interact significantly with changes associated with other projects.

18.492 The contribution of the Project to the Tier 2 cumulative effect with Morgan and Mona Offshore Wind Projects, the Transmission Assets and the Mooir Vannin Offshore Wind Farm on views/visual amenity and seascape and landscape character is described for each broad geographic region within the SLVIA

study area with reference to representative viewpoints on these coastlines and the cumulative wireline visualisations presented in **Figure 18.24 – 18.47**.

North Wales

18.493 The Mooir Vannin Offshore Wind Farm would be located over approximately 79km from the North Wales coastline (Isle of Anglesey) and due to the distance, would not contribute to cumulative effects with the Project on receptors in North Wales.

18.494 Morgan Offshore Wind Project (Generation Assets) is located approximately 56km from the Isle of Anglesey its closest point to the North Wales coastline, and 65km from the closest representative North Wales viewpoint in the SLVIA study area at Great Orme Head (Viewpoint 23, **Figure 18.46**). Due to its distance offshore and the predicted lack of visibility of the WTGs at such long range, the Morgan Offshore Wind Project (Generation Assets) would have negligible to zero contribution to the cumulative effect experienced from North Wales during both construction and operation and maintenance phases and is scoped out of further assessment of cumulative impacts on seascape, landscape and visual receptors in North Wales. A 50km SLVIA study area is assessed in the Morgan Scoping Report (bp/EnBW, June 2022) and the Planning Inspectorate Scoping Opinion (PINS, 2022) agrees to scope out impacts beyond the study area and that no significant effects are likely to occur beyond it. The Morgan PEIR concluded that the nationally designated landscapes in Wales fall beyond the study area of Morgan WTG array and that although it may be possible on those days with the clearest visibility to see the wind turbine array from the higher land in Wales, the effects of Morgan Offshore Wind Project (Generation Assets) would not be significant in receptors in Wales, due to distance.

18.495 The Morgan offshore booster station may potentially be located to the north or to the east of the Project windfarm site, within the Morgan offshore booster station search area, and may therefore be visible in the vicinity of the Project windfarm site in views from the North Wales coast. Due to the long distance of both the windfarm site (over 45km) and the Morgan offshore booster station (46km), and the relatively small scale and limited visibility of the offshore booster station at such long range in views from North Wales, together with the baseline context of other offshore windfarm infrastructure out to sea, the contribution of the Morgan offshore booster station to the cumulative effect on receptors in North Wales is likely to be negligible.

18.496 The offshore export cables of the Morgan and Morecambe Offshore Wind Farms Transmission Assets are sub-sea so there is no potential for operational cumulative effects on receptors in North Wales and only intermittent and limited maintenance activities. There is also no potential for the Project to have cumulative effects on receptors in North Wales with the

Morgan and Morecambe onshore substations and onshore export cables, due to the distance of their location in Fylde District in North-West England, which means that different receptors are impacted.

18.497 The contribution of the Project to the cumulative effect on receptors in North Wales would occur mainly in addition with Mona Offshore Wind Project, while its contribution to cumulative effects with the other Tier 2 projects (Morgan Offshore Wind Project (Generation Assets), Morgan and Morecambe Offshore Wind Farm Transmission Assets and Mooir Vannin Offshore Wind Farm) is negligible.

18.498 Mona Offshore Wind Project is located approximately 28km from the Isle of Anglesey its closest point to the North Wales coastline, and 29km from the closest representative North Wales viewpoint in the SLVIA study area at Great Orme's Head (Viewpoint 23, **Figure 18.46**). It has potential to contribute to cumulative effects on seascape, landscape and visual receptors during construction (likely occurring at same time for Mona and Morecambe) and during operation and maintenance. These effects may occur mainly from the Isle of Anglesey to the west of the North Wales coastline in the SLVIA study area, where Mona is closer to the coast and would be viewed as an additional offshore windfarm on the sea skyline, extending the lateral spread of WTGs into the open sea to the west of Awel y Môr Offshore Windfarm. The Project would be viewed at greater distance, over 55km from the Anglesey coastline, subsumed behind Mona, and therefore would have negligible levels of change and result in a **not significant** (minor) contribution to the cumulative effect with Tier 2 projects on seascape, landscape and visual receptors/views from Anglesey during construction and operation and maintenance.

18.499 In views from the North Wales coast between Point of Ayr and Great Orme Head, the Project and Mona Offshore Wind Project would both be viewed in the distant background subsumed behind the existing WTG arrays of North Hoyle, Rhyl Flats and Gwynt y Môr offshore windfarms and the Tier 1 Awel y Môr Offshore Windfarm in the foreground seascape. The Project would be viewed at greater distance than Mona Offshore Wind Project, and partially behind it in views from Colwyn Bay/Ormes Bay. The Project would have low to negligible levels of change and result in a **not significant** (minor) contribution to the cumulative effect with Tier 2 projects on seascape, landscape and visual receptors/views from the North Wales coast between Point of Ayr and Great Orme during construction and operation and maintenance phases. This includes representative views from Viewpoint 17 Talacre Beach (**Figure 18.40**), Viewpoint 18 Prestatyn (**Figure 18.41**), Viewpoint 19 Bryn Llwyn (**Figure 18.42**), Viewpoint 20 Graig Fawr (**Figure 18.43**), Viewpoint 21 Rhos Point (**Figure 18.44**), Viewpoint 22 Llandudno (**Figure 18.45**) and Viewpoint 23 Great Orme (**Figure 18.46**).

Merseyside

18.500 The Mooir Vannin Offshore Wind Farm is located over 86km from the closest part of the Merseyside coastline and due to the distance, would not contribute to cumulative effects with the Project on receptors in Merseyside and is scoped out of further assessment of cumulative impacts on seascape, landscape and visual receptors in Merseyside.

18.501 Morgan Offshore Wind Project (Generation Assets) is located over 73km from the Wirral coast of Merseyside between New Brighton (Viewpoint 15, **Figure 18.38**) and Hoylake (Viewpoint 16, **Figure 18.39**); and 60km to 71km from the Sefton coast between Southport (Viewpoint 11, **Figure 18.34**) and Crosby Beach (Viewpoint 14, **Figure 18.37**). Due to its distance offshore and the predicted lack of visibility of the WTGs at such long range, Morgan Offshore Wind Project (Generation Assets) would have negligible to zero contribution to the cumulative effect experienced from Merseyside and is scoped out of further assessment of cumulative impacts on seascape, landscape and visual receptors in Merseyside.

When considering the Transmission Assets, the Morgan offshore booster station may potentially be located to the north or to the east of the Project windfarm site, within the booster station search area, and may therefore be visible in the vicinity of the Project windfarm site in views from the Merseyside coast. The offshore booster station may add a further element of offshore infrastructure in views. Due to the relatively long distance of both the windfarm site (over 45km) and the Morgan offshore booster station search area (24km) relative to the coast, the booster station is likely to be relatively small in scale at such long range in views from Merseyside and would be viewed in the baseline context of other offshore windfarm infrastructure out to sea. The contribution of the Morgan offshore booster station to the cumulative effect on receptors in Merseyside is therefore likely to be relatively low but is considered as part of the CEA below for Tier 2 projects on receptors in Merseyside.

18.502 The offshore export cables of the Morgan and Morecambe Offshore Wind Farms Transmission Assets are sub-sea, so there is no potential for operational cumulative effects on receptors in Merseyside and maintenance activities would have limited influence. There is also no potential for the Project to have cumulative effects on receptors in Merseyside with the Morgan and Morecambe onshore substations and onshore export cables, due to the distance of their location in Fylde District to the north, which means that different receptors are impacted.

18.503 The contribution of the Project to the cumulative effect on receptors in Merseyside would occur mainly in addition with Mona Offshore Wind Project, and potentially the Morgan offshore booster station, while its contribution to cumulative effects with the Morgan Offshore Wind Project (Generation

Assets), the other components of the Morgan and Morecambe Offshore Wind Farm Transmission Assets and the Mooir Vannin Offshore Wind Farm, is likely to be negligible.

18.504 The Mona Offshore Wind Project would be located over 41km from the Wirral coast of Merseyside, between New Brighton (Viewpoint 15, **Figure 18.38**) and Hoylake (Viewpoint 16, **Figure 18.39**), while the Project windfarm site is located approximately 45km at its closest point. Both projects would appear in the distant background, either subsumed directly behind or appearing in the context of Burbo Bank/Burbo Bank Extension and Gwynt y Môr offshore windfarms, at long range, such that they have limited potential to interact. Both projects contribute small amounts to the low levels of cumulative change arising in the Tier 2 scenario, and only during infrequent periods of excellent long-range visibility. The Project would have low to negligible levels of change and result in a **not significant** (minor) contribution to the cumulative effect with Tier 2 projects on seascape, landscape and visual receptors/views from the Wirral coast during construction and operation and maintenance.

18.505 The Project would be located 34-43km from the Sefton Coast and Mona Offshore Wind Project would be located over 45km from the Sefton coast between Southport (Viewpoint 11, **Figure 18.34**), Formby Point (Viewpoint 12, **Figure 18.35**) and Crosby Beach (Viewpoint 14, **Figure 18.37**). Together with Mona Offshore Wind Project and the Morgan offshore booster station, the Project may contribute to extending the offshore windfarm influence on the sea skyline across a wider part of the view to the north-west that is currently free of windfarm influence. Although relatively distant from the coast, the Project may, together with the Mona Offshore Wind Project and the Morgan offshore booster station, result in a wider lateral spread of WTGs and windfarm infrastructure (noting the booster station) in the distant offshore field of view and may contribute to offshore windfarms occupying more of the sea skyline in views from this stretch of coast. The cumulative effect may read as a northwards extension of windfarm influence into the Irish Sea from the regional grouping in Liverpool Bay (Burbo Bank and Burbo Bank Extension) and North Wales (Gwynt y Môr, North Hoyle, Rhyl Flats and Awel y Môr).

18.506 In these views from the Sefton coast between Southport and Crosby Beach, the Project is assessed as being likely to result in a medium-low cumulative magnitude of change assessed as a **not significant** (moderate) contribution to the cumulative effect with Tier 2 projects on seascape, landscape and visual receptors/views from the Sefton coast during construction and operation and maintenance phases. This includes representative viewpoints at Southport (Viewpoint 11, **Figure 18.34**), Formby Point (Viewpoint 12, **Figure 18.32**) and Crosby Beach (Viewpoint 14, **Figure 18.37**) which have a medium-high sensitivity to change. On balance, these moderate cumulative effects in EIA terms are considered not significant in the cumulative context, primarily due

to the distance of other Tier 2 projects from this coast, meaning that cumulative effects with the Project would rarely be perceived, and the Project would result in a relatively limited additional contribution to the cumulative effect over and above its Project-alone effect. It is likely that the Project may contribute to a partial loss of open sea views arising with the Mona Offshore Wind Project, however, these changes may only occur at long distance, with the Mona Offshore Wind Project located beyond 45km from this coast and having limited cumulative effects with the Project at such range. Cumulative visual effects are also only likely to occur during infrequent periods of excellent long-range visibility and effects of lower magnitude would occur during most prevailing and less optimal visibility conditions.

18.507 The coast and hinterland of the Sefton coast are largely urbanised between Crosby, Formby and Southport, with a reduced sensitivity to change in terms of character effects and would experience a low magnitude of change to their perceived character. As such, the Project is assessed as having a **not significant** (minor) contribution to the cumulative effect on the perceived character of these urban areas during construction and operation and maintenance.

North-West England

18.508 The Mooir Vannin Offshore Wind Farm is located over 70km from the closest part of the coastline of North-West England (at Fleetwood) and due to the distance, and its position beyond other operational offshore windfarms, would not contribute to the cumulative effects with the Project on receptors in North-West England and is scoped out of further assessment of cumulative impacts on seascape, landscape and visual receptors in North-West England.

18.509 The Morgan offshore booster station may potentially be located to the north or to the east of the Project windfarm site, within the booster station search area, and may therefore be visible in the vicinity of the Project windfarm site in views from the North-West England coast. The offshore booster station may add a further element of offshore infrastructure in views, potentially at closer range to the coast, to the east and to the fore of the Project windfarm site, in views from the coastline between Lytham St Anne's, Blackpool and Fleetwood. Due to the relatively distance of both the Project windfarm site (over 29km) and the Morgan offshore booster station search area (17km), the booster station is likely to be relatively small in scale at such range in views from this coastline and would be viewed in the baseline context of other offshore windfarm infrastructure out to sea. The contribution of the Morgan offshore booster station to the cumulative effect on receptors along this coastline between Lytham St Anne's and Fleetwood is therefore likely to be relatively low to moderate and is considered as part of the CEA below for Tier 2 projects on receptors.

18.510 The offshore export cables of the Morgan and Morecambe Offshore Wind Farms Transmission Assets are sub-sea so there is no potential for operational cumulative effects on receptors in North-West England and maintenance activities would have limited influence.

18.511 Morgan Offshore Wind Project (Generation Assets) is located 49-55km from the Fylde coast between Lytham St Anne's, Blackpool and Fleetwood. Mona Offshore Wind Project is located 45-52km from this section of the Fylde coast. Together with Mona Offshore Wind Project and the Morgan offshore booster station, the Project may contribute to extending the offshore windfarm influence on the sea skyline across a wider part of the view to the north-west that is currently free of windfarm influence. Although relatively distant from the coast, the Project may, together with the Mona Offshore Wind Project and the Morgan offshore booster station, result in a relatively wider lateral spread of WTGs in the distant offshore field of view and would contribute to offshore windfarms occupying more of the sea skyline in views from this stretch of coast. In views from this Fylde coast between Lytham St Anne's and Fleetwood, the Project is assessed as being likely to result in a medium-low cumulative magnitude of change and would result in a **not significant** (moderate) contribution to the cumulative visual effect with Tier 2 projects on visual receptors/views from the Fylde coast during construction and operation and maintenance. This includes representative viewpoints at Lytham St Anne's (Viewpoint 10, **Figure 18.33**) and Blackpool (Viewpoint 9, **Figure 18.32**), which have a high sensitivity to change.

18.512 The cumulative magnitude of change from this Fylde coast is moderated by the greater distance of Mona Offshore Wind Project over 45km from the coast, and the Morgan Offshore Wind Project (Generation Assets) over 49km from the coast, such that the effect would most frequently be a Project-alone effect resulting from the Project at slightly closer range (rather than a cumulative effect with the more distant Mona and Morgan projects). On balance, these moderate effects in EIA terms are considered not significant in the cumulative context, primarily due to the distance of other Tier 2 projects from this coast, meaning that cumulative effects with the Project would rarely be perceived, and the Project would result in a relatively limited additional contribution to the cumulative effect, over and above its Project-alone effect. It is likely that the Project may contribute to a partial loss of part of the open sea views, arising from the combination of the Project at closer range, with the Mona and Morgan projects in its backdrop and adjacent skyline. However, these changes may only occur at long distance with the Mona Offshore Wind Project and the Morgan Offshore Wind Project (Generation Assets) beyond 45km and 50km from this coast respectively and contributing a limited amount to the cumulative effect with the Project at such range. Cumulative visual effects are also only likely to occur during infrequent periods of excellent and very good

long-range visibility and effects of lower magnitude would occur during most prevailing and less optimal visibility conditions.

18.513 The coast and hinterland of the Fylde coast are largely urbanised between Lytham St Anne's, Blackpool and Fleetwood, with a reduced sensitivity to change in terms of character effects and would experience a low magnitude of change to their perceived character and the Project is assessed as having a **not significant** (minor) contribution to the cumulative effect on the character of these urban areas during construction and operation and maintenance.

18.514 As identified in the combined assessment of the Project and Transmission Assets (**Section 18.7.3.1**), significant cumulative effects have been identified for effects on LCA 19a Coastal Dunes – Fylde Coast Dunes at the landfall during the construction of the Transmission Assets, however this would be a short-term effect.

Tier 3

18.515 The Tier 3 CEA considers all projects on the Planning Inspectorate programme of projects at the pre-application stage that are yet to submit Scoping Report or are identified in the relevant Development Plan or programmes set for framework of future development. Tier 3 projects are considered in **Table 18.39** and include the Carbon Capture Storage Area (EIS Area 1) and Gateway Gas Storage Project and HyNet North-West Project. These Tier 3 projects are considered in **Table 18.39** but are not assessed further in this CEA as no information on these projects is available and they are not well-defined to the point that their cumulative impacts with the Project can be assessed.

18.8 Inter-relationships

18.516 There are clear inter-relationships between the seascape, landscape and visual assessment and several other topics, that have been considered within this ES. **Table 18.40** provides a summary of the principal inter-relationships and sign-posts to where those issues have been addressed in the relevant chapters.

Table 18.40 Seascape, landscape and visual inter-relationships

Topic and description	Related chapter	Where addressed in this chapter	Rationale
Construction phase			
Marine Archaeology and Cultural Heritage	**Chapter 15 Marine Archaeology and Cultural Heritage**	**Section 18.6.2** assessment informs assessments within Chapter 15.	Potential for temporary, short-term and reversible changes due to the addition of the Project, resulting in effects on the setting of cultural heritage assets, including Registered Parks and Gardens (RPGs) and Heritage Coasts.
Human health, Socio-Economics, and Tourism and Recreation	**Chapter 19 Human Health, Chapter 20 Socio-Economics, and Tourism and Recreation**	**Section 18.6.2** assessment informs assessments within Chapters 19 and 20.	Potential for temporary, short-term and reversible changes due to the addition of the Project resulting in indirect effect to visitor and tourist use of the coast, including receptors such as beaches, recreational routes, golf courses and visitor attractions.
Operation and maintenance phase			
Marine Archaeology and Cultural Heritage	**Chapter 15 Marine Archaeology and Cultural Heritage**	**Section 18.6.3** assessment informs assessments within Chapter 15.	Potential for temporary, long-term and reversible changes due to the addition of the Project, resulting in effects on the setting of cultural heritage assets, including RPGs and Heritage Coasts.
Human health Socio-Economics, and Tourism and Recreation	**Chapter 19 Human Health Chapter 20 Socio-Economics, and Tourism and Recreation**	**Section 18.6.3** assessment informs assessments within Chapters 19 and 20.	Potential for temporary, long-term and reversible changes due to the addition of the Project resulting in indirect effect to visitor and tourist use of the coast including receptors such as beaches, recreational routes, golf courses and visitor attractions.

Topic and description	Related chapter	Where addressed in this chapter	Rationale
Decommissioning phase			
Inter-relationships for impacts during the decommissioning phase would be the same as those outlined above for the construction phase.			

18.9 Transboundary effects

18.517 Transboundary effects arise when impacts from a development within one EEA states affects the environment of another EEA state(s).

18.518 A review of potential transboundary impacts has been carried out and has identified that there was no potential for significant transboundary effects with regard to seascape, landscape and visual from the Project upon the interests of other EEA States. This includes the Isle of Man, (noting the IoM is not an EEA state but a self-governing British Crown Dependency) which is at the periphery of the 60km study area (**Section 18.5.3.6**).

18.519 There are no European Union (EU) member states or associated territorial waters located within the SLVIA study area (**Figure 18.3**). The Project is located approximately 153.4km from the coastline of the nearest EU member state (Ireland). The ZTV (**Figure 18.5**) shows that there is no theoretical visibility of the Project beyond approximately 90km due to the effects of earth curvature, which would effectively 'hide' the WTGs behind the horizon at this distance.

18.520 Transboundary effects have therefore been scoped out of the SLVIA since there is no potential for significant effects at such long distance; the coastline of other EU member states is outside the SLVIA study area and would have no visibility of the construction and operation and maintenance of the offshore infrastructure.

18.10 Interactions

18.521 The impacts identified and assessed in this chapter have the potential to interact with each other. The areas of potential interaction between impacts are presented in **Table 18.41** and **Table 18.42**. This provides a screening tool for which impacts have the potential to interact. The impacts have been assessed relative to each development phase (i.e. construction, operation and maintenance or decommissioning) to see if (for example) multiple construction impacts affecting the same receptor could increase the level of impact upon that receptor.

18.522 Following this, a lifetime assessment has been undertaken, which considers the impact interactions identified as well as effects on receptors across all development phases (**Table 18.43**).

Table 18.41 Interaction between impacts – screening (construction and decommissioning)

	Potential interaction between impacts			
	Impacts on seascape character	Impacts on perceived landscape character	Impacts on special qualities of landscape designations	Impacts on views and visual amenity
Impacts on seascape character		Yes	Yes	Yes
Impacts on perceived landscape character	Yes		Yes	Yes
Impacts on special qualities of landscape designations	Yes	Yes		Yes
Impacts on views and visual amenity	Yes	Yes	Yes	

Table 18.42 Interaction between impacts – screening (operation and maintenance)

	Potential interaction between impacts			
	Impacts on seascape character	Impacts on perceived landscape character	Impacts on special qualities of landscape designations	Impacts on views and visual amenity
Impacts on seascape character		Yes	Yes	Yes
Impacts on perceived landscape character	Yes		Yes	Yes
Impacts on special qualities of landscape designations	Yes	Yes		Yes
Impacts on views and visual amenity	Yes	Yes	Yes	

Table 18.43 Interaction between impacts – phase and lifetime assessment

Receptor	Highest significance of effect level			
	Construction and decommissioning	Operation and maintenance	Phase assessment	Lifetime assessment
Seascape character receptors – changes to perceived seascape character	Not significant	Not significant	**No greater than individually assessed impact for each phase** Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations and views/visual receptors), the actual receptor is the same in each case i.e. the people perceiving the effect. Therefore, these people would only perceive the effect in one way (visually) not via multiple pathways simultaneously.	**No greater than individually assessed impact for each phase** Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations and views/visual receptors), the actual receptor is the same in each case i.e. the people perceiving the effect. Therefore, these people would only perceive the effect one way (visually), at one point in time, and would not experience the construction, operation and decommissioning phases simultaneously.
Landscape character receptors – changes to perceived character and qualities of	Not significant	Not significant	**No greater than individually assessed impact for each phase** Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations	**No greater than individually assessed impact for each phase** Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape

	Highest significance of effect level			
designated landscapes			and views/visual receptors), the actual receptor is the same in each case i.e. the people perceiving the effect. Therefore, these people would only perceive the effect in one way (visually) not via multiple pathways simultaneously.	character, designations and views/visual receptors), the actual receptor is the same in each case i.e. the people perceiving the effect. Therefore, these people would only perceive the effect one way (visually), at one point in time, and would not experience the construction, operation and decommissioning phases simultaneously.
Visual receptors – changes to views experienced by people from specific and representative viewpoints and visual receptors	Not significant	Significant	**No greater than individually assessed impact for each phase** Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations and views/visual receptors), the actual receptor is the same in each case i.e. the people perceiving the effect. Therefore, these people would only perceive the effect in one way (visually) not via multiple pathways simultaneously.	**No greater than individually assessed impact for each phase** Although the assessment is broken down into different receptors based upon both physical and policy definitions (seascape character, landscape character, designations and views/visual receptors), the actual receptor is the same in each case i.e. the people perceiving the effect. Therefore, these people would only perceive the effect one way (visually), at one point in time, and would not experience the construction, operation and decommissioning phases simultaneously.

18.11 Potential monitoring requirements

18.523 Monitoring requirements are described in the In Principle Monitoring Plan (IPMP) (Document Reference 6.4), submitted alongside the DCO Application and further developed and agreed with stakeholders prior to construction, based on the IPMP and taking account of the final detailed design of the Project.

18.524 No monitoring requirements are identified for impacts on seascape, landscape and visual receptors.

18.12 Assessment summary

18.525 This chapter examines the likely significant effects that may be experienced as a result of the Project on seascape, landscape and visual amenity.

18.526 The SLVIA identifies and assesses the significance of changes resulting from the construction, operation and maintenance and decommissioning of the Project, but focuses particularly on the operation and maintenance phase as this is when the significant effects are most likely to arise over the long-term due to the presence of new offshore infrastructure above sea level, in particular the offshore WTGs within the windfarm site.

18.527 The SLVIA is carried out in relation to both the seascape character and landscape character as environmental resources in their own right, and on people's views and visual amenity.

18.528 A desk-based review of literature, datasets and field surveys have been undertaken to establish a baseline and inform professional judgements on impact significance.

18.529 The Project is located primarily within the expansive waters of the Irish Sea South MCA (38). The sensitivity of this seascape to changes associated with the Project is considered to be low. Although it has a role in the wider, distant seascape setting of the LDNP and coastline of North-West England and North Wales, the southern part of the Irish Sea is a busy seascape, with multiple offshore activities including commercial fishing, main shipping routes, oil and gas extraction, dredging and extensive operational offshore windfarms extend across the north-west of the MCA and across Liverpool Bay and the open waters off North Wales.

18.530 The Project directly affects the MCA and introduce elements that could partially affect its perceived seascape character, increasing the influence of offshore WTGs to the south and forming a new windfarm grouping in this part of the seascape. Existing offshore windfarms do, however, already form a key defining characteristic of the MCA such that its perceived character would be subject to less change as a result of the addition of elements that are

substantially characteristic within the existing seascape of the southern Irish Sea. The magnitude of change to the perceived character of MCA 38 is therefore assessed as medium and the effect on perceived character not significant (minor).

18.531 The LDNP and the southern extremity of its high fells are located to the north beyond the West Cumbria coastal plain. This part of the LDNP is open at its seaward limit to encompass an associative (but not formally defined) extent of seascape, and the elevation of the southern fell of the LDNP provides an 'auditorium' for sea views, however these are already extensively influenced by operational offshore windfarms in the seascape. There would be no significant effects on views form the LDNP, its perceived character or special qualities, which would be subject to negligible levels of change as a result of the Project. This is primarily because the Project would be viewed at very long distance, subsumed behind the array of operational offshore WTGs, such that its additional influence is diminished and viewed as an introduction of elements that are already substantially characteristic in the baseline seascape.

18.532 It is considered that the Project avoids compromising the purposes of the LDNP designation, despite the fact that it may be visible from within the LDNP (in periods of excellent visibility) and that it may affect certain special qualities. The Project would not undermine the statutory purpose of the LDNP: harm would not be caused to the LDNP's special qualities or views from the high fells. The natural beauty of the LDNP would remain and opportunities would still be present for understanding and enjoyment of the special qualities of the LDNP, and the Project would not therefore undermine the statutory purpose of the LDNP or compromise the purposes of its designation.

18.533 When viewed from the coastline of Barrow-in-Furness, Walney Island, and the coast and fells of the southern LDNP, the Project would be situated at long distance and behind the baseline influence of operational offshore windfarms (within the regional windfarm grouping formed by Barrow, West of Duddon Sands, Ormonde and Walney Windfarms) within the intervening area between the LDNP and the windfarm site, such that the additional influence of the Project is perceived as being subsumed behind existing windfarms, at greater distance and smaller scale further offshore.

18.534 When viewed from the low-lying urbanised coastline of the Lancashire coastal plain to the east, the Project would form a separate and distinct array within the central part of the southern Irish Sea, extending the influence of WTGs to the south of the existing regional windfarm grouping that occupies the majority of the northern portion of the seascape.

18.535 The Fylde coast forms the closest coastline to the Project, however there is a nearly continuous urban edge of coastal conurbations between Fleetwood,

Blackpool and Lytham St Anne's, which form an undesignated, urbanised coastal strip. The location of the Project off the Fylde coast means that it is exposed to and visible from these settlements along the coast. Uninterrupted sea views are important to the character and sense of space when within the settlements and popular tourist/visitor areas along the sea front, including at Blackpool, Lytham St Anne's and further south from the Sefton coast at Southport and Crosby. Existing offshore windfarms form prominent visible elements in the existing seascape from the Sefton coast and are part of the baseline for seascape, landscape and visual effects assessments.

18.536 Significant visual effects of the Project are contained within the areas of the Fylde and Sefton coasts, including representative viewpoints at Fleetwood (viewpoint 8), Blackpool (Viewpoint 9), Lytham St Annes (Viewpoint 10) and Southport (Viewpoint 11). Significant (major/moderate to moderate) effects on views from the Fylde coast as represented by these viewpoints are assessed due the medium-high to high sensitivity of the visual receptors experiencing views and the medium magnitude of change arising as a result of the Project.

18.537 The sea views are considered as being a fundamental part of the appeal of the coast and settlements at Blackpool, Lytham St Anne's and Southport, which are appreciated by high numbers of people and multiple attractions such as the piers, sea front promenades and Blackpool Tower involve appreciation of the sea view. The magnitude of change is considered to be medium in these views due to the relatively closer location of the coastline between approximately 29km to 34km, such that the WTGs appear of moderate scale, introducing new elements in the relatively simply composed view of sand/shingle beach, sea and sky; and introducing a separate offshore windfarm influence on the sea skyline in a new part of the view that is currently free of windfarm influence. Although there are localised significant effects on views from this section of coast, these visual effects do not translate into significant effects on the perceived character, which is extensively urbanised and its fundamental urban/settled character would not be changed as a result of the Project.

18.538 No measures are available to completely mitigate the significant effects on views experienced by residents of these coastal settlements and tourist visitors, however measures are embedded as part of the Project to avoid, minimise or reduce any significant environmental effects on seascape, landscape and visual receptors, as far as possible. The siting of the Project at long distance offshore is the key measure that minimises potential for significant effects experienced in coastal views.

18.539 The effect of the Project on views and perceived character of the Merseyside area, including the Wirral and North Wales, are assessed as not significant (minor) due to the long distance of the Project off these coastlines and their position either directly behind and in the background context of the extensive

operational offshore windfarm groupings in Liverpool Bay and the North Wales open waters (Burbo Bank, Burbo Bank Extension, North Hoyle, Rhyl Flats and Gwynt y Môr offshore windfarms).

18.540 The Arnside and Silverdale AONB is located 52.7km from the windfarm site (**Figure 18.5a**) and the Forest of Bowland approximately 50km from the windfarm site (**Figure 18.5b**). The effect of the Project on the Arnside and Silverdale AONB and Forest of Bowland AONB is assessed as not significant due to the very long distances involved, the limited amount and small scale of the WTGs visible, and the low frequency of visibility at such long range. In Wales, there are no AONBs located within 48km of the windfarm site and agreement with NRW has been reached with regards to scoping out effects on designated landscapes in Wales on the basis that effects of the Project on AONBs in Wales would be not significant.

18.541 Regard has been had to the purpose of conserving and enhancing the natural beauty of the AONBs in the SLVIA study area through the siting and design of the Project, which is located a long distance offshore, with no AONBs located within 48km of the windfarm site meaning that the statutory purpose of AONB designations within the study area would not be compromised as a result of the Project.

18.542 The cumulative effect of the Project is assessed in **Section 18.7**. No significant cumulative effects have been identified as a result of the contribution of the Project with Tier 1 projects (Awel y Môr Offshore Windfarm).

18.543 The Project is assessed as contributing to some significant cumulative visual effects with Tier 2 projects (Mona Offshore Wind Project and Morgan Offshore Wind Project (Generation Assets)), experienced from parts of the Fylde and Sefton coasts, including representative viewpoints at Lytham St Anne's (Viewpoint 10, **Figure 18.33**) and Blackpool (Viewpoint 9, **Figure 18.32**).

18.544 Morgan Offshore Wind Project (Generation Assets) is located 49km to 55km from the Fylde coast between Lytham St Anne's, Blackpool and Fleetwood. Mona Offshore Wind Project is located 45km to 52km from this section of the Fylde coast. In views from the Fylde coast between Lytham St Anne's and Fleetwood, the Project is assessed as likely to result in a medium-low cumulative magnitude of change and on balance, may result in a not significant (moderate) contribution to the cumulative visual effect with Tier 2 projects on visual receptors/views from parts of the Sefton and Fylde coast, including representative viewpoints at Lytham St Anne's and Blackpool, Southport, Formby Point and Crosby Beach. On balance, these moderate effects in EIA terms are considered not significant in the Tier 2 cumulative context, due to the distance of the Mona Offshore Wind Project and Morgan Offshore Wind Project Generation Assets offshore, which means that theoretical cumulative effects would rarely be perceived and the Project would

result in a relatively limited additional contribution to the cumulative effect, over and above its Project-alone effect.

18.545 A summary of effects of the Project in respect to seascape, landscape and visual receptors is presented in **Table 18.44**.

Table 18.44 Summary of potential effects on seascape and landscape visual receptors

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
Operational impact on seascape character	MCA 32 Walney Coastal Waters and Duddon Estuary	Medium	Low	Not significant (Minor)	None	Not significant (Minor)	Cumulative effects are assessed for both Tier 1 and Tier 2 projects, which are not beyond the significance awarded to Project-alone effects (as detailed in **Section 18.7**).
	MCA 34 Blackpool Coastal Waters and Ribble Estuary	Medium	Medium	Not Significant (Moderate)		Not Significant (Moderate)	
	MCA 38 Irish Sea South (England)	Low	Medium	Not significant (Minor)		Not significant (Minor)	
Operational impact on views, perceived character and special qualities of the LDNP	Coastal Sandstone LCT (E)	High	Negligible	Not Significant (Minor)		Not Significant (Minor)	
	LDNP Special Qualities A world class cultural landscape 7. Mosaic of lakes, tarns, rivers and coast	High	Negligible	Not Significant (Minor)		Not Significant (Minor)	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	13. Opportunities for quiet enjoyment						
	Viewpoint 1 Black Combe	High	Negligible	Not Significant (Minor)		Not Significant (Minor)	
	Viewpoint 24 Silecroft Beach	High	Negligible	Not Significant (Minor)		Not Significant (Minor)	
	A595	Medium	Low	Not Significant (Minor)		Not Significant (Minor)	
	Cumbrian Coastal Way/England Coast Path Route	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	
Operational impact on views and perceived character in North-West England	Coastal Plain LCA (2c)	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Fylde Coast Dunes LCA (19a)	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Viewpoint 2 Haverigg Point	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Viewpoint 3 Ulverston (Hoad Monument)	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	
	Viewpoint 4 High Haume Farm (Dalton-in-Furness)	Medium-high	Low	Not Significant (Moderate /Minor)		Not Significant (Moderate /Minor)	
	Viewpoint 5 Walney Island (Biggar Bank Road)	Medium	Low	Not Significant (Minor)		Not Significant (Minor)	
	Viewpoint 6 South Walney Nature Reserve	Medium	Low	Not Significant (Minor)		Not Significant (Minor)	
	Viewpoint 7 Heysham Head, Chapel Hill The-Barrows	Medium-high	Medium-low	Not Significant (Moderate)		Not Significant (Moderate)	
	Viewpoint 8 Fleetwood (Rossall Point)	Medium-high	Medium	**Significant (Moderate)**		**Significant (Moderate)**	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Viewpoint 9 Blackpool (near tower)	High	Medium	**Significant (Major/ Moderate)**		**Significant (Major/ Moderate)**	
	Viewpoint 10 Lytham St Anne's	High	Medium	**Significant (Major/ Moderate)**		**Significant (Major/ Moderate)**	
	Viewpoint 13 Clieves Hill	Medium-high	Medium-low	Not Significant (Moderate)		Not Significant (Moderate)	
	Fleetwood	Medium-high	Medium from the seafront Negligible from areas set-back from seafront within Fleetwood	**Significant (Moderate)** from the seafront Not significant (Minor) from areas set-back from seafront within Fleetwood		**Significant (Moderate)** from the seafront Not significant (Minor) from areas set-back from seafront within Fleetwood	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Blackpool	High	Medium from the seafront Negligible from areas set-back from seafront within Blackpool	**Significant (Major/ Moderate)** from the seafront Not significant (Minor) from areas set-back from seafront within Blackpool		**Significant (Major/ Moderate)** from the seafront Not significant (Minor) from areas set-back from seafront within Blackpool	
	Lytham St Anne's	High	Medium from the seafront Negligible from areas set-back from seafront within Lytham St Anne's	**Significant (Major/ Moderate)** from the seafront Not significant (Minor) from areas set-back from seafront within Lytham St Anne's		**Significant (Major/ Moderate)** from the seafront Not significant (Minor) from areas set-back from seafront within Lytham St Anne's	
	A584	Medium	Medium	Not Significant (Moderate)		Not Significant (Moderate)	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Lancashire Coastal Way	Medium-high	Medium between Fleetwood and Lytham St Anne's Medium-low along the southern edges of Morecambe Bay Negligible from the remaining sections	**Significant (Moderate)** between Fleetwood and Lytham St Anne's Not Significant (Minor) along the southern edges of Morecambe Bay Not Significant (Negligible) from the remaining sections		**Significant (Moderate)** between Fleetwood and Lytham St Anne's Not Significant (Minor) along the southern edges of Morecambe Bay Not Significant (Negligible) from the remaining sections	
	Wyre Way	Medium-high	Medium around Rossall Point (between Rossall School, Rossal Point and the River Wyre) Negligible from remaining inland sections	**Significant (Moderate)** around Rossall Point (between Rossall School, Rossal Point and the River Wyre) Not Significant (Minor) from remaining inland sections		**Significant (Moderate)** around Rossall Point (between Rossall School, Rossal Point and the River Wyre) Not Significant (Minor) from remaining inland sections	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
Operational impact on views and perceived character in Merseyside	Coastal Dunes LCT (2)	Medium-high	Medium-low	Not Significant (Moderate)		Not Significant (Moderate)	
	Dune Backlands LCT (3)	Medium	Low	Not Significant (Minor)		Not Significant (Minor)	
	Coastal Marshland LCT (4)	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Viewpoint 11 Southport Pier	High	Medium	**Significant (Major/ Moderate)**		**Significant (Major/ Moderate)**	
	Viewpoint 12 Formby Point	Medium-high	Medium-low	Not Significant (Moderate)		Not Significant (Moderate)	
	Viewpoint 14 Crosby Beach	Medium-high	Medium-low	Not Significant (Moderate)		Not Significant (Moderate)	
	Viewpoint 15 Fort Perch Rock, New Brighton	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Viewpoint 16 Hoylake, Hilbre Point	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Southport	Medium-high	Medium from the seafront Negligible from areas set-back from seafront within Southport	**Significant (Moderate)** from the seafront Not Significant (Minor) from areas set-back from seafront within Southport		**Significant (Moderate)** from the seafront Not Significant (Minor) from areas set-back from seafront within Southport	
	Crosby	Medium-high	Medium-low from seafront Negligible from areas set-back from seafront within Crosby	Not Significant (Moderate) from seafront Not Significant (Minor) from areas set-back from seafront within Crosby		Not Significant (Moderate) from seafront Not Significant (Minor) from areas set-back from seafront within Crosby	
	A565	Medium	Low	Not Significant (Minor/ Negligible)		Not Significant (Minor/ Negligible)	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Trans Pennine Trail (coastal section)	Medium-high	Medium from coastal section between Ainsdale and Southport Negligible from inland section between Ainsdale and Liverpool	**Significant (Moderate)** from coastal section between Ainsdale and Southport Not Significant (minor) from inland section between Ainsdale and Liverpool		**Significant (Moderate)** from coastal section between Ainsdale and Southport Not Significant (minor) from inland section between Ainsdale and Liverpool	
Operational impact on representative views from North Wales	Viewpoint 17 Talacre Beach (Point of Ayr)	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Viewpoint 18 Prestatyn (Nova Centre)	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Viewpoint 19 Bryn-Ilwyn Viewpoint (Prestatyn)	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	
	Viewpoint 20 Graig Fawr, Clwydian Range	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	

Potential impact	Receptor	Sensitivity	Magnitude	Significance of effect	Additional mitigation	Residual effect	Cumulative effect
	Viewpoint 21 Rhos Point	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	
	Viewpoint 22 Llandudno Promenade	Medium-high	Negligible	Not Significant (Minor)		Not Significant (Minor)	
	Viewpoint 23 Great Orme Head	Medium-high	Low	Not Significant (Moderate/ Minor)		Not Significant (Moderate/ Minor)	

18.13 References

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