MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Environmental Statement

Volume 3, Chapter 10: Landscape and visual resources

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Glossary

Term	Guidance
400 kV grid connection cables	Cables that will connect the proposed onshore substations to the existing National Grid Penwortham substation.
400 kV grid connection cable corridor	The corridor within which the 400 kV grid connection cables will be located.
Access land	The Countryside and Rights of Way Act 2000 gives a public right of access to land mapped as 'open country' (mountain, moor, heath, down and coastal margin) or registered common land. These areas are known as ‘access land'.
Applicants	Morgan Offshore Wind Limited (Morgan OWL) and Morecambe Offshore Windfarm Ltd (Morecambe OWL).
Baseline	The status of the environment without the Transmission Assets in place.
Code of Construction Practice	A document detailing the overarching principles of construction, contractor protocols, construction-related environmental management measures, pollution prevention measures, the selection of appropriate construction techniques and monitoring processes.
Commitment	This term is used interchangeably with mitigation and enhancement measures. The purpose of commitments is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects. Primary and tertiary commitments are taken into account and embedded within the assessment set out in the ES.
Cumulative effects	The combined effect of the Transmission Assets in combination with the effects from other proposed developments, on the same receptor or resource.
Designated landscapes	Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in development plans or other documents.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Effect	The term used to express the consequence of an impact. The significance of effect is determined by correlating magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
EIA Scoping Report	A report setting out the proposed scope of the Environmental Impact Assessment process. The Transmission Assets Scoping Report was submitted to The Planning Inspectorate (on behalf of the Secretary of State) for the Morgan and Morecambe Offshore Windfarms Transmission Assets in October 2022.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.

Term	Guidance
Feature	Prominent elements in the landscape, such as tree clumps, church towers or wooded skylines.
Generation Assets	The generation assets associated with the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm include the offshore wind turbines, inter-array cables, offshore substation platforms and platform link (interconnector) cables to connect offshore substations.
Green infrastructure	Networks of green spaces and watercourses and water bodies that connect rural areas, villages, towns and cities.
Heritage	The historic environment and especially valued assets and qualities, such as historic buildings and cultural traditions.
Impact	Change that is caused by an action/proposed development, e.g., land clearing (action) during construction which results in habitat loss (impact).
Inter-related effects	Inter-related effects arise where an impact acts on a receptor repeatedly over time to produce a potential additive effect or where a number of separate impacts, such as noise and habitat loss, affect a single receptor.
Intertidal area	The area between Mean High Water Springs and Mean Low Water Springs.
Landfall	The area in which the offshore export cables make landfall (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area and landfall compound(s).
Landform	The shape and form of the land surface which has resulted from combinations of geology, geomorphology, slope, elevation and physical processes.
Landscape	An area, as perceived by people, the character of which is a result of the action and interaction of natural and/or human factors.
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.
Landscape Character Areas	These are single unique areas which are the discrete geographical areas of a particular landscape type.
Landscape Character Assessment	The process of identifying and describing variation in the character of the landscape and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscape distinctive. The process results in the production of a Landscape Character Assessment.
Landscape quality (condition)	A measure of physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
Landscape value	The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.
Marine licence	The Marine and Coastal Access Act 2009 requires a marine licence to be obtained for licensable marine activities. Section 149A of the Planning Act 2008 allows an applicant for to apply for ‘deemed marine licences’ in English waters as part of the development consent process.

Term	Guidance
Maximum design scenario	The realistic worst case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the Transmission Assets.
Mean High Water Springs	The height of mean high water during spring tides in a year.
Mean Low Water Springs	The height of mean low water during spring tides in a year.
Morecambe Offshore Windfarm: Generation Assets	The offshore generation assets and associated activities for the Morecambe Offshore Windfarm.
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The offshore and onshore infrastructure connecting the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the national grid. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400 kV grid connection cables and associated grid connection infrastructure such as circuit breaker compounds. Also referred to in this report as the Transmission Assets, for ease of reading.
Morgan Offshore Wind Project: Generation Assets	The offshore generation assets and associated activities for the Morgan Offshore Wind Project.
National Policy Statement(s)	The current national policy statements published by the Department for Energy Security and Net Zero in 2023 and adopted in 2024.
Onshore Infrastructure Area	The area within the Transmission Assets Order Limits landward of Mean High Water Springs. Comprising the offshore export cables from Mean High Water Springs to the transition joint bays, onshore export cables, onshore substations and 400 kV grid connection cables, and associated temporary and permanent infrastructure including temporary and permanent compound areas and accesses. Those parts of the Transmission Assets Order Limits proposed only for ecological mitigation/enhancement/biodiversity benefit are excluded from this area.
Onshore Order Limits	See Onshore Order Limits: Onshore (below).
Onshore substations	The onshore substations will include a substation for the Morgan Offshore Wind Project: Transmission Assets and a substation for the Morecambe Offshore Windfarm: Transmission Assets. These will each comprise a compound containing the electrical components for transforming the power supplied from the generation assets to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.
Photomontage	A sequence of photographs taken from representative viewpoints which illustrate the location, size, degree of visibility or appearance of a development.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project and which helps to inform consultation responses.
Seascape	The visual and physical conjunction of land and sea which combines maritime, coast and hinterland character.
Scoping Opinion	Sets out the Planning Inspectorate's response (on behalf of the Secretary of State) to the Scoping Report prepared by the Applicants. The Scoping Opinion contains the range of issues that the Planning Inspectorate, in

Term	Guidance
	consultation with statutory stakeholders, has identified should be considered within the Environmental Impact Assessment process.
Special qualities	A term usually used in relation to National Parks or Areas of Outstanding Natural Beauty (now termed National Landscapes). It is given to those qualities for which the area is designated.
Study area	This is an area which is defined for each environmental topic which includes the Onshore Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
Susceptibility	The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.
Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of electrical transformers.
Transboundary effects	Effects from a project within one state that affect the environment of another state(s).
Transmission Assets	See Morgan and Morecambe Offshore Wind Farms: Transmission Assets (above).
Onshore Order Limits	The area within which all components of the Transmission Assets will be located, including areas required on a temporary basis during construction and/or decommissioning
Transmission Assets Order Limits: Onshore	The area within which all components of the Transmission Assets landward of Mean High Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds). Also referred to in this report as the Onshore Order Limits, for ease of reading.
Visual amenity	The overall pleasantness of the views people enjoy in their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which, a development is theoretically visible.

Acronyms

Acronym	Meaning
CEA	Cumulative Effects Assessment
CoCP	Code of Construction Practice
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement

Acronym	Meaning
GLVIA	Guidelines for Landscape and Visual Impact Assessment
HDD	Horizontal Directional Drilling
IEMA	Institute for Environmental Management and Assessment
LCA	Landscape Character Area
LVIA	Landscape and Visual Impact Assessment
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MPS	Marine Policy Statement
NCA	National Character Area
NPPF	National Planning Policy Framework
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
PRoW	Public Right of Way
UK	United Kingdom
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
km	Kilometres
m	Metre
m^2	Square Metre
nm	Nautical mile

10 Landscape and visual resources

10.1 Introduction

10.1.1.1 This chapter of the Environmental Statement (ES) presents the findings of the Environmental Impact Assessment (EIA) undertaken for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets. For ease of reference, the Morgan and Morecambe Offshore Wind Farms Transmission Assets are referred to in this chapter as the 'Transmission Assets'. This ES accompanies the application to the Planning Inspectorate for development consent for the Transmission Assets.

10.1.1.2 The purpose of the Transmission Assets is to connect the Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets (referred to collectively as the 'Generation Assets') to the National Grid. A description of the Transmission Assets can be found in Volume 1, Chapter 3: Project description of the ES.

10.1.1.3 This chapter considers the likely impacts and effects of the Transmission Assets on landscape and visual resources, comprising a Landscape and Visual Impact Assessment (LVIA). Specifically, this chapter relates to the onshore elements of the Transmission Assets during the construction, operation and maintenance, and decommissioning phases. No above sea-level structures or elements of sea surface-piercing infrastructure form part of the application for development consent for the Transmission Assets. Seascape characterisation and assessment of effects have therefore been scoped out of the LVIA (refer to **section 10.8**).

10.1.1.4 This ES chapter:

- identifies the key legislation, policy and guidance relevant to landscape and visual resources;
- details the EIA scoping and consultation process undertaken to date for landscape and visual resources;
- confirms the study area for the assessment, the methodology used to identify baseline environmental conditions and sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation;
- identifies the scope of the assessment;
- details the mitigation and/or monitoring measures that are proposed to prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process;
- defines the project design parameters used to inform for the impact assessment;
- identifies the impact assessment methodology and presents an assessment of the likely impacts and effects in relation to the construction, operation and maintenance and decommissioning phases of the Transmission Assets on landscape and visual resources (and,

where relevant, the impacts and effects of landscape and visual resources on the Transmission Assets); and

- identifies any cumulative, transboundary and/or inter-related effects in relation to the construction, operation and maintenance and decommissioning phases of the Transmission Assets on landscape and visual resources.

10.1.1.5 This chapter also draws upon additional information to support the assessment contained within:

- Volume 3, Annex 10.1: Landscape and visual resources planning policy context of the ES;
- Volume 3, Annex 10.2: Landscape character baseline technical report of the ES;
- Volume 3, Annex 10.3: Visual baseline technical report of the ES;
- Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES; and
- Volume 3, Annex 10.5: Tree survey and arboricultural impact assessment of the ES.

10.2 Legislation, policy and guidance

10.2.1 Legislation

10.2.1.1 A summary of the primary legislation relating to landscape and visual resources, including how and where it has been considered in the ES is provided in **Table 10.1**.

Table 10.1: Summary of primary legislation relevant to landscape and visual resources

Primary legislation	Summary	How and where considered in the ES
Part 9 of The Marine and Coastal Access Act 2009 Relevance: areas of the coastline fall within the study areas.	Aims to improve public access to, and enjoyment of, the English coastline by creating clear and consistent public rights of access along the English coast for open-air recreation on foot.	The baseline landscape character of the 'coastal plain' is set out in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES and summarised in **section 10.7**. The visual baseline of the coastal plain is set out in Volume 3, Annex 10.3: Visual baseline technical report of the ES and summarised in **section 10.7**. The effects are assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
The Countryside and Rights of Way Act 2000 Relevance: Public Rights of Way (PRoW) fall within or close to the study areas	Gives public rights of access to coastal margins ('access land').	The potential landscape and visual effects of the Transmission Assets with respect to PRoW and people using them are identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to

Primary legislation	Summary	How and where considered in the ES
		mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
National Parks and Access to the Countryside Act 1949 Relevance: National and Local Nature Reserves, PRoW and long distance recreational paths fall within or close to the study areas	Established the creation of National Parks, Nature Reserves and PRoW.	No National Parks are located within or near to the study areas defined in **section 10.4**. However, there are National and Local Nature Reserves within and near to the Onshore Order Limits which are referred to as context to inform landscape value in **section 10.12.2.** Refer to Volume 3, Annex 3.1: Onshore ecology desk study of the ES for the location of the National and Local Nature Reserves. The potential landscape and visual effects of the Transmission Assets with respect to PRoW are identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.

10.2.2 Planning policy context

10.2.2.1 The Transmission Assets will be located in English offshore waters (beyond 12 nautical miles (nm) from the English coast) and inshore waters (within 12 nm from the English coast), with the onshore infrastructure located wholly within England. As set out in Volume 1, Chapter 1: Introduction of this ES, the Secretary of State for the Department for Business, Energy and Industrial Strategy (the department which preceded the Department for Energy Security and Net Zero) has directed that the Transmission Assets are to be treated as development for which development consent is required under the Planning Act 2008, as amended.

10.2.2.2 The following sections describe national policy relevant to landscape and visual resources. Local planning policy relevant to the assessment of landscape and visual resources, including how and where it has been considered in the ES is described separately in Volume 3, Annex 10.1: Landscape and visual resources planning policy context of the ES.

National Policy Statements

10.2.2.3 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to offshore wind development and the Transmission Assets, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government's policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero 2023a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero 2023b); and
- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2023c).

10.2.2.4 **Table 10.2** sets out a summary of the policies within the current NPSs, relevant to landscape and visual resources.

10.2.2.5 The policies within the current NPSs relevant to the LVIA in the ES can be viewed in the National Policy Statement tracker (document reference J26) and Planning Statement (document reference J28), submitted with the application.

Table 10.2: Summary of the NPS EN-1, NPS EN-3 and NPS EN-5 requirements relevant to this chapter

Summary of NPS provision	How and where considered in the ES
NPS EN-1	
In addition to delivering biodiversity net gain, developments may also deliver wider environmental gains and benefits to communities relevant to the local area, and to national policy priorities, such as:[…] • landscape enhancement; • increased access to natural greenspace; or • the enhancement, expansion or provision of trees and woodlands. [Paragraph 4.6.13 NPS EN-1]	Opportunities to deliver wider environmental gains, including landscape enhancements and the creation of woodland have been considered as part of the Outline Landscape Management Plan (document reference J2). Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
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 4.7.2 of NPS EN-1]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3) have identified how 'Good Design' can be applied with reference to NPS-EN-1.
Whilst the applicant may not have any or very limited choice in the physical appearance of some energy infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, landform and vegetation. Furthermore, the design and sensitive use of materials in any associated development such as electricity converter stations will assist in ensuring that such development contributes to the quality of the area. Applicants should also, so far as is possible, seek to embed opportunities for nature inclusive design within the design process. [Paragraph 4.7.5 to 4.79 of NPS EN-1]	
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.	The potential landscape and visual effects of the Transmission Assets with respect to the townscapes are identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate

Summary of NPS provision	How and where considered in the ES
[Paragraph 5.10.1 NPS EN-1]	potential impacts on landscape and visual resources are provided in **section 10.9**. Seascape has been scoped out of the LVIA, as described further in **section 10.8**.
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 of NPS EN-1]	The assessment of landscape and visual resources has been undertaken in accordance with the methodology set out in Volume 1, Chapter 5: Environmental assessment methodology of the ES in addition to the guidance set out in **section 10.2.3**. The methodology used for the assessment of landscape and visual resources, including the significance criteria used is provided in **section 10.11**. A detailed explanation of the assessment methodology in accordance with Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3) (Landscape Institute and Institute for Environmental Management and Assessment (IEMA), 2013) is provided in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES. The siting and design of the Transmission Assets is discussed in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and the Outline Design Principles document (document reference J3).
Virtually all nationally significant energy infrastructure projects will have adverse effects on the landscape, but there may also be beneficial landscape character impacts arising from mitigation. [Paragraph 5.10.5 of NPS EN-1]	The potential landscape and visual effects of the Transmission Assets with respect to the landscape character are assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The Outline Landscape Management Plan (document reference J2) sets out the landscape design proposals for enhancement of the local landscape, where practicable, and the Outline Design Principles document (document reference J3) sets out the process of achieving good design.
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 5.10.6 of NPS EN-1]	Justification for the location of the Transmission Assets, including a description of the design and environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and within the Outline Design Principles document (document reference J3). The potential landscape and visual effects of the Transmission Assets with respect to the landscape character are identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9** and the Outline Landscape Management Plan (document reference J2).

Summary of NPS provision	How and where considered in the ES
All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. [Paragraph 5.10.13 of NPS EN-1]	The potential visual receptors of the Transmission Assets are identified in **section 10.7.3** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on visual resources are provided in **section 10.9**.
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 5.10.15 of NPS EN-1]	Visual receptors located within coastal areas have been considered in the assessment of landscape and visual resources. Visual receptors of the Transmission Assets are identified in **section 10.7.3** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on visual resources are provided in **section 10.9**.
The applicant should carry out a landscape and visual impact assessment and report it in the ES, including cumulative effects (see section 4.3 [of NPS EN-1]). Several guides have been produced to assist in addressing landscape issues. [Paragraph 5.10.16 of NPS EN-1]	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The potential cumulative landscape and visual effects of the Transmission Assets are considered in section **10.14**. The assessment of landscape and visual resources has been undertaken in accordance with the methodology set out in Volume 1, Chapter 5: Environmental assessment methodology of the ES in addition to the guidance set out in **section 10.2.3**. The methodology used for the assessment of landscape and visual resources, including the significance criteria used is provided in **section 10.11**. A detailed explanation of the assessment methodology in accordance with GLVIA3 (Landscape Institute and IEMA, 2013) is provided in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.
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. [Paragraph 5.10.17 of NPS EN-1]	Existing landscape assessments and related studies (where relevant) are identified in **section 10.7** and assessed in **section 10.12**. Further information regarding the baseline landscape character, including landscape character assessment and related studies is provided in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES. National planning policy relevant to the assessment of landscape and visual resources is described in **section 10.2**. Local planning policy relevant to the assessment of landscape and visual resources, including local development documents is provided in Volume 3, Annex 10.1: Landscape and visual resources planning policy context of the ES.
The applicant should consider landscape and visual matters in the early stages of siting and design, where site choices and design principles are being	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the

Summary of NPS provision	How and where considered in the ES
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 of NPS EN-1]	iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and the Outline Design Principles document (document reference J3).
Applicants should consider how landscapes can be enhanced using landscape management plans, as this will help to enhance environmental assets where they contribute to landscape quality. [Paragraphs 5.10.24 of NPS EN-1]	Measures set out to manage and enhance environmental assets are set out within the Outline Landscape Management Plan (document reference J2) as summarised in **Table 10.17**.
The assessment should include the effects on landscape components and character during construction and operation. For projects which may affect a National Park, or a National Landscape , the assessment should include effects on the natural beauty and special qualities of these areas. [Paragraph 5.10.20 of NPS EN-1]	The assessment includes impacts of the Transmission Assets on landscape components and character during construction, operation and maintenance and decommissioning, and these are identified in **section 10.7.2** and assessed in **sections 10.12.2**, **10.12.3** and **10.12.4**. The Onshore Order Limits are not located within or near any National Parks or NLs.
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 of NPS EN-1]	The potential landscape and visual effects and effects on visual amenity during construction, operation and maintenance and decommissioning the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of light pollution effects during construction. The effects of light pollution with respect to nature conservation are considered separately in Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.
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 [of NPS EN-1]), from construction and operational activities on residential amenity and on sensitive locations, receptors and views, how these will be minimised. [Paragraph 5.10.22 of NPS EN-1]	The potential landscape and visual effects and effects on residential amenity during construction, operation and maintenance and decommissioning the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of light pollution effects during construction . The effects of noise pollution on human and ecological receptors are considered in Volume 3, Chapter 8: Noise and vibration of the ES and Volume 3, Chapter 3: Ecology and nature conservation of the ES respectively.
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 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 of NPS EN-1]	**Table 10.22** provides a list of other projects, plans and activities considered within the CEA in **section 10.14**. Visual impact assessments are undertaken on a case by case basis taking into consideration individual baseline situations and contexts in combination with the specific development proposal. There are no known similar developments in the same local context that are likely to result in similar impacts on visual receptors. This includes consideration of existing development, which has been used to inform the

Summary of NPS provision	How and where considered in the ES
	assessment of the potential landscape and visual effects of the Transmission Assets in **section 10.12**
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 of NPS EN-1]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9** and have been set out in detail within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).
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 and 5.10.27 of NPS EN-1]	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design incorporating native and locally characteristic species and features is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site. For example, filling in gaps in existing tree and hedge lines may mitigate the impact when viewed from a more distant vista. [Paragraph 5.10.28 of NPS EN-1]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9** and do not include offsite planting. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3)
An energy infrastructure project will have a direct effect on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development. Given the likely locations of energy infrastructure projects there may be particular effects on open space including green and blue infrastructure. [Paragraph 5.11.1 of NPS EN-1]	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of existing or proposed land uses within the vicinity of the Onshore Order Limits. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9** , including removal and replacement of trees, hedgerows, grassland and ponds.
Public Rights of Way, National Trails, and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders. The Secretary of State should expect	The potential landscape and visual effects of the Transmission Assets on amenity of PRoW, including long distance recreational routes, and other rights of access to land including beaches are

Summary of NPS provision	How and where considered in the ES
applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve or create new access. In considering revisions to an existing right of way, consideration should be given to the use, character, attractiveness, and convenience of the right of way. [Paragraph 5.11.30 of NPS EN-1]	identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The potential impacts of the Transmission Assets on the use and convenience of PRoW and beaches are considered in Volume 3, Chapter 6: Land use and recreation of the ES.
The Secretary of State should consider whether the mitigation measures put forward by an applicant are acceptable and whether requirements or other provisions in respect of these measures should be included in any grant of development consent. [Paragraph 5.11.31 of NPS EN-1]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
NPS EN-3 Provisions relevant to this chapter	
When considering applications for CNP [critical national priority] 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 of NPS EN-3]	The landscape and visual baseline is identified in **section 10.7** and assessed in **section 10.12**. There are no landscape designations such as National Parks, AONBs, NLs, Registered Parks and Gardens within the Order Limits. The need for the Transmission Assets, as CNP is explained in the Planning Statement (document reference J28).
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 project to mitigate impacts such as noise and effects on ecology and heritage. [Paragraph 2.5.2 of NPS EN-3]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. Opportunities to benefit ecology and biodiversity through good landscape design have been adopted within the Project. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
Applicants should follow relevant guidance including, but not limited to seascape and landscape character assessments, 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 of NPS EN-3]	The assessment of landscape and visual resources has been undertaken in accordance with the methodology set out in Volume 1, Chapter 5: Environmental assessment methodology of the ES in addition to the guidance set out in **section 10.2.3**. The methodology used for the assessment of landscape and visual resources, including the significance criteria used is provided in **section 10.11**. A detailed explanation of the assessment methodology in accordance with GLVIA3 (Landscape Institute and IEMA, 2013) is provided in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.
As part of the [S]LVIA, photomontages will be required. Viewpoints to be used for the [S]LVIA	Photomontages have been produced for each of the representative viewpoints identified and are presented in Figure 10.5 (see Volume 3, Figures).

Summary of NPS provision	How and where considered in the ES
should be selected in consultation with the statutory consultees at the EIA Scoping stage. [Paragraph 2.8.210 of NPS EN-3]	Viewpoints have been selected in consultation with relevant statutory consultees prior to submission of the Development Consent Order (DCO) application. Consultation undertaken to date relevant to the assessment of landscape and visual resources is presented in **section 10.3**.
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 [S]LVIA. [Paragraph 2.8.211 of NPS EN-3]	The assessment of landscape and visual resources has been undertaken in accordance with the methodology set out in Volume 1, Chapter 5: Environmental assessment methodology of the ES in addition to the guidance set out in **section 10.2.3**. The methodology used for the assessment of landscape and visual resources, including the significance criteria used is provided in **section 10.11**.
Where appropriate, cumulative [S]LVIA 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 of NPS EN-3]	The potential cumulative landscape and visual effects of the Transmission Assets are considered in section **10.14**.
Where adverse effects are anticipated either during the construction or operational phases, in coming to a judgement the Secretary of State should consider the extent to which the effects are temporary or reversible. [Paragraph 2.8.352 of NPS EN-3]	The potential landscape and visual effects during construction, operation and maintenance and decommissioning the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the temporary or reversible nature of potential impacts when determining the overall likely significance effect, where appropriate.
NPS EN-5	
There will usually be a degree of flexibility in the location of the development's associated substations, and applicants should consider carefully their placement in the local landscape, as well as their design. [Paragraph 2.2.8 of NPS EN-5]	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and the Outline Design Principles document (document reference J3).
In particular, the applicant should consider such characteristics as the local topography, the possibilities for screening of the infrastructure and/or other options to mitigate any impacts. (See Section 2.10 of NPS EN-5 and Section 5.10 in EN-1). [Paragraph 2.2.9 of NPS EN-5]	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
As well as having duties under Section 9 of the Electricity Act 1989, (in relation to developing and maintaining an economical and efficient network), applicants must take into account Schedule 9 to the Electricity Act 1989, which places a duty on all	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1,

Summary of NPS provision	How and where considered in the ES
transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to "have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and …do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects. [Paragraph 2.2.10 of NPS EN-5]	Chapter 4: Site selection and consideration of alternatives of the ES. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
New substations, sealing end compounds (including terminal towers), and other above-ground installations that serve as connection, switching, and voltage transformation points on the electricity network may also give rise to adverse landscape and visual impacts. [Paragraph 2.9.9 of NPS EN-5]	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of above ground infrastructure, such as the onshore substations. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
The Horlock Rules – guidelines for the design and siting of substations – were established by National Grid in 2009 in pursuance of its duties under Schedule 9 to the Electricity Act 1989. These principles should be embodied in applicants' proposals for the infrastructure associated with new overhead lines. [Paragraph 2.9.18 of NPS EN-5]	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES.
In such cases the Secretary of State should only grant development consent for underground or subsea sections of a proposed line over an overhead alternative if they are satisfied that the benefits accruing from the former proposal clearly outweigh any extra economic, social, or environmental impacts that it presents, the mitigation hierarchy has been followed, and that any technical obstacles associated with it are surmountable. In this context it should consider: • the landscape and visual baseline characteristics of the setting of the proposed route, in particular, the impact on high sensitivity visual receptors (as defined in the current edition of the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment), residential areas, designated landscapes, valued landscapes, designated heritage assets and Heritage Coasts (including, where relevant, impacts on the setting of designated features and areas), noting the policy in EN-1 section 5.4.53 on regional and local designations. [Paragraph 2.9.25 of NPS EN-5]	The baseline assessment for landscape and visual resources is provided in **section 10.7**, which considers landscape character, visual receptors, residential areas, designated landscapes and valued landscapes. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
Furthermore, since long-term management of the selected mitigation schemes is essential to their mitigating function, a management plan, developed at least in outline at the conclusion of the	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.

Summary of NPS provision	How and where considered in the ES
examination, and which sets out proposals within a realistic timescale, should secure the integrity and benefit of these schemes. [Paragraph 2.10.8 of NPS EN-5]	The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
The Secretary of State should be satisfied that the development, so far as is reasonably possible, complies with the Holford and Horlock Rules (please see paragraphs 2.9.16 - 2.9.19) or any updates to them. [Paragraph 2.11.2 of NPS EN-5]	Justification for the location of the Transmission Assets, and their compliance with Horlock Rules, including a description of the design and/or environmental constraints considered as part of the iterative site selection process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES.
In circumstances where it can be demonstrated that a mitigation measure and/ or technological approach is appropriate and/ or necessary for a project, including to limit landscape and visual impact as set out above, the Secretary of State should take this into account in decision making. [Paragraph 2.11.4 of NPS EN-5]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
Nationally designated landscapes have specific statutory purposes which help ensure their continued protection. The Secretary of State should have special regard to nationally designated landscapes, where the general presumption in favour of overhead lines should be reversed to favour undergrounding. [Paragraph 2.11.5 of NPS EN-5]	The Onshore Order Limits are not located within or near any nationally designated landscapes (e.g., National Parks, NLs) (see **section 10.7.4**).
Away from these protected landscapes and in locations where there is a high potential for widespread and significant adverse landscape and/or visual impacts, the Secretary of State should be satisfied that the applicant has provided evidence to support a decision on whether undergrounding is or is not appropriate, having considered this on a case-by-case basis, weighing the considerations in paragraph 2.9.24 [of NPS EN-5]. [Paragraph 2.11.6 of NPS EN-5]	Justification for undergrounding, including a description of the environmental constraints considered as part of the iterative site selection process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. The potential landscape and visual effects of the Transmission Assets are identified in section 10.6 and assessed in section 10.12, setting out the levels of effect and if widespread and significant adverse effects are likely. .
In the assessments of their designs, applicants should demonstrate:[…] • how environmental, community and other impacts have been considered and how adverse impacts have followed the mitigation hierarchy i.e. avoidance, reduction and mitigation of adverse impacts through good design; and • For designated landscapes the principal mitigation measure, as established by the Holford Rules, should be to seek to avoid landfall in these areas. [Paragraph 2.14.2 of NPS EN-5]	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. The Transmission Assets are located outside designated landscapes. Landscape proposals and how they mitigate adverse impacts on landscape character and visual amenity are assessed in section 10.12 and 10.13 of Chapter 10 ES. . The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).

The National Planning Policy Framework

10.2.2.6 The National Planning Policy Framework (NPPF) was published in 2012 and updated in 2018, 2019, 2021 and 2023 (Ministry of Housing, Communities and Local Government, 2024).The NPPF sets out the Government's planning policies for England.

10.2.2.7 **Table 10.3** sets out a summary of the NPPF policies relevant to this chapter. The NPPF has been updated and the draft version was published for consultation on 30 July 2024 with the consultation period ending on 24 September 2024 (Ministry of Housing, Communities and Local Government, 2024).

Table 10.3: Summary of NPPF requirements relevant to this chapter

Policy	Key provisions	How and where considered in the ES
2. Achieving sustainable development	To protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy. [Paragraph 8 of the NPPF]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
3. Plan-making	Strategic policies should set out an overall strategy for the pattern, scale and design quality of places, (to ensure outcomes support beauty and placemaking), and make sufficient provision for: … conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation. [Paragraph 20 of the NPPF]	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).
12. Achieving well designed and beautiful places	Planning policies and decisions should ensure that developments:[…] • are visually attractive as a result of good architecture, layout and appropriate and effective landscaping; • are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities); and • create places that are safe, inclusive and accessible and which promote health and well-being, with a high	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3).

Policy	Key provisions	How and where considered in the ES
	standard of amenity for existing and future users. [Paragraph 135 of the NPPF].	
	Design quality should be considered throughout the evolution and assessment of individual proposals. Early discussion between applicants, the local planning authority and local community about the design and style of emerging schemes is important for clarifying expectations and reconciling local and commercial interests. Applicants should work closely with those affected by their proposals to evolve designs that take account of the views of the community. Applications that can demonstrate early, proactive and effective engagement with the community should be looked on more favourably than those that cannot. [Paragraph 137 of the NPPF].	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and the Outline Design Principles document (document reference J3). Consultation between the Applicants and relevant local planning authorities and local communities regarding the design of the Transmission Assets has taken place at several stages prior to submission of the DCO application. Consultation undertaken to date relevant to the assessment of landscape and visual resources is presented in **section 10.3**.
13. Protecting Green Belt land	The government attaches great importance to Green Belts. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence. [Paragraph 142 of the NPPF].	Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figure 10.3 and 10.4). Wider environmental benefits associated with the production of energy are addressed in Volume 1, Chapter 2: Policy and legislation context of the ES. The Green Belt is also discussed in the Planning Statement (document reference J28).
	When located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources. [Paragraph 156 of the NPPF].	Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figure 10.3 and 10.4). Wider environmental benefits associated with the production of energy are addressed in Volume 1, Chapter 2: Policy and legislation context of the ES. The Green Belt is also discussed in the Planning Statement (document reference J28).
14. Meeting the challenge of climate change, flooding and coastal change	To help increase the use and supply of renewable and low carbon energy and heat, plans should: provide a positive strategy for energy from these sources, that maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that adverse impacts are addressed	The potential cumulative landscape and visual effects between the Transmission Assets and other plans and projects are considered in **section 10.14**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.

Policy	Key provisions	How and where considered in the ES
	appropriately (including cumulative landscape and visual impacts). [Paragraph 160 of the NPPF].	
15. Conserving and enhancing the natural environment	Planning policies and decisions should contribute to and enhance the natural and local environment by: • protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); • recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; and • maintaining the character of the undeveloped coast, while improving public access to it where appropriate. [Paragraph 180 of the NPPF]	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of valued landscapes and their character. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
	Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. [Paragraph 182 of the NPPF]	The Onshore Order Limits are not located within or near any National Parks, NLs or the Broads. The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
	When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty [NL], permission should be refused for major development, other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. [Paragraph 183 of the NPPF]	The Onshore Order Limits are not located within or near any National Parks or NLs.
	Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential	The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the potential for light pollution on the rural/urban fringe landscape context and local amenity and

Policy	Key provisions	How and where considered in the ES
	sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:[….] • limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.	intrinsically dark landscapes, where relevant.

10.2.2.8 The consultation draft includes similar provisions as the designated NPPF. The consultation draft NPPF has been reviewed and there are no material updates for Landscape and visual resources.

10.2.2.9 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2023) supports the NPPF and provides guidance across a range of topic areas.

10.2.2.10 The PPG provides guidance with respect to consideration of landscape character, the Green Belt and light pollution.

10.2.2.11 The Natural Environment section of the PPG emphasises the importance of conserving and enhancing the landscapes, including nationally and locally-designated landscapes and the wider countryside.

10.2.2.12 The renewable and low carbon energy section of the PPG provides identifies planning policies of relevance to renewable energy projects, including the assessment of landscape and visual effects associated with particular technologies, such as offshore wind farms and associated infrastructure.

Marine policy

UK Marine Policy Statement

10.2.2.13 **Table 10.4** sets out a summary of the policies set out in the UK Marine Policy Statement (MPS) (HM Government, 2011) relevant to this chapter of the ES.

10.2.2.14 Relevant policy set out in the Welsh National Marine Plan (Welsh Government, 2019) was previously considered in the Preliminary Environmental Information Report (PEIR) for the Transmission Assets submitted in October 2023. However, as described in **section 10.4**, the study area for assessment of landscape and visual resources no longer coincides with Welsh waters. As such, the Welsh National Marine Plan has not been considered further in this chapter of the ES.

Table 10.4: UK MPS policies relevant to landscape and visual resources

Key provisions	How and where considered in the ES
UK Marine Policy Statement	
The effects of activities and developments in the marine and coastal area on the landscape, including seascape, will vary on a case-by-case basis according to the type of activity, its location and its setting. There is no legal definition for seascape in the UK but the European Landscape Convention (ELC) defines landscape *as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'*. In the context of this document, 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. [Paragraph 2.6.5.1 of the UK MPS].	The identification of coastal landscape receptors, as defined in European Landscape Convention, is provided in **section 10.7**. The effects of activities and developments in the coastal area associated with construction, operation and maintenance and decommissioning of the Transmission Assets on landscape and visual resources are considered in **section 10.12**.
When developing Marine Plans, marine plan authorities should consider at a strategic level visual, cultural, historical and archaeological impacts not just for those coastal areas that are particularly important for seascape, but for all coastal areas, liaising with terrestrial planning authorities as necessary. In addition, any wider social and economic impacts of a development or activity on coastal landscapes and seascapes should be considered. [Paragraph 2.6.5.2 of the UK MPS].	The effects within the coastal area during construction, operation and maintenance and decommissioning of the Transmission Assets on landscape and visual resources are considered in **section 10.12**. The cultural, historical and archaeological impacts of the Transmission Assets within the offshore and onshore environment and are considered in Volume 2, Chapter 8: Marine archaeology and Volume 3, Chapter 5: Historic environment of the ES respectively. The social and economic impacts of the Transmission Assets are considered in Volume 4, Chapter 2: Socio-economics of the ES.
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 of the UK MPS]	Existing landscape assessments and related studies (where relevant) are identified in **section 10.7** and assessed in **section 10.12**. Further information regarding the baseline landscape character, including landscape character assessment and related studies is provided in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES.
For any development proposed within or relatively close to nationally designated areas the marine plan authority should have regard to the specific statutory purposes of the designated areas. The design of a development should be taken into account as an aid to mitigation. [Paragraph 2.6.5.4 of the UK MPS]	The Onshore Order Limits are not located within or close to nationally designated areas for seascape/landscape (see **section 10.7.4**).

North West Inshore and North West Offshore Marine Plan

10.2.2.15 **Table 10.5** sets out a summary of the specific policies set out in the North West Inshore and North West Offshore Marine Plan (HM Government, 2021) relevant to this chapter.

Table 10.5: Summary of inshore and offshore marine plan policies relevant to this chapter

Policy	Key provisions	How and where considered in the ES
NW-CE-1	Proposals which may have adverse cumulative effects with other existing, authorised, or reasonably foreseeable proposals must demonstrate that they will avoid, minimise or mitigate adverse cumulative or in-combination effects so they are no longer significant.	The potential cumulative landscape and visual effects between the Transmission Assets and other plans and projects are considered in **section 10.14**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
NW-CO-1	Proposals that optimise the use of space and incorporate opportunities for co-existence and co-operation with existing activities will be supported. Proposals that may have significant adverse impacts on, or displace, existing activities must demonstrate that they will, in order of preference a) avoid b) minimise c) mitigate adverse impacts so they are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals must state the case for proceeding.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
NW-SCP-1	Proposals should ensure they are compatible with their surroundings and should not have a significant adverse impact on the character and visual resource of the seascape and landscape of the area. The location, scale and design of proposals should take account of the character, quality and distinctiveness of the seascape and landscape. Proposals that may have a significant adverse impact on the seascape and landscape of the area should demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate adverse impacts If it is not possible to mitigate the public benefits for proceeding with the proposal must outweigh significant adverse impacts to the seascape and landscape of the area. Proposals within or relatively close to nationally designated areas should have regard to the specific statutory purposes of the designated area. Great weight should be given to conserving and enhancing landscape and scenic beauty in National	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. The potential cumulative landscape and visual effects between the Transmission Assets and other plans and projects are considered in **section 10.14**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The Onshore Order Limits are not located within or near any nationally designated areas for landscape (see **section 10.7.4**).

Policy	Key provisions	How and where considered in the ES
	Parks and Areas of Outstanding Natural Beauty	

Local planning policy

10.2.2.16 The onshore elements of the Transmission Assets are located within the administrative areas of Fylde Council, Blackpool Council, South Ribble Borough Council and Preston City Council (and Lancashire County Council at the County level).

10.2.2.17 The relevant local planning policies applicable to landscape and visual resources based on the extent of the study areas for this assessment are summarised in **Table 10.6**. The policies are provided in full within Volume 3, Annex 10.1: Landscape and visual resources planning policy context of the ES.

Table 10.6: Summary of local planning policy relevant to this chapter

Policy	Key provisions	How and where considered in the ES
Blackpool Local Plan Part 1: Core Strategy 2012-2027		
CS10: Sustainable Design and Renewable and Low Carbon Energy	To ensure that renewable energy schemes are located appropriately and do not cause an unacceptable impact on surrounding uses or the local environment, landscape character or visual appearance.	Impacts during construction, operation and maintenance and decommissioning of the Transmission Assets on landscape and visual resources are considered in **section 10.12**.
Blackpool Local Plan Part 2: Site Allocations and Development Management Policies		
Policy DM21: Landscaping	Applications should include details of hard and soft landscaping.	The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).
Policy DM32: Wind Energy	Application should provide assessment on the 'natural environment', and where necessary, appropriate mitigation or enhancement provided. The application should take account of the cumulative effect that would result from the proposal in conjunction with permitted and existing renewable energy schemes.	The potential landscape and visual effects of the Transmission Assets are assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The potential cumulative landscape and visual effects between the Transmission Assets and other plans and projects are considered in **section 10.14**.
Blackpool Local Plan 2001-2016 – Saved Policies		
Policy LQ6: Landscape Design and Biodiversity	Applications should incorporate appropriate landscaping wherever possible.	The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).

Policy	Key provisions	How and where considered in the ES
Policy LQ7: Strategic views	Development that has a detrimental impact on strategic views will not be permitted, including along the seafront and coastline and on local views of listed buildings.	Assessment of views of listed buildings and the coast in the context of visual amenity are described in **section 10.12.**
Fylde Local Plan to 2032 (Incorporating Partial Review)		
Strategic Policy CL3: Renewable and Low Carbon Energy Generation – excluding onshore wind turbines	Proposed developments will need to be assessed both cumulatively as isolation on landscape character and value, and visual impact from a wide range of vantage points (in accordance with Policy ENV1).	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.12**. This includes consideration of valued landscapes and their character. The potential cumulative landscape and visual effects between the Transmission Assets and other plans and projects are considered in **section 10.14**.
Strategic Policy ENV1: Landscape	Development will have regard to its visual impact within its landscape context and the landscape type in which it is situated. Development will be assessed to consider whether it is appropriate to the landscape character, amenity and tranquillity within which it is situated, as identified in the Lancashire Landscape Character Assessment, December 2000. A landscape buffer is required to limit the visual impact. Any proposed planting will ensure that existing landscape features will be conserved, maintained, protected and wherever possible enhanced.	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.12**. This includes consideration of valued landscapes and their character. The Lancashire Landscape Character Areas (Lancashire County Council (2020)) identified within the study area are shown in Figure 1.1 of Volume 3, Annex 10.2: Landscape character baseline technical report of the ES. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).
Strategic Policy ENV5: Historic Environment	Proposals for development should conserve, protect and, where appropriate, enhance the character, appearance, significance and historic value of Fylde's designated and undesignated heritage assets.	Nearby listed buildings and conservation areas are described in **Table 10.12** and are assessed in the context of visual amenity in **section 10.12**. Impacts on cultural heritage are assessed in Volume 3, Chapter 5: Historic Environment of the ES.
Strategic Policy GD2: Green Belt	Applications will be assessed in accordance with national policy for development in the Green Belt.	Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figure 10.3 and 10.4). The Green Belt is also discussed in the Planning Statement (document reference J28).
Strategic Policy GD3: Area of Separation	Development will be assessed in terms of its impact upon the Kirkham and Newton Area(s) of Separation.	Similarly to the Green Belt, the Kirkham and Newton Area of Separation is identified for context in Figure 10.3 and Figure 10.4 (see Volume 3, Figures). It is assessed in the Planning Statement (document reference J28).

Policy	Key provisions	How and where considered in the ES
Strategic Policy GD7: Achieving Good Design in Development	Protect existing landscape features and natural assets as an integral part of the development.	The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).
Central Lancashire Local Plan		
Policy 16: Heritage Assets	Protect and seek opportunities to enhance the historic environment, heritage assets and their settings by safeguarding heritage assets from inappropriate development.	Nearby listed buildings and the Marton Moss Conservation Area are described in **Table 10.12** and are assessed in the context of visual amenity in **section 10.12**. Impacts on cultural heritage are assessed in Volume 3, Chapter 5: Historic Environment of the ES.
Policy 21: Landscape Character Areas	New development will be required to be well integrated into existing settlement patterns, appropriate to the landscape character type.	Landscape character is assessed in **section 10.12**.
Policy 28: Renewable and Low Carbon Energy Schemes	Proposals for renewable and low carbon energy schemes will be supported and planning permission granted where the proposal would not have an unacceptable impact on landscape character and visual appearance of the local area, including the urban environment.	Landscape character and visual impact is assessed in **section 10.12**.
South Ribble Local Plan 2015		
Policy G1: Green Belt	Permission will not be given for the construction of new buildings unless there are very special circumstances.	Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figure 10.3 and 10.4). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28).
Policy G13: Trees, woodland and development	Planning permission will not be permitted where the proposal adversely affects trees, woodlands and hedgerows which are protected by Tree Preservation Orders (TPOs), Ancient Woodland, in a Conservation Area or within a recognised Nature Conservation Site.	Tree survey information and an assessment of the impact of the Transmission Assets on trees is provided in Volume 3, Annex 10.5: Tree survey and arboricultural impact assessment of the ES. This considers Tree Preservation Orders, Ancient Woodland and Lytham St Annes Dunes SSSI and LNR.

Policy	Key provisions	How and where considered in the ES
Policy G17: Design Criteria for New Development	Considers that where there is a detrimental impact on landscape features such as mature trees or hedgerows, it may be acceptable to remove one or more of these features, but mitigation measures to replace the feature/s will be required either on or off-site.	Tree removal and retention is assessed in Volume 3, Annex 10.5: Tree survey and arboricultural impact assessment of the ES. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).
Preston Local Plan 2012-26		
Policy EN3 – Future Provision of Green Infrastructure	All developments will, where necessary, provide appropriate landscape enhancements.	The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and the Outline Design Principles document (document reference J3).

10.2.3 Relevant guidance

10.2.3.1 The assessment of landscape and visual resources has been undertaken based on the guidance on landscape and visual impact assessment within GLVIA3 (Landscape Institute and IEMA, 2013), and draws on other, relevant best practice guidance including the following:

- Technical Guidance Note 02/21: Assessing landscape value outside national designations (Landscape Institute, 2021);
- Technical Guidance Note 06/19: Visual Representation of Development Proposals (Landscape Institute, 2019);
- Topic Paper 6: Techniques and Criteria for judging Capacity and Sensitivity (Countryside Agency and Scottish Natural Heritage, 2004);
- An Approach to Landscape Character Assessment (Natural England, 2014a);
- Assessing the Cumulative Landscape and Visual Impacts of Onshore Wind Energy Developments (NatureScot, 2022); and
- Visual Representation of Wind farms, Guidance (Version 2.2) (NatureScot, 2017).

10.2.3.2 The full list of relevant guidance documents is provided in section 1.3 of Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.

10.2.3.3 In addition, the assessment of landscape and visual resources has considered the relevant legislative and policy framework as identified in **Table 10.1.**

10.2.3.4 A detailed description of methodology used for the assessment of landscape and visual resources for the Transmission Assets, based on GLVIA3 (Landscape Institute and IEMA, 2013), is provided in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.

10.3 Consultation

10.3.1 Scoping

10.3.1.1 On 28 October 2022, the Applicants submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction, operation and maintenance, and decommissioning phases of the Transmission Assets.

10.3.1.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 8 December 2022.

10.3.2 Statutory consultation responses

10.3.2.1 The preliminary findings of the EIA process were published in the PEIR in October 2023. The PEIR was prepared to provide the basis for formal consultation under the Planning Act 2008. This included consultation with statutory and non-statutory bodies under section 42 and 47 of the Planning Act 2008, as presented in **Table 10.7**.

10.3.3 Summary of consultation responses received

10.3.3.1 A summary of the key items raised specific to landscape and visual resources is presented in **Table 10.7**, together with how these have been considered in the production of this chapter. It should however be noted that formal responses are provided for all consultation responses received and can be accessed in the Consultation Report (document reference E1).

Table 10.7: Summary of key consultation comments raised during consultation activities undertaken for the Transmission Assets relevant to landscape and visual resources

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
December 2022	Planning Inspectorate - Scoping Opinion	The Inspectorate notes the intention to establish a ZTV to determine the extent of the study area and underpin the assessment of impacts on landscape and visual resources. Provided that the ZTV is robust, the Inspectorate considers that significant effects are unlikely beyond this area. However, the Inspectorate considers that there is potential for visual impacts outside of ZTV from sensitive receptors capable of long-distance views, such as Blackpool Tower. The ES should demonstrate how the ZTV has been established, including the outcomes of consultation. The Applicants should seek to agree the extent of the ZTV with relevant consultation bodies as well as the number and location of specific sensitive visual receptors beyond the established study area [ID 3.19.1 of the Scoping Opinion].	The extent of the study areas, 5 km buffer from the outer edge of the onshore substation sites and the 1 km buffer from the outer edge of the landfall and onshore export cable corridor/400 kV grid connection corridor, are shown on Figure 10.1 (see Volume 3, Figures). The onshore substations ZTV is shown on Figure 10.2 and is described/ analysed in Section 10.5. The ZTV has several limitations and requires field verification. It should considered that the main factor to the magnitude of change is the effect of distance and this cannot be modelled in the ZTV and as a result, the extent of actual visibility experienced on-the-ground would be considerably less than is suggested by the ZTV pattern. ZTVs and representative viewpoint locations were shared with consultees to seek agreement on the appropriate viewpoints to inform the EIA process (see **Table 10.7**). The study area extent has been formulated in accordance with relevant best practice guidance, in particular GLVIA3.
		Impacts of the export cables on seascape and landscape character and visual resources during operation and maintenance: The Scoping Report proposes to scope this matter out on the basis that the offshore and onshore export cables would be fully submerged or buried underground during operation and maintenance. The Inspectorate agree this matter can be scoped out as significant effects are unlikely to occur [ID 3.19.2 of the Scoping Opinion].	As identified in **section 10.8**, the impacts of the export cables on landscape character and visual resources during operation and maintenance of the Transmission Assets has been scoped out of the assessment.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		Impacts of decommissioning the offshore and onshore export cables on seascape and landscape character and visual resources: The Inspectorate is of the opinion that provided the offshore and onshore export cables remain in-situ during and after the decommissioning phase, significant effects are unlikely, and this matter can be scoped out of further assessment [ID 3.19.3 of the Scoping Opinion].	As identified in **section 10.8**, the impacts of decommissioning the offshore and onshore export cables on landscape character and visual resources has been scoped out of the assessment.
November 2023	Natural England - Statutory consultation response	The design, implementation and monitoring of landscape mitigation must be robust and appropriate. This is vitally important, not only around the buildings, but also along cable laying routes as the landscape can suffer in the long-term from this level of disruption. The land can settle to a level which is ununiform to the surrounding landform and so create rises and falls which are not organic to the surrounding landscape.	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. Outline Code of Construction Practice (document reference J1) and the Outline Landscape Management Plan (document reference J2) set out measures proposed to mitigate potential impacts on landscape and visual resources during construction and operation of the Transmission Assets respectively.
		Around the buildings, new planting should be native and aim to replicate the surrounding species where possible. This is particularly applicable to screening tree planting and hedge-laying. Landscape design work should be carried out in conjunction with the BNG.	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The outline landscape design is set out within the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3). The Outline Landscape Management Plan includes proposals for landscape planting (e.g., trees hedgerows), which would utilise native species.
November 2023	Natural England - Annex 8 Statutory consultation response	The maximum design scenarios (worst case scenarios) have been identified through the use of the Project Design Envelope (PDE) or ‘‘Rochdale Envelope’ approach. Whilst there is flexibility within this approach, emphasis should be placed on firstly avoiding the impact of the development on the landscape. In clearly identifying these maximum design scenarios (such as visual detractors around the substations, or the disruption to or loss of the	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and the Outline Design Principles document (document reference J3).

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		landscape/habitats during the laying of cables in the construction phase), the impacts of the proposal should be assessed in terms of real-life consequences for localised environs, wildlife and people. Once a maximum design scenario has been identified, it is necessary to consider location, magnitude and timing to bring all elements into the assessment of significance. Where avoidance of the impact is not possible, cascading down to reducing and then mitigating the impact should be the standard approach and these should be considered during the detailed design phase. The submitted ES should clearly present the impacts of the proposal without mitigation and then once mitigation has been applied.	The Maximum Design Scenarios (MDS) for the assessment of landscape and visual effects is provided in **Table 10.18**. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the ES. The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. The assessment has considered the location, magnitude and timing of effects where relevant. In addition, the assessment has described effects on landscape and visual resources during the day and at night, during the winter months and summer months. The effects of construction, operation and maintenance and decommissioning of the Transmission Assets of landscape and visual resources are described in **section 10.12** with mitigation and without mitigation in place (i.e., residual effects. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
November 2023	Natural Resources Wales (NRW) - Statutory consultation response	Based on the nature of the proposals NRW (A) are satisfied with the study areas (Vol 4 Figure 1.1 [of the PEIR]) used for the assessment of landscape and visual effects (Vol 4 Chapter 1 [of the PEIR]). As these do not overlap with statutory designated landscapes in Wales, we don't have any comments.	The study area used for the assessment landscape and visual resources is described in **section 10.4**. The location and geographic extent of the landscape and visual resources study area is presented in Figure 10.1 (see Volume 3, Figures).
November 2023	Cadw - Statutory consultation response	These proposed windfarms will not have a direct impact on any historic assets in Wales or in Welsh waters. The nearest any of the masts will be to the Welsh coast is over 50km away. As such it would be only in exceptional circumstances (if then) that the windfarms will be visible from Wales and therefore we do not envisage that the proposed wind farms will have any significant impact on the settings of any designated historic assets in Wales.	The study area used for the assessment landscape and visual resources is described in **section 10.4**. The location and geographic extent of the landscape and visual resources study area is presented in Figure 10.1 (see Volume 3, Figures).

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
November 2023	Canal and River Trust - Statutory consultation response	Based on the details it would appear that the substations and above ground infrastructure will be set well away from our assets. As the cabling will be installed underground then the longer-term visual impacts would likely be limited. The main visual impact will therefore be during the construction phase in relation to our interests. The Landscape and Visual Impact Assessment (LVIA) needs to consider the impact on boaters/towpath users as sensitive receptors. The waterway users will pass the position of the crossings at a relatively low speed so will be susceptible to changes to the local landscape which need to be considered. We would welcome the waterway crossing of Savick Brook to be assessed via the LVIA. Any construction compounds near the river corridor should consider views during the construction phase and efforts should be made to minimise any visual impact. We would ask that the design for the crossing of the waterway are shared with the Trust at an early stage so that we can review the design in principle and its appropriateness within the waterways setting. This should also include any landscape design work associated with the works that could have visual impacts upon setting or character, for example parcels of screening vegetation buffers.	The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the landscape and visual effects of the Transmission Assets on boaters/towpath users of waterways, where appropriate. In addition, the assessment of landscape and visual effects presented in **section 10.12** has been undertaken for all elements of the Transmission Assets, including permanent (e.g. onshore substations) and temporary infrastructure (e.g. construction compounds) during the construction, operation and maintenance and decommissioning phase, where relevant. In accordance with Commitment (CoT) 02, the designs for the crossing of Savick Brook will be undertaken by trenchless techniques.
November 2023	Environment Agency (National Infrastructure Team) – Statutory consultation response	Measures required to manage environmental risks have yet to be fully addressed, which present a risk to the environment. Outline versions of various Plans to manage environmental risks to be appended to the Outline Code of Construction Practice and secured in the DCO submission.	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. Outline Code of Construction Practice (document reference J1) and the Outline Landscape Management Plan (document reference J2) set out measures proposed to mitigate potential impacts on landscape and visual resources during construction and operation of the Transmission Assets respectively.
November 2023	Blackpool Council – Statutory consultation response	Blackpool Council declared a Climate Change Emergency in June 2019 and is committed to ensuring that approaches to planning decision-making are in line with a shift to zero	The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. As stated in **section 10.8**, the offshore elements included

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		carbon by 2030.The Council recognises the importance of renewable energy generation and is therefore supportive of the proposal in principle. It is understood that the development would be visible from the Blackpool Promenade which includes a number of heritage assets including the Grade I Listed Blackpool Tower Building. Appropriate account of this should be taken as part of a Landscape and Visual Impact Assessment. Otherwise it is understood that the development would not directly affect land within the Blackpool borough boundary with landfall being made within the borough of Fylde and cable routing being through that borough.	in the PEIR, which would have been visible from Blackpool Promenade, have been scoped out of the assessment of landscape and visual resources. As such, the potential landscape and visual effects of the Transmission Assets on the Blackpool Promenade has not been considered further in this chapter of the ES.
November 2023	Fylde Council – Statutory consultation response	Both substation sites are both located entirely within the designated Green Belt. There is no evidence contained within the documentation that demonstrates how the site selection process has been carried out and why it is necessary to locate these very large structures in the greenbelt. On the contrary, the site selection criteria set out above has not been followed in selecting the site. Instead, there appears to be a reliance on being able to demonstrate very special circumstances, but before jumping to this justification, Fylde Council considers that alternative sites located outside the Green Belt must be first considered.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and Outline Design Principles document (document reference J3). The Green Belt is also discussed in the Planning Statement (document reference J28).
		The impact of development on the openness of the Green Belt is capable of having both spatial and visual aspects. The assessments that have been made appear to rely on the Landscape and Visual Impact Assessment of the visual aspects of the substations. There is little, if any, assessment on the impact of the proposed development on the spatial impact of the development. The visual impact of the proposed substations is addressed further [in Fylde's consultation response], but it is considered that there needs to be further assessment of the spatial impact of the substations on the openness of the Green Belt and its	Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figure 10.3 and 10.4). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28). Planning policy of relevance to the assessment of landscape and visual resources is set out in **section**

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		policy objectives. An assessment of these two aspects of openness is required in order to fully inform the weight to be applied to very special circumstances in reaching the final decision.	**10.2**. This includes consideration of policy requirements associated with the protection of the Green Belt.
		Wherever the substations are located, it is essential that the technology used minimises the need for the substations, the size of the structures required, and/or delivers the structures in a disaggregated form to minimise their visual impact in the landscape.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and Outline Design Principles document (document reference J3).
		The design of the substations has not yet been finalised. However, from the information that is available, it is clear that the massing of the proposed structures required to house the equipment will be significant. Fylde has a flat, rolling, rural character interspersed with limited tree cover (the area of tree cover has been identified as falling within the lowest 10% of all English local authority administrative areas). The visual impact of such large structures in the wider landscape, particularly in the rural area will be significant. The structures will appear as dominant discordant features in the rural landscape. The nature of the landscape will mean that there is little in the way of topographical features that will help integrate the structures into the landscape. Due to the height of the structures, it will not be possible to provide any meaningful landscape screening, particular when viewed across the wider landscape. Further consideration needs to be given to the scale and location of the proposed substations.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and Outline Design Principles document (document reference J3). The baseline landscape and visual environmental is identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. This includes the preparation of a Landscape Management Plan in general accordance with the Outline Landscape Management Plan (document reference J2) submitted with the DCO application. The Outline Landscape Management Plan includes proposals for landscape planting to reduce the effects of the onshore substations on landscape and visual resources during operation of the Transmission Assets.
		In addition to the cumulative impact of the infrastructure required to service the two wind farms, there are a number of development commitments in the locality of the	The assessment of the cumulative effects between the Transmission Assets and other projects and plans is presented in **section 10.14**. The other projects and plans

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		proposed substation sites that need to be taken into consideration in an assessment of cumulative impact on the local community. There are several large scale solar farms which have been constructed recently or have planning permission and are awaiting project initiation. These facilities are generally located in the countryside and their impacts on the local landscape have been carefully assessed. The impact of further large scale utilities will add to that impact. It is considered that the assessment of the visual interrelationship of the proposed substation sites to these neighbouring facilities needs to be developed further.	considered in the assessment of cumulative effects are set out in **Table 10.22**.
November 2023	Lancashire County Council – Statutory consultation response	The Planning application should demonstrate that issues raised by consultees have been addressed. This includes (but is not limited to): Natural England; The Environment Agency; Marine Management Organisation; and Local Planning Authorities.	Consultation undertaken to date relevant to the assessment of landscape and visual resources is presented in **section 10.3**. In addition, **Table 10.7** set outs consultation responses of relevance to the assessment of landscape and visual resources, including how and where these have been considered in this chapter of the ES.
		Survey data submitted with the planning application should be current/up-to-date, in line with recognised guidelines. The survey area should include: The intended location of the development footprint; potential working areas, compounds, storage areas and access routes; any land that may be used within the mitigation, compensation or biodiversity net gain proposals (on or off-site); and a suitable buffer distance, taking account of the likely zone of influence and relevant survey guidelines.	Site specific surveys undertaken to inform the assessment of landscape and visual resources are set out in **section 10.6.2**. The location of site specific surveys were chosen to reflect the landscape and visual resources study area for the Transmission Assets described in **section 10.4**.
		It should be stated how the necessary maintenance and management will be secured for the lifetime of the anticipated planning obligations.	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The Outline Landscape Management Plan (document reference J2) set outs landscape maintenance and management proposals required during operation and maintenance of the Transmission Assets.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		Monitoring measures should be sufficient to measure the success of mitigation and compensation measures, to inform the need for remedial measures and to inform establishment maintenance and long-term management.	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. The Outline Landscape Management Plan (document reference J2) set outs monitoring requirements during operation and maintenance of the Transmission Assets.
November 2023	South Ribble Borough Council – Statutory consultation response	Visual impact and the assumption on proposals within the South Ribble boundary is that subterranean works between Zone 1 infrastructure and Penwortham substation are likely to result in loss of visual amenity, but that this would be a relatively temporary disturbance, and that in time land remediation would occur as land restores. Although few details are available, works would be assumed to be of sufficient depth that use of open agricultural land would be possible in the long term, and that agricultural land would not be permanently sterilised by the development. Visual impact of the proposed infrastructure at Penwortham substation would be significant when viewed from neighbouring residential properties, and concerns have already been received from residents to the Council relating to the height and proximity of the same infrastructure to adjacent properties and including Grade II listed dwelling ,Hesketh Farm. That being said, the proposal does sit against a backdrop of existing substation equipment, and in an extremely secluded, otherwise rural locale. Consideration should however be given to loss of visual amenity generally, but particularly from residential premises.	The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the effects of the onshore substations on the visual amenity of residential properties, where relevant. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. Existing infrastructure or development within the landscape and visual resources study area has been included the baseline assessment, as described in **section 10.7**.
November 2023	Treales, Roseacre and Wharles Parish Council – Statutory consultation response	It is considered at this stage that the development and the approach being adopted proposes an unnecessary, inadequately mitigated blight of a massive industrial complex being chosen to dominate the heart of south Fylde countryside space. The approach will destroy the distinct character of rural communities including Newton, Kirkham, Freckleton and so the wider countryside environment. In	The baseline landscape and visual environment is set out in **section 10.7** and assessed in **section 10.12**. This includes consideration of the effects of the Transmission Assets on landscape and townscape character within the landscape and visual resources study area.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		addition, the scheme currently involves essentially, as yet unmitigated disruption to local communities by contractor activity across at least two decades of the six decade life of the programme across the whole of the Fylde. This is both: directly through adjacency to construction activity; or through ineffective controls of contractor traffic.	Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. This includes the preparation of a Landscape Management Plan in general accordance with the Outline Landscape Management Plan (document reference J2).
		The programme as presented proposes gross industrial development in the countryside, without any apparent attempt to comply with the nationally authorised local development plans. Notably there appears to be no attempt to utilise land already allocated to support such industrial activities in those plans, nor to recognise and give weight to designated Areas of Separation and Green Belt. Nor does there appear to be engagement with the applicable regulators, including local planning, environmental control and National Grid connection bodies to secure mitigated options.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and Outline Design Principles document (document reference J3). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28). Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
		The developer's documentation has currently failed to evidence that they have given weight to, or mitigation of the adverse impacts on the local residents, communities, economies and environments on amenity (disruption and destruction of the rural character of the area).	The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the impacts of the Transmission Assets on visual amenity and landscape and townscape character during the construction, operation and maintenance and decommissioning phase. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
November 2023	St Annes on the Sea Town Council – Statutory consultation response	The two new electricity substations planned, although not directly in St Anne's, are so big, built on Green Belt land, near to two schools, and with a cable width of motorway proportions crossing the heart of Fylde, this will be a blight on our borough starting in St Anne's.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES. The Green Belt is also discussed and assessed in

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
			relation to the very special circumstances within the Planning Statement (document reference J28). The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
		The consultation meetings left many questions unanswered but losing Grade A farmland at the heart of our precious Green Belt, with the wider impact on homes and infrastructure will do real damage to Fylde and St Anne's in particular.	Consultation undertaken to date relevant to the assessment of landscape and visual resources is presented in **section 10.3**. In addition, **Table 10.7** set outs consultation responses of relevance to the assessment of landscape and visual resources, including how and where these have been considered in this chapter of the ES. Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figures 10.4). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28). Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
November 2023	Newton with Clifton Parish Council – Statutory consultation response	The Morgan and Morecambe offshore windfarm generation assets and offshore windfarms transmission assets consultation commenced circa November/December 2022 and postcards were sent to some property addresses in Newton-with-Scales. These postcards did not indicate the potential impact of the proposals. Similarly a non-statutory consultation commenced in April 2023 and again postcards were sent to some property addresses in Newton-with-Scales with no indication of impact. On 25 May 2023 council corresponded with Fylde borough council as the	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of landscape and townscape character and visual amenity, where relevant. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		host authority (FBC) and Lancashire county council (LCC) with regard to its concerns in respect of renewable and low carbon energy generation development proposals and the singular or cumulative effects on the countryside, the character of the landscape, townscape, visual amenity, and the adverse impact on local residents arising from noise and other public nuisance issues with consequential loss of amenity.	The potential effects of the Transmission Assets with respect to noise and vibration are considered in Volume 3, Chapter 8: Noise and vibration of the ES.
		There are several proposed energy projects, solar and wind, at various pre-application stages of consideration that combine to significantly impact on Newton-with-Clifton parish, the Rural East ward of Fylde and the Lancashire County council Fylde East division. The singular or cumulative effects on the countryside, the character of the landscape, townscape, visual amenity, and the adverse impact on local residents arising from noise and other public nuisance issues result in a loss of amenity. It is recognised that while each application must be assessed on its own merits, and that none have been implemented to date it is unclear whether implementation of one affect whether other proposals will receive necessary development consents and permissions	The assessment of the cumulative effects between the Transmission Assets and other projects and plans is presented in **section 10.14**. The other projects and plans considered in the assessment of cumulative effects are set out in **Table 10.22**. The potential effects of the Transmission Assets with respect to noise and vibration are considered in Volume 3, Chapter 8: Noise and vibration of the ES.
		The visual receptor photographs are inadequate and fail to give residents a perspective on what the visual impact of the substations will be. A significant concern of members is visual impact; therefore an artist impressions or scale diagrams should have been available, as previously requested by parish council representatives, to illustrate the extent, and the likely impact, upon visual amenity, leisure, recreational, biodiversity value, tree cover; and the scope for effective mitigation measures. In response to related enquiries the developer has indicated that it is not yet known whether the substations are to be air cooled or gas cooled. The two options [presented within the PEIR] affect the scale and size of the substations and illustrations of the two options should have been available. It is unclear	Photomontages have been produced for each of the representative viewpoints identified and are presented in Figure10.7 (see Volume 3, Figures). Viewpoints have been selected in consultation with relevant statutory consultees and stakeholders prior to submission of the DCO application, including the EIA Scoping Stage.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		what the coloured lines on the photographs signify in terms of the colour, height, and scale. Internet searches fail to provide examples of substations in close proximity to residential property, population density, and schools. Parishioners, school staff and pupils will be subjected to noise and disruption which in some cases could be unfavourable to their health and education.	
		The character of Newton-with-Scales as a small rural village will be irreparably damaged if consent is given for the proposed development. The character of the village which should be protected was outlined by Fylde Borough Council in its opposition to the residential development at Woodlands Close. This initiative will have a greater impact. There are four Grade 2 listed heritage buildings along Grange Lane to the south of Newton-with-Scales. This would be a major change adversely impacting a rural setting by being surrounded by an industrial landscape. Some listed buildings will have an uninterrupted line of sight to the [previous] south substation option. The main footprint of the village will be reduced by the substations, and the construction phase will impact on the lives of villagers for a number of years. The AOS in the Fylde Local Plan was to help protect the character of the village. This large-scale industrial energy generation will indisputably have an adverse impact on the agricultural and rural character of the area.	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of landscape and townscape character and visual amenity, where relevant. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
		There is a large potential cumulative effect on the village of Newton-with-Scales as the proposal states that the Newton Grange Bluefield solar farm development is accommodated by the selection of substation locations. In the interests of transparent consultation there should have been an outline of the potential Bluefield solar farm on the maps/ diagrams as well. Many residents on the west of the village are potentially viewing a large solar farm, and also windfarm substations with a permanent footprint of 185000m^2 in total (size of approximately thirty adult size football pitches) and	The assessment of the cumulative effects between the Transmission Assets and other projects and plans is presented in **section 10.14**. The other projects and plans considered in the assessment of cumulative effects are set out in **Table 10.22**, which includes Newton Grange Bluefield solar farm (planning reference: 22/2024). Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		approximately twenty five metres in height, rather than the Best and Most Versatile (BMV) good quality agricultural land they view now. With the 170-acre solar farm on Clifton Marsh and the expansion of Westinghouse in Clifton and other solar farm developments the area appears to be disproportionally affected.	This includes the preparation of a Landscape Management Plan in general accordance with the Outline Landscape Management Plan (document reference J2) submitted with the DCO application. The Outline Landscape management Plan includes proposals for landscape planting to reduce landscape and visual effects of the onshore substations.
November 2023	Kirkham Town Council – Statutory consultation response	I object to the transformer being built for the following reasons: • Building on Green Belt land and the destruction of the landscape.	Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figures 10.3 and 10.4). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28). It is also discussed in Volume 1, Chapter 4: Site selection and alternatives of the ES. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
November 2023	Freckleton Parish Council Town Council – Statutory consultation response	This embedded figure shows an extract from the Fylde Local Plan to 2032. This clearly shows the areas designated Green Belt and Countryside. Much of the proposed route of the underground cabling and the sites of the proposed sub-stations fall within the Green Belt situated between Freckleton and Kirkham.	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the impacts of the Transmission Assets on openness of the Green Belt and its policy objectives). It is also discussed in Volume 1, Chapter 4: Site selection and alternatives of the ES.
November 2023		Development of the size and type proposed for the sub-stations is not appropriate in the locations proposed and will create permanent harm to the area, even following the completion of the projected build and restoration of land involved in the project.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and Outline Design Principles document (document reference J3).

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
November 2023		The overall conclusion that the Parish Council has reached is that, with the evidence and status presented, we must object to the proposals. The following reasons support this objection: • The impact of the loss of amenity, for both residents and visitors, is considered too high a price to pay for the proposed development, when all possible alternatives have been summarily dismissed for reasons that are unclear.	Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the ES and Outline Design Principles document (document reference J3). The baseline landscape and visual environment is identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the effects of the Transmission Assets on the visual amenity of residents and visitors. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**.
November 2023	Newton Residents Association – Statutory consultation response	No detail is provided about the proposed biodiversity net gain, enhancement and/or mitigation land areas that are described in Volume 1 Chapter 3. It is particularly relevant given that the project proposes significant harm to the Green Belt in this area, and those affected should be able to comment on where the offset land is located.	Further detail regarding the proposed biodiversity benefit, enhancement and/or mitigation land areas within the Onshore Order Limits is provided in Volume 1, Chapter 3: Project description of the ES and Onshore Biodiversity Benefit Statement (document reference J11) . Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figures 10.3 and 10.4). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28). Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. Consultation between the Applicants and relevant local planning authorities and local communities regarding the design of the Transmission Assets has taken place at several stages prior to submission of the DCO

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
			application. Where possible, feedback received has been used to inform the design of the Transmission Assets for the DCO application.
		Volume 4 Chapter 1 Tables 1.6 and 1.14 [of the PEIR] refer to the Area of Separation and state that it is taken into account in section 1.9, but there is no mention of the Area of Separation in section 1.9 [of the PEIR].	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the effects of the Transmission Assets on Areas of Separation, where relevant. The Area of Separation is discussed within the Planning Statement (document reference J28).
		Aside from the flaws with the consultation process, the impact of the substations as proposed - as far as it is set out - is wholly unacceptable on nearby residential properties. In particular: Their visual impact is very significant, and any screening will itself have a visual impact. For example, text starting at paragraph 1.9.6 of Volume 4 [of the PEIR] shows several major and moderate adverse visual impacts from the substations. The cumulative impacts section (Volume 4 chapter 1 [of the PEIR]) states that there are no cumulative visual impacts, when the Bluefield solar farm is proposed to be adjacent to the substations.	The potential landscape and visual effects of the Transmission Assets are identified in **section 10.7** and assessed in **section 10.12**. This includes consideration of the impacts of the Transmission Assets on views from residential properties and visual amenity. Measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. This includes the preparation of a Landscape Management Plan in general accordance with the Outline Landscape Management Plan (document reference J2) submitted with the DCO application. The Outline Landscape Management Plan includes proposals for landscape planting to reduce landscape and visual effects of the onshore substations. The assessment of the cumulative effects between the Transmission Assets and other projects and plans is presented in **section 10.14**. The other projects and plans considered in the assessment of cumulative effects are set out in **Table 10.22**, which includes Newton Grange Bluefield solar farm (planning reference: 22/2024).
		Volume 1 Chapter 4 Clause 4.4.3 of the [PEIR] refers to The National Planning Policy Framework and Table 4.3	Legislation and planning policy of relevance to the assessment of the landscape and visual resources is set

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
		summarises the requirements. In almost every category this project as described is contrary to the principles and advice of the policy. In particular, safeguarding the environment, responding to local character, reflecting the identity of local surroundings, reducing flood risk, protecting and enhancing local landscapes and, importantly, protecting Green Belt land.	out in **section 10.2** and Volume 3, Annex 10.1: Landscape and visual resources planning policy context of the ES. The requirement to safeguard the environment, including local landscape character has informed measures adopted as part of the Transmission Assets to mitigate potential impacts on landscape and visual resources are provided in **section 10.9**. Although not primarily a landscape designation, the Green Belt is identified for context in **section 10.7** and taken into account in the assessment of effects at **section 10.12** (see Volume 3, Figures 10.3 and 10.4). The Green Belt is also discussed and assessed in relation to the very special circumstances within the Planning Statement (document reference J28). It is also discussed in Volume 1, Chapter 4: Site selection and alternatives of the ES.
February 2024	Transmission Assets - Landscape and visual resources - Stakeholder Meeting 1: • Natural England; • Fylde Council; • South Ribble Council; • Lancashire County Council; and • Preston council. Representatives from Blackpool Council, Historic England and West Lancashire council were also invited, but were unable to attend.	The following key items were presented for agreement with the stakeholders: • To remove seascape from the scope of the assessment (i.e. scoping out seascape character and marine based visual receptors) on the basis that the seascape will be covered in the Morgan/ Morecambe Generation DCO applications. This decision was supported by a technical note that was shared with the EWG for review following the meeting; • To agree the onshore substations representative viewpoints presented in the PEIR (subject to different view orientations and micro-siting of locations) and the additional candidate viewpoint locations; • To agree the representative viewpoints/candidate viewpoint locations for the River Ribble crossing; and • To present grey rendered photomontages of main buildings and infrastructure at the onshore substations for all viewpoint locations.	Following Stakeholder Meeting 1, the location of the representative viewpoints were agreed. In addition, it was agreed that seascape should be removed from the scope of the assessment. The scope of the assessment is set out in **section 10.8**. The photomontages and wireline photomontages are presented in Figure 10.5 (see Volume 3, Figures).

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this chapter
September 2024	Transmission Assets - Landscape and visual resources - Stakeholder Meeting 2: • Natural England; • Fylde Council; • South Ribble Council; Preston council and • Historic England	The following key items were presented for discussion with the stakeholders: Design principles Landscape principles Key visualisations Landscape strategy	Clarification was provided in relation to the worst-case scenario modelled into onshore substations photomontages. Clarification provided in relation to the design review process and relevant local authority input.

10.4 Study area

10.4.1.1 It is accepted practice within landscape and visual assessment work that the extent of the study area for a development proposal is broadly defined by the visual envelope of the site and the anticipated extent of visibility arising from the development itself, based on the Zone of Theoretical Visibility (ZTV) study.

10.4.1.2 The study area is defined by the four main elements of the Transmission Assets including the onshore substations, the landfall and the onshore export cable corridor/400 kV grid connection corridor. The LVIA study area is defined as a 1 km radius from the onshore export cable corridor study area and a 5 km radius from the onshore substations i.e., the onshore substations' study area. Based on the ZTV and field surveys, these buffers are considered appropriate to cover all potential material landscape and visual impacts.

10.4.1.3 The extent of the study areas are shown on Figure 10.1 (see Volume 3, Figures) and the onshore substations ZTV is shown on Figure 10.2 and is described/ analysed below in **section 10.5**.

10.5 Zone of Theoretical Visibility (ZTV) study

10.5.1.1 The ZTV study was used to determine which landscape and visual receptors are likely to be affected and merit detailed consideration in the assessment of effects attributable to the onshore substations.

10.5.1.2 The ZTV was produced for onshore substations as shown on Figure 10.2 (see Volume 3, Figures), indicating areas of potential visibility of the proposed substations' buildings modelled on a 15 m height for the Morgan substation and 13 m height for the Morecambe onshore substation at 15 m and 10 m Above Ordnance Datum (AOD), respectively. Due to the slender nature of 30 m high lightning rods and their ability to recede within views of the landscape, these have not been taken into consideration when generating the ZTV. However the lightning rods have been illustrated in photomontages (Figure 10.5), The ZTV analysis was carried out using a topographic model of the study area, which includes an indicative height of 9 m for existing buildings and 12 m for woodland, excluding high hedgerows.

10.5.1.3 The ZTV pattern shown on Figure 10.2 also reflects on the topography of the Study Area and the footprints of the onshore substations' sites which would accommodate the onshore substations. Due to the sites' position on the western side of the Dowe Brook valley, the ZTV spreads immediately around the sites' footprint along the valley sides, mainly comprising the fields in between the settlements of Kirkham to the north/north west, Newton with Scales to the east and Freckleton to the south west.

10.5.1.4 The ZTV pattern is restricted beyond the A583, just 600 m to the north, on the southern edge of Kirkham and 800 m to the east, where the western edge of Newton with Scales falls within the ZTV. To the south east, towards the settlement of Clifton, the ZTV extends across flat land up to the A583/Blackpool Road, which is lined by trees. To the south the spread of the

ZTV is restricted by the A584/Preston New Road and the associated treebelt at a distance of 700 m from the Morecambe onshore substation site. The ZTV spreads further to the south across flat tracts of marshland where trees are generally very scarce, allowing for long views across the landscape to distant factories, hills, farm buildings, pylons and the silhouette of the Bowland Fells on the north eastern horizon.

10.5.1.5 To the south west the ZTV pattern extends up to 600 m, skimming the north eastern edge of the settlement of Freckleton, which is well screened behind the treebelts. To the west the ZTV pattern extends up to the Kirkham Road/ footpath, approximately 900 m from the closest, Morecambe onshore substation site. The road connects Freckleton with Kirkham and it is lined by residential properties, which would potentially have visibility of the onshore substation(s). To the west of the Morgan onshore substation the ZTV spreads across residential properties immediately adjacent to the HM Prison and beyond Kirkham Road and across the fields, where a woodland block breaks the homogeneous pattern of the ZTV. The spread of the ZTV to the north west is blocked by treebelts and the HMP complex at a distance of 700 m from Morgan onshore substation.

10.5.1.6 Fieldwork observations (see Table 10.9) confirmed that a combination of vegetation and localised undulations in the landform within the surrounding landscape would further reduce the extent of visibility of the of the onshore substations. This screening provided by vegetation is not wholly captured by the ZTV. Although woodland cover is generally low, the views are punctuated by small deciduous secondary woodlands, mostly in the form of woodland shelter belts, which provide a backdrop to views. Many human-made elements, such as electricity pylons, communication masts and road traffic, are all highly visible on the flat landscape.

10.5.1.7 While the ZTV provides a useful indication from where visibility of the onshore Substations might be experienced, it should be noted that just a fraction of the modelled building used in the ZTV generation may give rise to the wide colour band indicating visibility. Therefore, the ZTV could at the same time indicate visibility of the whole building or only a fraction of it.

10.5.1.8 In addition, what adds to the limitations of the ZTV is that the viewer's height in a ZTV map is generally set at 2 m above ground level. This is higher than the camera height recommended for photographic visualisations (1.6 m), to compensate for potential inaccuracies in digital terrain data and to ensure that the 'worst case' is represented. However, this is also higher than the average eye level height of 1.6 m of a viewer (visual receptor) and therefore potentially increases theoretical visibility/ the ZTV pattern.

10.5.1.9 These ZTV exercises are only meaningful if they take into account the limitations of the ZTV production. It should be considered that the main factor to the magnitude of scale, is the effect of distance and this cannot be modelled in the ZTV and as a result, the extent of actual visibility experienced on-the-ground would be considerably less than is suggested by the ZTV pattern.

10.5.1.10 Based on the field survey verifications it is concluded that potential visibility of the Onshore Substations would primarily be concentrated in the vicinity of the

Site, from the PRoW (FPB0505003, FPB0505005, BW0505016 BW0509012). Visibility would be limited to a distance of approximately 700 m from the Onshore Substations' sites, being related to local roads (Kirkham Rd, Lower Lane, Parrox Lane) and the outer boundaries of settlements, such as Newton with Scales, Kirkham, Hall Cross village and Higher House associated residential development.

10.5.1.11 Based on the ZTV analysis 18 representative viewpoints (see **Table 10.11**) have been selected to support the assessment in order to demonstrate the effects attributable to the Onshore Substations, as shown on Figure 10.2 (see Volume 3, Figures).

10.6 Baseline methodology

10.6.1 Methodology for baseline studies

10.6.1.1 A comprehensive desk-based review was undertaken to inform the baseline for landscape and visual resources. The existing studies and datasets referred to as part of the desk-based review are summarised in **section 10.7. Table 10.8** summarises the desk study sources used to inform the LVIA.

Table 10.8: Desk study sources used to inform the LVIA

Title	Source	Year	Author
A Landscape Strategy for Lancashire: Landscape Character Assessment	Lancashire County Council	2000	Lancashire County Council
National Character Area Profile	Natural England	Various (2012 to 2014)	Natural England

10.6.1.2 In addition, the visual assessment is based on analysis of OS mapping of the site and surrounding area, and the ZTV study as well as walkover and photographic site surveys (see below).

10.6.1.3 A record and summary description of the desk study activities is provided in Volume 3, Annex 10.2: Landscape character baseline technical report and Volume 3, Annex 10.3: Visual baseline technical report of the ES.

10.6.2 Site-specific surveys

10.6.2.1 Site-specific surveys have been undertaken in relation to the photography undertaken at each representative viewpoint location both during summer and winter seasons, and assessment of the existing view at representative viewpoints and the surroundings to establish baseline conditions. Candidate viewpoints have been discussed and agreed with statutory consultees (Natural England, Historic England, Preston City Council, Fylde Council, Blackpool Council, South Ribble Borough Council, Lancashire County Council, West Lancashire Borough Council).

10.6.2.2 A summary of the walkover and photographic fieldwork undertaken to support the ES is provided in **Table 10.9**.

Table 10.9: Summary of site-specific surveys

Title	Extent of survey	Overview of survey	Date
LVIA fieldwork and photography (refer to Appendix A of Volume 3, Annex 1.3 Landscape character baseline technical report of the ES)	Onshore export cable corridor study area	Onshore candidate viewpoint photography and landscape character analysis	21/03/2023 to 22/03/2023
	Onshore export cable corridor study area	Onshore cable route context photography and landscape character analysis	16/05/2023
	Onshore substations study area	Onshore candidate viewpoint photography and landscape character analysis	21/06/2023
	Landfall, onshore cable corridor and onshore substations study area	Onshore representative viewpoint and landscape character photography	06/03/2024 to 09/03/2024
	Onshore substations study area	Onshore candidate viewpoints summer photography and landscape character analysis	10/06/2024 to 11/06/2024

10.7 Baseline environment

10.7.1 Desk study

10.7.1.1 The LVIA baseline environment comprises two distinct but connected aspects, described in the following separate technical reports which present baseline environment figures:

- Volume 3, Annex 10.2: Landscape character baseline technical report of the ES; and
- Volume 3, Annex 10.3: Visual baseline technical report of the ES.

10.7.2 Landscape character baseline

10.7.2.1 National and regional landscape character areas within the study area have been identified.

10.7.2.2 The landscape characteristics with potential to be affected have been identified and described in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES. Extracts of published assessments reproduced in the Appendix A to Volume 3, Annex 10.2, provides further detail on landscape characteristics for relevant character areas.

10.7.2.3 **Table 10.10** below lists the landscape character areas scoped into the assessment.

Table 10.10: Landscape character areas assessed in the LVIA

Character area reference	Title	Administrative level	Jurisdiction	Source
England National Character Areas				
NCA 32	Lancashire and Amounderness	National	England	National Character Area Profiles (Natural England, 2014b)
A Landscape Strategy for Lancashire				
15b	Coastal Plain: Longton to Bretherton	Regional	England – Lancashire	A Landscape Strategy for Lancashire (Lancashire County Council, 2000)
15d	Coastal Plain: The Fylde	Regional	England – Lancashire	
16b	Mosslands: South Fylde	Regional	England – Lancashire	
17a	Enclosed Coastal Marsh: Clifton and Hutton	Regional	England – Lancashire	
18a	Open Coastal Marsh: Ribble Marsh	Regional	England – Lancashire	
19a	Coastal Dunes: Fylde	Regional	England – Lancashire	
N/A	Urban – Industrial Age	Regional	England – Lancashire	
N/A	Urban – Suburban	Regional	England – Lancashire	

10.7.3 Visual baseline

10.7.3.1 **Table 10.11** identifies the representative viewpoints for assessment which are illustrated on Figures 10.2 (see Volume 3, Figures).

Table 10.11: Representative viewpoints identified for assessment

Viewpoint reference	Receptor	Description
Representative viewpoint VP1: Bridleway BW0505016 south of Morgan onshore substation site.	• Equestrians • Walkers	This is a near, channelled view from the south boundary of the proposed Morgan onshore substation site.
Representative viewpoint VP2: Strike Lane, west of Morecambe onshore substation site.	• Equestrians • Walkers	This is a mid-distance view through a field gate opening.
Representative viewpoint VP3: View from bridleway BW0505016.	• Equestrians • Walkers	This is a near, channelled view looking south along the bridleway.
Representative viewpoint VP4: Parrox Lane east of Morecambe onshore substation site.	• Walkers • Road users	This is a mid-distance, partially open view through a field gate looking south west.
Representative viewpoint VP5: View north west from footpath FP0509005.	• Walkers	This is an open view looking north-west across a low managed hedgerow on the edge of the settlement of Newton-with-Scales.
Representative viewpoint VP6: View from footpath north of A584.	• Walkers	This is a near open view looking north west from pasture farmland.
Representative viewpoint VP7: Kirkham Bypass north of Freckleton Road.	• Cyclists • Road users • Pedestrians	This is a mid-distance open view looking south from a roadside pavement at the junction of Freckleton Road and Kirkham Bypass on the settlement edge of Kirkham.
Representative viewpoint VP8: Kirkham Road, National Cycle Network route 62.	• Cyclists • Road users	This is a partially screened mid-distance view looking east from a pavement on Kirkham Road, which forms part of National Cycle Route 62.
Representative viewpoint VP9: Brown's Lane FP0510007 and FP0510008.	• Walkers • Road users	This is a partially screened mid-distance view looking east over a low managed hedgerow beside Brown's Lane, from a slightly elevated location.
Representative viewpoint VP10: Footpath FP0513016 and National Cycle Network route 62 (Treales Road).	• Walkers • Cyclists • Road users	This is an open view looking south-west from a footpath connecting to Treales Road.
Representative viewpoint VP11: Ribble Way FP0707014.	• Walkers	This is a panoramic view looking north across the River Ribble estuary from the raised bank of the Ribble Way.
Representative viewpoint VP12: Farm access track/ bridleway BW0505016	• Equestrians/ walkers	This is a mid-distance, open view looking east across farmland from the edge of Kirkham.
Representative viewpoint VP13: Blackpool Road B5192	• Pedestrians/ occupiers of vehicles	This is a mid-distance, open view looking south-west across gently undulating farmland from a bus stop on slightly elevated land.
Representative viewpoint VP14: Freckleton, Hillock Lane	• Occupiers of vehicles	This is a narrow, framed view through a field gate opening looking north-east across relatively open farmland.

Viewpoint reference	Receptor	Description
Representative viewpoint VP15: Wrea Green	• Public open space	This is a narrow, framed view through a gap in a hedgerow looking south-east across relatively open farmland from a slightly elevated location on the settlement edge.
Representative viewpoint VP16: Ribble Way embankment FP0705008.	• Walkers	This is a panoramic view looking north-west across the River Ribble estuary from the raised bank of the Ribble Way.
Representative viewpoint VP17: Blackpool Road A583/Preston New Road A584	• Occupiers of vehicles	This is a narrow, framed view looking north-west along a busy road corridor.
Representative viewpoint VP18: Edith Rigby Way A582 overbridge	• Pedestrians/ occupiers of vehicles	This is a distant, open view looking west from an elevated overbridge above the Lancaster Canal.
Representative viewpoint VP19: Landfall, Blackpool Beach South.	• Visitors walking on beach	This is a distant panoramic view looking west out to sea across the exposed sandy beaches between the coastal settlements of Blackpool and Lytham St Annes.

10.7.4 Views from Residential Properties

10.7.4.1 Occupiers of individual and groups of residential properties with private views of the proposed development are considered as a type of visual receptor within the LVIA.

10.7.4.2 The Landscape Institute has provided guidance on residential visual amenity in *Landscape Institute Technical Guidance Note 2/19 Residential Visual Amenity Assessment* (Landscape Institute, 2019).

10.7.4.3 Views of the proposed onshore substations would neither overwhelm existing properties within the LVIA study area, nor render these properties so *'unattractive a place to live that planning permission should be refused'* (Inspector Kingaby, Burnthouse Farm Wind Farm, APP/D0515/A/10/2123739, Inspector's Report, paragraph 119) (also at paragraph A1.6 of Landscape Institute, 2019). Inspector Kingaby noted that *'There needs to be a degree of harm over and above identified substantial effect to take a case into the category of refusal in the public interest. Changing the outlook from a property is not sufficient'* (Inspector's Report, paragraph 120) (also at paragraph A1.7, Landscape Institute, 2019). The Inspector, In the Langham Wind Farm decision, noted that *'The planning system controls development in the public interest, and not in the private interest. The preservation of open views is a private interest'* (Langham Wind Farm Appeal Decision APP/D2510/A/10/2130539) (also at Landscape Institute, 2019, paragraph A1.11).

10.7.4.4 No occupiers of residential properties within the study area have the potential to experience a degree of harm over and above substantial to make considering private views a public interest matter. Therefore assessment of residential visual amenity is not considered in accordance with *Landscape Institute Technical Guidance Note 2/19* within this chapter.

10.7.5 Designated sites

10.7.5.1 No designated landscape/ seascape areas of international, national or local importance are located within the study area. Other designated sites of relevance to the LVIA are listed in **Table 10.12** and illustrated on Figures 10.3 and 10.4 (see Volume 3, Figures). Volume 3, Chapter 5: Historic Environment of the ES and Volume 3: Chapter 3: Onshore ecology and nature conservation of the ES provide further information on historic and ecological designations, respectively.

Table 10.12: Designated sites and relevant qualifying interests

Designated site	Distance to the Transmission Assets (nearest point)	Relevant qualifying interest
Listed Building	Property in Hall Cross and in Newton-with-Scales and Freckleton, 1 km from Morgan and Morecambe onshore substations. Properties at Lower Ballam, Clifton, Hutton, Howick Cross, Blackpool and Preston within 1 km study area of landfall, onshore export cable corridor and 400 kV grid connection cable corridor.	Visual amenity where occupiers of properties have views of the Transmission Assets or landscape value where the quality of built form informs the value and sensitivity of the character area within which they are located.
Marton Moss Conservation Area – Blackpool	Adjacent to the north of the onshore export cable corridor.	Visual amenity where occupiers of properties have views of the Transmission Assets or landscape value where the quality of townscape informs the value and sensitivity of the character area within which they are located.
Green Belt	The Morgan and Morecambe onshore substations and eastern end of the onshore export cable corridor are proposed within the Green Belt between Kirkham and Freckleton. The landfall and western end of the onshore export cable corridor are proposed within the Green Belt between Blackpool and Lytham St Annes. The eastern end of the 400 kV grid connection cable corridor lies within the Green Belt west of Preston.	Whilst Green Belt is a planning matter and is not an indication of landscape quality or value, it does inform landscape character in terms of rural characteristics and openness.
Lytham Hall, 18th century parkland, Register of Historic Parks Gardens of Special Historic Interest	Adjacent to onshore export cable corridor.	Visual amenity of people with views from or back to the designated asset and landscape value where the quality of landscape design/built form informs the value and sensitivity of the character area within which it is located.
Lytham St Annes Dunes LNR and SSSI	Within landfall/onshore export cable corridor.	Landscape value where the quality of the ecology and landscape informs the value and sensitivity of the character area within which it is located.

10.7.6 Future baseline conditions

10.7.6.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require that '*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge*' is included within the ES. This section provides an outline of the likely future baseline conditions in the absence of the Transmission Assets.

Future landscape character and visual baseline

10.7.6.2 Landscapes are constantly evolving; evolution is an intrinsic attribute of landscapes which are in constant flux. The forces driving landscape change are both human and natural, predominantly the former within the study area. Building and infrastructure development, intensive agriculture and minerals exploitation is changing the character of both urban and rural landscapes. Climate change driven by human activity has the potential to alter vegetation patterns and landscape character in the longer term, although to what extent and over what timeframe is a matter of conjecture.

10.7.6.3 Volume 4, Chapter 1: Climate change of the ES presents an assessment of predicted changes in the climate relating to the study area between 2030 and 2080 including those resulting from extreme weather events of heat, cold, rainfall, drought and wind. It is predicted that mean temperatures will increase, winter precipitation will increase and summer precipitation will decrease. Overall, the frequency of hot days, dry spells and heavy rainfall is predicted to increase.

10.7.6.4 The current landscape character baseline situation is described in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES. The climate change predictions recorded in Volume 4, Chapter 1: Climate change of the ES, are unlikely to be sufficient to lead to an appreciable change in the baseline vegetation and character within the study area. The underlying landscape characteristics are therefore predicted to remain broadly constant for the period assessed in Volume 4, Chapter 1: Climate change of the ES. Consequently, excluding building/infrastructure development, the future landscape character baseline, and the related visual baseline, would be essentially the same as the current baseline situation summarised above in this LVIA and presented in more detail in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES.

10.7.6.5 Regarding future building/infrastructure development, it is not possible to accurately predict future change but an intensification of offshore wind development within the cumulative assessment study area is highly likely in the future based on the recent consent of the Awel Y Mor offshore windfarm in 2024 and other schemes that are at earlier stages of the application process, including Mona offshore wind farm and Mooir Vannin offshore wind farm in the Irish Sea.

10.7.6.6 Regarding seasonal and medium to long term temporal landscape character change, these matters are intrinsic to LVIA and are considered as part of

both the baseline and the impact assessment stages of this chapter. A summary of the matters involved are described below.

- Seasonal temporal change: seasonal variations in vegetation cover, colour and texture alter the character of landscapes, particularly the difference between winter and summer deciduous vegetation. Diurnal and seasonal variations in tidal regimes and sea state, in particular the intertidal zone. Also, diurnal, and seasonal variations in weather and natural lighting.
- Medium and long term temporal change: landscape character inevitably change over time (i.e., years/decades). Change may result in new landscape patterns, or reversion to former ones. For example: deforestation, afforestation, urbanisation, land/farm management, farming techniques, natural resource exploitation (onshore and offshore), government legislation/policy/funding (e.g., agriculture and forestry/woodland grants), planning and environmental policy (e.g., landscape designations) and other land use initiatives (e.g., rewilding).

10.7.7 Key receptors

10.7.7.1 The baseline assessment involved a desktop exercise, field surveys and consultation process to identify potentially affected landscape, townscape and visual receptors and identify representative viewpoints within the LVIA study area (see Figures 10.2, Volume 3, Figures).

10.7.7.2 The viewpoints were selected to represent a broad range of locations and predominantly sensitive visual receptors across the onshore substations 5 km radius study area and a single location at the landfall. Fieldwork was undertaken to verify the visual receptors and representative viewpoint locations and photography captured. **Table 10.13** identifies the receptors taken forward to the assessment.

Table 10.13: Key receptors taken forward to assessment

Receptor	Onshore substations	Landfall/cable route	
Landscape Receptors			
LCA 15b	Coastal Plain – Longton to Brotherton	Coastal Plain – Longton to Brotherton	
LCA 15d	Coastal Plain – The Fylde	Coastal Plain – The Fylde	
LCA 16b	Mosslands – South Fylde Mosses	Mosslands – South Fylde Mosses	
LCA 17a	Enclosed Coastal Marsh – Clifton and Hutton Marsh	Enclosed Coastal Marsh – Clifton and Hutton Marsh	
LCA 18a	Open Coastal Marsh – Ribble Marshes	Open Coastal Marsh – Ribble Marshes	
LCA 19a	Coastal Dunes – Fylde Coastal Dunes	Coastal Dunes – Fylde Coastal Dunes	
NA	-	Urban - Industrial Age	
NA	-	Urban - Suburban	
Visual Receptors			
	Representative viewpoints 1 – 18. These include the following groups/types of receptors:	Representative viewpoints 1, 6, 8, 12 and 19. These include the following groups/types of receptors:	
Residents within settlements	Newton with Scales, Hall Cross village, Higher House associated residential development and Kirkham	Hall Cross and Kirkham	
Walkers	Walkers using PRoWs FP0505003, FP0505005	Walkers using PRoWs FP30505	
Equestrians	Equestrians using PRoWs BW0505016, BW0509012	Equestrians using PRoWs BW0505016	
People using public open space, access land/open country (or public access equivalent)	-	People using sand dunes and beach at Lytham St Annes	
Cyclists	Cyclists using National Cycle Routes (NCR) route 62 and road network	Cyclists using National Cycle Routes (NCR) route 62 and road network	
Occupiers of residential properties	The closest properties to the onshore substations	the closest properties to the Transmission Assets	
Pedestrians	People using roadside footways	People using roadside footways	
Occupiers of vehicles	People travelling on road network, A583, A584, Kirkham Rd, Lower Lane, Parrox Lane	Kirkham Road	

10.7.7.3 Regarding seasonal and medium to long-term temporal visual change and the LVIA, the receptors are broadly the same as those presented above for landscape character. Of additional importance are the following.

- Seasonal temporal change: the difference between winter and summer deciduous vegetation cover is a key factor to consider when assessing the potential impact of development on views and visual amenity. Diurnal and seasonal variations in weather, light intensity, natural lighting and visibility also influence views and visual amenity. Visibility is recorded by the Meteorological Office – historic 'viewing distance' data for the LVIA study area is reproduced in Volume 3, Annex 10.4: Landscape and visual impact methodology of the ES, Appendix B. Visibility is given for increasing distances for every month of the year for the last 10 years. The distances given in the assessment of the Transmission Assets relate to these tables and the Meteorological Office, definitions:
  - Very Poor – visibility less than 1 km;
  - Poor – visibility between 1 km to 4 km;
  - Moderate – visibility between 4 km and 10 km;
  - Good – visibility between 10 km to 20 km;
  - Very Good – visibility between 20 km and 40 km; and
  - Excellent – visibility over 40 km.
- Medium and long-term temporal change: the forces driving longer-term landscape/seascape character change (i.e., years/decades) described in **section 10.7.6** also influence views and visual amenity.

10.8 Scope of the assessment

10.8.1.1 The scope of this ES has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **section 10.3.3**.The assessment considers the impact of the onshore elements of the Transmission Assets on landscape character and on publicly accessible views during the construction, operation and maintenance and decommissioning phase.

10.8.1.2 Taking into account the scoping and consultation process, **Table 10.14** summarises the impacts considered as part of this assessment.

Table 10.14: Potential effects considered within this assessment

Activity	Impacts scoped into the assessment
Construction phase	
Construction activities associated with all elements of the Transmission Assets: Intertidal and Onshore, including use of construction vehicles and temporary compounds.	The impact of landfall, onshore cable corridor and/or onshore substations where relevant, on landscape character.
	The impact of the landfall, onshore cable corridor and/or onshore substation on publicly accessible views.
Operation and maintenance phase	
Operation and maintenance of onshore substations	The impact of the onshore substations on landscape character.
	The impact of the onshore substations on publicly accessible views.
Decommissioning phase	
Decommissioning activities associated with onshore substations	The impact of the onshore substations on landscape character.
	The impact of the onshore substations on publicly accessible views.

10.8.1.3 Impacts that are not likely to result in significant effects have been scoped out of the assessment. A summary of the impacts scoped out, together with justification for scoping them out and whether the approach has been agreed with key stakeholders through either scoping or consultation, is presented in **Table 10.15**.

Table 10.15: Impacts scoped out of the assessment

Impact	Justification
Landscape and visual resources	
The impact of construction, operation and maintenance and decommissioning of the offshore elements of the Transmission Assets on landscape character and visual resources.	No significant effects are likely. Following the meeting held on 22 February Technical Note (EOR0823-04) was issued to Blackpool Council, Fylde Council, South Ribble Council and Natural England It was agreed to remove this element of the proposal from the assessment based on these stakeholders responses as follows: Blackpool Council on 30 April 2024, Fylde Council on 1 May 2024, South Ribble on 3 May 2024 Council and Natural England on 10 May 2024.
Impacts of the onshore export cable corridors on landscape character and visual resources during operation and maintenance.	No significant effects are likely. Scoped out in Scoping Report, as agreed with the Planning Inspectorate in the Scoping Opinion. The existing habitats and features affected by the construction of the onshore export cable corridor will be reinstated following completion with no significant landscape effects likely to persist post-construction.

Impact	Justification
Impacts of decommissioning the onshore export cables on landscape character and visual resources.	No significant effects are likely. As at the application stage detailed information on decommissioning is not available, impacts have been assumed to be the same as for construction Onshore Infrastructure Area are considered analogous with, or likely less than, those of the construction stage. This is scoped out in Scoping Report, as agreed with the Planning Inspectorate in the Scoping Opinion.
Seascape resources	
The impact of construction, operation and maintenance and decommissioning of the Transmission Assets on seascape character.	No above sea-level structures or elements of sea surface-piercing infrastructure form part of the application for development consent for the Transmission Assets. Therefore, no potential impacts are expected to give rise to likely significant effects on landscape or seascape character, or visual receptors. Following the meeting held on 22 February Technical Note (EOR0823-04) was issued to Blackpool Council, Fylde Council, South Ribble Council and Natural England and it was agreed to remove this element of assessment from the proposal.

10.9 Measures adopted as part of the Transmission Assets (Commitments)

10.9.1.1 For the purposes of the EIA process, the term 'measures adopted as part of the Transmission Assets' is used to include the following two types of mitigation measures (adapted from IEMA, 2016). These measures are set out in Volume 1, Appendix 5.3: Commitments register of the ES.

- Embedded mitigation. This includes the following.
  - Primary (inherent) mitigation - measures included as part of the project design. IEMA describes these as 'modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken'. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
  - Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects*'. It may be helpful to secure such measures through a Code of Construction Practice or similar.
- Secondary or further (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome'*. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through environmental management plan.

10.9.1.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within Volume 1, Appendix 5.3: Commitments register of the ES. The measures relevant to this chapter are summarised in **Table 10.16**. Further details of the measures to be included in the Outline Landscape Management Plan (document reference J2) are set out in **Table 10.17**.

10.9.1.3 Embedded mitigation that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 10.12** (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicants are committed to are taken into account in the assessment of effects.

10.9.1.4 Where an assessment identifies likely significant adverse effects, further or secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by IEMA as actions that will require further activity in order to achieve the anticipated outcome and may be imposed as part of the planning consent, or through inclusion in the ES (referred to as secondary mitigation measures in IEMA, 2016). For further or secondary measures, both pre-mitigation and residual effects are presented.

Table 10.16: Measures (commitments) adopted as part of the Transmission Assets

Commitment number	Measure adopted	How the measure will be secured
Embedded measures		
CoT08	Post-construction, the working area will be reinstated to pre-existing condition as far as reasonably practical in line with the DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (PB13298), Institute of Quarrying (IQ) Good Practice Guide for Handling Soils in Mineral Workings (IQ, 2021) and British Society of Soil Science (BSSS) Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction (BSSS, 2022).	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice) "DCO Schedules 2A & 2B, Requirement 18 (Restoration of land temporarily used for construction); DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT12	The onshore export cables and the 400 kV grid connection cables will be completely buried underground for the entire length. No overhead pylons will be installed as part of the Transmission Assets.	DCO Schedule 1, Part 1, Authorised Development
CoT13	Where hedgerows and/or trees require removal, this will be undertaken prior to topsoil removal. Sections of hedgerows and trees which are removed will be replaced using like for like hedgerow species, subject to landowner agreement.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice); and Requirement 12 (Ecological Management Plan)
CoT14	Joint bays will be completely buried, with the land above reinstated. An inspection cover will be provided on the surface for link boxes for access during operation and maintenance phase.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT20	All temporary working areas for the onshore export cable corridor, 400 kV grid connection cable corridor, temporary compounds, and the onshore substation sites will be clearly marked and secured with appropriate fencing. This will be done in accordance with the Outline Construction Fencing Plan, as part of the Outline CoCP and in accordance with Construction (Design and Management) Regulations 2015 requirements.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT27	All temporary compounds will be removed and sites will be reinstated when construction has been completed.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice) DCO Schedules 2A & 2B, Requirement 16 (Restoration of land used temporarily for construction)

Commitment number	Measure adopted	How the measure will be secured
CoT28	Construction site lighting will only operate when required and will be positioned and directed to avoid unnecessary illumination to residential properties, sensitive ecological receptors and footpath users, and minimise glare to users of adjoining public highways. Construction site lighting will be designed in accordance with latest relevant available guidance and legislation and the details of the location, height, design and luminance of lighting to be used will be detailed within the Outline Construction Artificial Light Emissions Management Plan, as part of the Outline CoCP. The design of construction site lighting will accord with the details provided in the Outline Code of Construction Practice (CoT35) and Outline Ecological Management Plan (CoT76).	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice) DCO Schedules 2A & 2B, Requirement 12 (Ecological management plan)
CoT32	An Outline Public Rights of Way (PRoW) Management Plan has been prepared as part of the Outline CoCP in order to minimise the disturbance to PRoWs, where practicable. Where practically possible the impact will be temporary and PRoWs will be reinstated as soon as reasonably practicable. An Outline Open Space Management Plan has been appended to the Outline PRoW Management Plan, which includes measures to minimise potential impacts to the users of Lytham St Annes beach and Blackpool Road Recreation Ground. Detailed PRoW Management Plans will include details of temporary and permanent diversions, closures, gated crossings and signage to be provided during construction and details to reinstate all PRoWs potentially affected during construction.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT35	An Outline Code of Construction Practice (CoCP) has been prepared and submitted with the application for development consent. Detailed CoCP(s) will be developed in accordance with the Outline CoCP. The Outline CoCP includes measures to maintain and address: • flood protection and control measures; • water environment and drainage; • pollution prevention; • geology and ground conditions; • ecology and nature conservation (including protected species and invasive species); • historic environment; • soil management; • traffic and transport;	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)

Commitment number	Measure adopted	How the measure will be secured
	• noise management measures; • air quality and dust management; • landscape and visual; • recreation; and • bentonite breakout.	
CoT36	Onshore Decommissioning Plan(s) will be developed prior to decommissioning. The Onshore Decommissioning Plan(s) will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure (if and where relevant and practicable), and details relevant to flood risk, pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan(s) will be in line with the latest relevant available guidance.	DCO Schedules 2A & 2B, Requirement 22 (Onshore decommissioning)
CoT39	Fences, walls, ditches and drainage outfalls will be retained at the landfall and along the onshore export cable corridor and 400 kV grid connection cable corridor, where possible. Where it is not reasonably practicable to retain them, any damage will be repaired and reinstated as soon as reasonably practical. The Environment Agency must be notified if damage occurs to any Environment Agency main river or related flood infrastructure.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT44	The Project Description (Volume 1, Chapter 3 of the Environmental Statement) sets out that the installation of the offshore export cables under Lytham St Annes SSSI and the St Annes Old Links Golf Course will be undertaken by direct pipe trenchless installation technique. The exit pits associated with the direct pipe installation will be at least 100 m seaward of the western boundary of the SSSI.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT90	The Project Description (Volume 1, Chapter 3 of the Environmental Statement) sets out that the installation of the 400kV Grid Connection Cable Corridor beneath the River Ribble will be undertaken by direct pipe or micro tunnel trenchless installation techniques.	DCO Schedules 2A & 2B, Requirement 5(3)(Detailed design parameters onshore); and Requirement 8 (Code of Construction Practice)
CoT91	An Outline Public Rights of Way (PRoW) Management Plan as part of the Outline CoCP, has been prepared and submitted with the application for development consent. Detailed Public Rights of Way (PRoW) Management Plan(s) will be developed in accordance with the Outline Public Rights of Way (PRoW) Management Plan and Outline CoCP. These will detail measures to mitigate against temporary disruption or reduced access on the	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)

Commitment number	Measure adopted	How the measure will be secured
	Lancashire Coastal Way Long Distance Path and the Ribble Way Long Distance Path, as well as all other PRoWs to be crossed.	
CoT123Secondary measures		
CoT15	Detailed Landscape Management Plan(s) will be developed in accordance with the Outline Landscape Management Plan. Detailed Landscape Management Plan(s) will include details of mitigation planting at the onshore substation sites, including the number, location, species and details of management and maintenance of planting. Where practicable, landscape mitigation planting will be established as early as reasonably practicable in the construction phase.	DCO Schedules 2A & 2B, Requirement 6 (Provision of landscaping)

Table 10.17: Measures included in the Outline Landscape Management Plan and Outline Design Principles document

Measures included in Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3)
Planting and earth shaping will be provided at the substation locations. The mitigation planting will be designed to comprise a mix of faster growing 'nurse' species and slower growing 'core' species. The core species will comprise a mix of preferred native, canopy species that will outlive the nurse species and characterise the woodland/scrub structure over the longer term. Native species will be selected that are most resilient to climate change.
In locations where it is reasonably practicable, advanced planting will be undertaken.
The outline Landscape Management Plan sets out the landscape strategy for implementation and long term maintenance and management. This is likely to include: • creation of woodland/scrub belts around onshore substation perimeters; • incorporation of gentle earth shaping at the onshore substations to utilise natural landform and create false cuttings; • incorporation of surface water attenuation features at onshore substation locations; • strengthen and enhance existing hedgerow field boundaries within the vicinity of substations or reinstate existing hedgerows that are removed for construction; • use of native and locally appropriate plant species around onshore substations; and • reinstate hedgerows and trees required to be removed within the onshore export cable corridor.

Measures included in Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3)
The Outline Design Principles document (document reference J3) includes the following. • Key design details of substation buildings. • Use of appropriate materials/colours/finishes for the façades of the substation buildings.

10.9.1.5 The locations of the Morgan and Morecambe onshore substations are shown on Figures 10.2 and 10.3 (see Volume 3, Figures). As set out in **Table 10.17**, an Outline Landscape Management Plan has been developed. This includes details of mitigation planting at the onshore substations, including the number, location, species and details of management and maintenance of planting. Where practical, landscape mitigation planting will be established as early as reasonably practicable in the construction phase.

10.9.1.6 At winter Year 1 (the first planting season after the construction of the built elements of the Transmission Assets) not all the mitigation measures proposed in **Table 10.16** and **Table 10.17** and others adopted as part of the Transmission Assets (see Volume 1, Annex 5.3: Commitments register of the ES) will have had time to mitigate the impact of the onshore elements of the Transmission Assets. By Year 15 the planting undertaken after the construction of the onshore substations and any ancillary structures, e.g., access roads, is complete, will have had time to establish and mature and the impact of such structures will be reduced further, due to the screening and softening effect of the planting and its contribution to enhancing the character of the landscape.

10.10 Key parameters for assessment

10.10.1 Maximum design scenario

10.10.1.1 The maximum design scenarios identified in **Table 10.18** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the ES. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g., different infrastructure layout), to that assessed here be taken forward in the final design.

Table 10.18: Maximum design scenario considered for the assessment of impacts

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
The impact of the onshore elements of the Transmission Assets on landscape character. The impact of the onshore elements of the Transmission Assets on publicly accessible views.	✓			**Construction phase: Landfall** The offshore export cables between the transition joint bay working area within Blackpool Airport and the beach will be installed using the direct pipe trenchless technique for a maximum length of 1,500 m. It is anticipated the direct pipe exit will be 100 m from the boundary of Lytham St Annes Dunes SSSI. • Entry pits for the direct pipe will be situated within the transition joint bay area within Blackpool Airport: The maximum number of entry pits will be six, with a maximum direct drill entry pit area of 450 m^2 per circuit with a depth of 6 m. The total duration of entry pit works which is included within the overall transition joint bay construction works is 29 months assuming a sequential construction scenario. • Exit pits on the beach: The maximum number of exit pits will be six, with a maximum area of drill exit pit of 875 m^2 per circuit, with a depth of 3 m. The maximum cofferdam area dimensions per pit is 75 m^2 (15 m x 5 m). The total duration of exit pit works on the beach is 2 weeks per circuit. • For the offshore export cable installation between exit pits and MLWS, the burial at the of the offshore export cables seaward of the direct pipe exit pits will via open trenching. The maximum number of trenches will be six, 300m in length (max), stepped trench 10m wide at top of the trench and 3 m at bottom with a maximum working area each side of the trench of 25 m. The total volume of material excavated would be 35,100 m^3. The total area of disturbance would be 90,000 m^2. • The open trench will transition to a beach trencher, this will be 3 m wide and up to 1,250 m long, the trench will be contained within a working corridor with a 50 m width.	**Construction phase** For the landfall, onshore export cable corridor and 400 kV grid connection cables, open cut trenching represents the largest physical impact and greatest area of land disturbance when compared to other trenchless techniques. As such, where options remain, open cut trenching represents the maximum design scenario. For the onshore substations, the maximum design scenario is represented by the largest temporary and permanent footprint and greatest height of buildings and associated infrastructure. This represents the maximum landscape and visual impact. In terms of duration, the maximum design scenario is represented by the sequential construction of the Transmission Assets (rather than concurrent), as this presents the longest potential construction phase. All major crossings, such as major roads, river and rail crossings will be undertaken using HDD or other trenchless techniques, such as auger boring or micro-tunnelling, where practicable. Either micro-tunnelling or direct pipe would be the MDS for the River Ribble crossing.

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
				• Cable pull in and burial will take up to six weeks per circuit and the maximum total duration of cable pull in and burial is 36 weeks assuming a sequential construction scenario. • There will be up to four compounds required west of the transition joint bays to MLWS: – Compound 1 (welfare): 300 m2 to be active for 36 weeks; – Compound 2: 2,500 m2 to be active for 48 weeks; – Compound 3: 510 m2 to be active for 48 weeks; and – Compound 4: 600 m2 to be active for 36 months (in a sequential construction scenario). • There will be two transition joint bay compounds (10,000 m^2 for Morgan and 10,000 m^2 for Morecambe) within Blackpool Airport to facilitate construction works, to be active for up to 29 months over a 45 month period. • Maximum working area of the transition joint bay: 4,900 m^2 for Morgan and 2,800 m^2 for Morecambe. **Construction phase: onshore export cable corridor** <u>Open trenching</u> • The maximum number of trenches will be six, with a target trench depth of 1.8 m, trench width at surface of 10 m. • The length of the cable corridor will be 17 km and the permanent width of the onshore export cable corridor will be 70 m. The standard width of the temporary construction cable corridor will be 100 m, which will include haul roads. • There will be up to 110 joint bays, with each measuring 250 m^2 in area and requiring 1,000 m^3 of excavated material. There will be a maximum of 110 link boxes, each measuring 4 m^2 in area and requiring 8 m^3 of excavated material.	

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
				• The maximum duration of the construction phase for the onshore export cable corridor is 66 months (if sequential). <u>Construction compounds</u> • The total number of construction compounds will be 10. Of these, two Type A compounds will measure 26,500 m^2, six Type B compounds will measure 79,500m^2 and two Type C compounds will measure 17,500 m^2 (if sequential). • The maximum duration of the construction phase for the construction compounds will be 66 months (if sequential). <u>Horizontal Directional Drilling (HDD) or other trenchless techniques</u> • The maximum number of HDD locations is 120, which would require 10 main HDD compounds, with each measuring up to 100 m x 50 m. All secondary HDD compounds would be located within the temporary construction corridor. • The maximum duration of the construction phase for the main HDD works will be 66 months (if sequential). <u>Haul roads</u> • There are two haul roads within the onshore export cable corridor, which are 3 m wide excluding passing places. They will be surfaced with geotextile layers and up to 1,000 mm thickness of engineered fill. <u>Access tracks (from main road to haul roads)</u> • The temporary construction access, including passing bays will be up to 20 m in width. **Construction phase: onshore substations** <u>Onshore substations</u> • The permanent combined footprint of the substations, including landscape planting and drainage is 223,500 m^2. The substations will comprise eight main buildings, with a	

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
				maximum height of 15 m, width of 80 m and length of 140 m. The maximum height of lightning protection would be 30 m. • Morgan onshore substation: Permanent footprint 164,000 m^2, up to four main buildings up to 15 m high, 140 m long and 80 m wide, 15 secondary buildings. • Morecambe onshore substation: Permanent footprint 59,500 m, up to four main buildings up to 13 m high, 30 m long and 15 m wide, five secondary buildings. • The maximum duration of the construction phase for the onshore substations, excluding enabling works and testing will be 54 months (if sequential) <u>Construction access roads</u> • Morecambe: the length of the temporary construction access road will be approximately 760 m and it will be 20 m in width (permanent access 15 m). • Morgan: temporary access width will be 20 m in width (permanent access 15 m). <u>Construction compound</u> • The temporary footprint of the substation compounds is 122,500 m^2. This would be in addition to the permanent footprint of the onshore substations. **Construction phase: 400 kV grid connection cable** The working area will include a construction corridor width of 76 m (which includes two haul roads), with a length of up to 13 km. Duration of installation of up to 66 months (sequential construction scenario). <u>Open trenching</u>	

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
				• The maximum number of trenches will be four, with a target trench depth of 1.8 m. The width of the permanent cable corridor is 50 m. • There will be up to 60 joint bays, with each measuring 250 m^2 in area and requiring 1,000 m^3 of excavated material. There will be a maximum of 60 link boxes, each measuring 4 m^2 in area and requiring 8 m^3 of excavated material. • The maximum duration of the construction phase for the 400 kV grid connection cable will be 66 months (if sequential). <u>Construction compounds</u> • The total number of construction compounds will be eight. Of these, two Type A compounds will measure 26,270 m^2, two Type B compounds 52,540 m^2 and two Type C compounds will measure 17,500 m^2 (if concurrent). <u>Horizontal Directional Drilling (HDD) or other trenchless techniques</u> • The maximum number of HDD locations is 46 (excluding the Ribble Estuary crossing). • No construction works directly related to the onshore electrical infrastructure would occur outside of the Onshore Infrastructure Area. <u>River Ribble crossing - micro-tunnelling or direct pipe</u> • Two potential trenchless installation techniques are proposed for the crossing of the River Ribble of 650 m in length. <u>Haul roads</u> • The maximum number of haul roads will be two, with each measuring 6 m wide excluding passing places. They will be surfaced with geotextile layers and up to 400 mm thickness of engineered fill (nominal thickness).	

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
				Access tracks (from main road to haul roads) • The temporary construction access will be up to 10 m in width.	
		✓		**Operation and maintenance phase: onshore infrastructure** Onshore substation • The permanent combined footprint of the substations, including landscape planting and drainage is 223,500 m^2. The substations will comprise eight main buildings, with a maximum height of 15 m, width of 80 m and length of 140 m. The maximum height of lightning protection would be 30 m (up to 18 rods for Morgan and . • Morgan onshore substation: Permanent footprint 164,000 m^2, up to four main buildings up to 15 m high, 140 m long and 80 m wide, 15 secondary buildings. • Morecambe onshore substation: Permanent footprint 59,500 m^2, up to four main buildings up to 13 m high, 30 m long and 15 m wide, five secondary buildings. • The maximum duration of the operation and maintenance phase of Transmission Assets, including offshore and onshore infrastructure is 35 years. Permanent access roads • The permanent access roads will be 15 m wide	For the onshore substations, the maximum design scenario is represented by the largest permanent footprint and greatest height/density of buildings and associated infrastructure. This would create the most visually dense onshore development which would be more prominent and impact directly on both landscape and visual receptors. In terms of duration, the maximum design scenario is represented by the longest potential operation and maintenance phase (i.e. 35 years).
			✓	**Decommissioning phase** • It is anticipated that all structures above ground will be completely removed and that offshore cables and any offshore cable protection may be left in situ. Onshore export cables and 400 kV grid connection cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). Otherwise, they will be left in place in the ground with the cable	The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and amount of equipment as the construction phase. As such, justifications for the decommissioning phase would be the same as those set out for construction.

Impact	Phase[a]			Maximum design scenario	Justification
	C	O	D		
				ends cut, sealed, and securely buried as a precautionary measure. Joint bays and link boxes will be removed only if it is feasible with minimal environmental disturbance or if their removal is required to return the land to its current agricultural use.	

[a] C=construction, O=operation and maintenance, D=decommissioning

10.11 Assessment methodology

10.11.1 Overview

10.11.1.1 The detailed LVIA methodology is contained within Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.

10.11.1.2 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. This section summarises the criteria applied in this chapter to assign values to the magnitude of impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 5: Environmental assessment methodology of the ES.

10.11.2 Receptor sensitivity

10.11.2.1 The value of a receptor and its susceptibility inform judgements of sensitivity which vary according to the nature of the existing resource and the nature of the proposed change. Considerations of value, integrity, capacity and susceptibility are all relevant when assessing sensitivity. For the purpose of this assessment, these terms are defined as follows.

- Value: the relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a variety of reasons. Landscapes can be recognised through national, regional or local designation. Views tend not to be designated, but value can be recognised through a named location shown on a map, or through the creation of a parking lay-by or location of a bench to appreciate a view.
- Integrity: the degree to which the value has been retained, the condition and integrity of the landscape or the view.
- Capacity: the ability of a landscape or view to accommodate the proposed change while retaining the essential characteristics which define it.
- Susceptibility: the ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negetive consequences.

10.11.2.2 Sensitivity is not readily graded in bands. However, in order to provide both consistency and transparency to the assessment process, **Table 10.20** below defines the criteria which have guided the judgement as to the sensitivity of the receptor and the susceptibility to change. These criteria are defined in full in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.

Table 10.19: Sensitivity criteria

Sensitivity	Definition
Very High	**Landscape** Value recognised by international or national designation. The resource has very little ability to absorb change of the type proposed without fundamentally altering its present character and is of very high importance, rarity and value. **Visual** Users of strategic recreational footpaths and cycleways; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas.
High	**Landscape** Value recognised by national designation. The landscape resource has little ability to absorb change of the type proposed without fundamentally altering its present character and/or is of high importance, rarity or value. **Visual** Residents experiencing views from dwellings; users of strategic recreational footpaths/bridleways and cycleways; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas. Occupiers of vehicles in highly scenic areas or on recognised tourist routes.
Medium	**Landscape** Value is recognised or designated locally. The landscape resource has moderate capacity to absorb change of the type proposed without significantly altering its present character and/or is of medium importance, rarity or value. **Visual** Users of pavements, footways and secondary footpaths in urban areas, and people engaged in outdoor sport or recreation e.g., horse riding or golf. Occupiers of vehicles in rural areas.
Low	**Landscape** The landscape resource is tolerant of change of the type proposed without detriment to its character and/or is of low importance, rarity or value. **Visual** People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity and who may therefore be potentially less susceptible to changes in view. Occupiers of vehicles whose attention may be focused on the road.
Negligible	**Landscape** The landscape resource is tolerant of change of the type proposed without detriment to its character and/or is of low importance, rarity or value. **Visual** People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity and who may therefore be potentially less susceptible to changes in view. Occupiers of vehicles in urban areas.

10.11.3 Magnitude of impact

10.11.3.1 The criteria for defining magnitude in this chapter are outlined in **Table 10.20** below and defined in full in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES.

10.11.3.2 Magnitude of impact depends on a range of factors including scale, nature, extent, duration and reversibility of the change. The duration and reversibility of landscape and visual effects are based on the period over which Transmission Assets are likely to exist (i.e., during construction, operation and decommissioning) with effects on receptors being reversed at the end of that period.

Table 10.20: Magnitude of impact criteria

Magnitude of impact		Definition
High	Adverse	**Landscape** Total loss, or/very substantial loss or addition of key elements/features/patterns of the baseline (i.e., pre-development landscape) and/or introduction of dominant, uncharacteristic elements compared with the attributes of the receiving landscape. **Visual** The proposed change forms a dominant or immediately apparent feature that would significantly alter and change view.
	Beneficial	**Landscape** Large scale or major improvement or resource quality; extensive restoration or enhancement; major improvement of landscape quality. **Visual** Large scale or major improvement of landscape character or view; extensive restoration or enhancement of quality.
Medium	Adverse	**Landscape** Partial loss or addition of, or moderate alteration to, one or more key elements/features/patterns of the baseline (i.e., pre-development landscape) and/or introduction of elements that may be prominent but would not be substantially uncharacteristic in comparison to the attributes of the receiving landscape. **Visual** The proposed change forms a prominent new element that would affect and change the view.
	Beneficial	**Landscape** Benefit to, or addition of, key characteristics, features or elements; improvement of landscape quality. **Visual** Moderate scale improvement of landscape character or view; partial restoration or enhancement of quality.
Low	Adverse	**Landscape** Minor loss or addition of, or alteration to, one or more key elements/features/patterns of the baseline, i.e., pre-development

Magnitude of impact		Definition
		landscape and/or introduction of elements that may not be uncharacteristic compared with the surrounding landscape. **Visual** The proposed change constitutes only a minor component of view, which is recognisable, although might be missed by the casual observer. Awareness of the proposed change would not change the overall nature and character of the view.
	Beneficial	**Landscape** Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on landscape or a reduced risk of negative impact occurring. **Visual** Minor benefit to, or addition of, one (maybe more) key landscape characteristics, features or elements or improvement in quality of view due to partial restoration or enhancement.
Negligible	Adverse	**Landscape** Very minor loss or addition of, or alteration to, one or more key elements/features/patterns of the baseline (i.e., pre-development landscape) and/or introduction of elements that are not uncharacteristic in comparison to the surrounding landscape; approximating to a 'no-change' situation. **Visual** Only a very small part of the proposed change would be discernible, and/or it is at such a distance that it would be scarcely appreciated.
	Beneficial	**Landscape** Very minor benefit to, or positive addition of one or more characteristics, features or elements. **Visual** Very minor benefit to or positive addition of one or more landscape characteristics, features or elements.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

10.11.4 Significance of effect

10.11.4.1 The significance of the effect upon landscape and visual resources has been determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 10.21**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

10.11.4.2 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

10.11.4.3 For the purpose of this assessment, any effects with a significance level of moderate or less are not considered to be significant in terms of the detail set out in Volume 3, Annex 10.4: Landscape and visual impact assessment methodology of the ES. An accumulation of individual moderate adverse effects, for instance experienced sequentially during a journey undertaken by the same visual receptor, may also be judged as significant in some circumstances.

10.11.4.4 GLVIA3 does not prescribe the exact threshold at which point a landscape or visual effect becomes significant, but it does require a transparent process to be followed that considers sensitivity of receptor, magnitude of impact and resulting significance of effect and sufficient descriptive text to support this. The definitions of these elements in the methodology of the chapter, in combination with the matrix at **Table 10.21** provides a clear rationale for decision making. The threshold of Moderate adverse and below is a typical point at which landscape and visual effects are not considered significant however, these effects are still given appropriate weight in the assessment process.

Table 10.21: Assessment matrix

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	**Low**	**Medium**	**High**
Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor	Minor or Moderate	Moderate or Major	Major
Very High	Minor	Moderate or Major	Major	Major

10.11.4.5 Where the magnitude of impact is ‘no change’, no effect would arise.

10.11.4.6 The definitions for significance of effect levels are described as follows.

- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. Where proposed changes would be uncharacteristic and/or would significantly alter a valued aspect of (or a high quality) landscape. Where proposed changes would be uncharacteristic and/or would significantly alter a valued view or a view of high scenic quality.
- Moderate: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process. Where proposed changes would be demonstrably out of scale or at variance with the character of an area. Where proposed changes to

views would be demonstrably out of scale or at variance with the existing view.

- Minor: These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project. Where proposed changes would be at slight variance with the character of an area. Where proposed changes to views, although discernible, would only be at slight variance with the existing view.
- Negligible: Where proposed changes would have an indiscernible effect on the character of an area. Where proposed changes would have a barely noticeable effect on views/visual amenity.

10.11.5 Assumptions and limitations of the assessment

10.11.5.1 The LVIA is subject to *inter alia* the following assumptions and limitations.

- The visual assessment is based on analysis of OS mapping of the site and surrounding area and on field survey and analysis of views towards the Onshore Order Limits from publicly accessible viewpoints in the surrounding landscape. Although every effort has been made to include viewpoints in sensitive locations and locations from which the proposed development would be most visible, not all publicly available views from which the proposed development would potentially be seen have necessarily been included in the assessment.
- The fieldwork and visual assessment were undertaken during early spring 2023 and 2024 when deciduous trees were not in leaf (winter scenario) and summer 2023 when deciduous trees were in leaf. The early spring photography has allowed an accurate projection of the ‘worst case’ scenario, i.e., the most visible conditions.
- The term ‘host’ landscape is understood to mean the landscape character unit in which the Transmission Assets are located. In other words, the landscape character unit that is ‘hosting’ the proposed development.
- The Transmission Assets are treated as a permanent form of development with the potential of being reversed at some point in the future, although not necessarily at the end its design life (i.e. 35 years in this particular case).
- Assumptions and limitations relating to the visualisations and graphics production are set out in Appendix A of Annex 1.4: Landscape and visual impact assessment methodology of the ES.

10.12 Assessment of effects

10.12.1 Introduction

10.12.1.1 The impacts of the construction, operation and maintenance, and decommissioning phases of the Transmission Assets have been assessed during both the day and night. The impacts arising from the construction, operation and maintenance, and decommissioning phases of the Transmission Assets are assessed below together with the maximum design scenario against which each impact has been assessed.

10.12.1.2 A description of the likely effect on receptors caused by each identified impact is given below.

10.12.2 Impacts of landfall and onshore export cable corridor on onshore landscape character

10.12.2.1 The onshore export cable corridor elements would occupy a 17 km long tract of landscape between the landfall and the onshore substations. The study area includes a 1 km buffer around the landfall and the cable corridor route which will measure up to 100 m wide, widening to 180 m wide at the Network Rail crossing (see **section 10.9**). The study area includes the following Landscape Character Areas (LCAs):

- 15d Coastal Plain – The Fylde;
- 16b Mosslands – South Fylde Mosses;
- 19a: Coastal Dunes – Fylde Coast Dunes;
- Suburban; and
- Urban - industrial age.

10.12.2.2 Descriptions of the Lancashire LCAs are based on ‘A Landscape Strategy for Lancashire Landscape Character Assessment, 2000’ and on field survey verifications.

10.12.2.3 The construction phase will include the installation of temporary fencing, creation of areas of hardstanding for construction compounds (up to 18 compounds along the route which will be lit during night time working, when required), site clearance, construction of new junctions (where required) and temporary haul roads, excavation of open cut trenches and stockpiling of soil. In some locations, cables may be installed by HDD or equivalent trenchless technique. Task based lighting would be required for working in winter during darkness (refer to the Outline Construction Artificial Light Emissions Management Plan (doc ref J1.11)). The construction phase of the development could take up to 66 months (5 years) if the laying of the cable occurs sequentially, which is the MDS for this assessment. However, it is likely that construction activities would be undertaken in short-term stages along the onshore export and 400 kV grid connection cable corridors rather than continuously during the 66 months. The overall construction

programme durations are presented in Table 3.4 of Volume 1, Chapter 3: Project description of the ES.

10.12.2.4 Landfall refers to the area where the offshore export cables come ashore (i.e., make landfall) and are jointed to the onshore export cables via the TJBs. This will be undertaken by direct pipe installation. This activity falls entirely within LCA 19a Coastal Dunes – Fylde Coast Dunes.

10.12.2.5 Due to the nature of the development, the construction activities associated with the landfall and onshore export cable corridor will generally only cause disruption during the temporary construction phase. Once operational, the cable will be hidden underground with only inspection covers visible at the joint bays and link boxes. The existing habitats and features affected by the construction of the onshore export cable corridor will be reinstated following completion with no significant landscape effects likely to persist post-construction. Therefore, as stated in **section 10.8**, operational impacts attributable to the landfall and onshore cable corridor have been scoped out.

10.12.2.6 During scoping, the Planning Inspectorate confirmed that decommissioning impacts may be scoped out where cables will be left *in situ*. To minimise the environmental disturbance during decommissioning the onshore export cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). This would require limited activity at the cable joint bays. Otherwise, they will be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. No new open cut trenching is proposed. Therefore, decommissioning impacts have been scoped out.

Direct and indirect impacts on landscape character – 19: Coastal Dunes – 19a Fylde Coast Dunes

10.12.2.7 The landfall is located within this small LCA, where the offshore cable on the seabed connects to the onshore cable at Lytham St. Annes (see Figures 1.1 and 1.2 in Volume 3, Annex 10.2: Landscape character baseline technical report). Open cut trenching may be required in the intertidal beach area and may require task lighting during working hours in the winter months (refer to the Outline Construction Artificial Light Emissions Management Plan (doc ref J1.11)). HDD or equivalent works are also likely to be required to undertake the landfall works from the transition joint bays. The construction compounds and excavation work to construct the six transition joint bays will be on land within Blackpool Airport and is likely to be located in the less sensitive landward part of the character area that includes the road/railway corridor and golf course, which lies within the Green Belt shown on Figure 10.3 and Figure 10.4 (see Volume 3, figures). Its sensitivity to the development is high to medium. Some elements of the development would be prominent in a tranquil coastal landscape particularly during the construction phase.

Landscape value

Landscape quality

10.12.2.8 The natural character of the coastal sandy beach and dunes, and their good condition, are the most valuable element of the area. The golf courses, airport and urban fringe of the landward elements of the area are lower quality although typical.

Scenic quality

10.12.2.9 A gently curving coastline with a strong relationship with a natural seascape has a relatively high scenic quality. The road corridor and urban fringe land uses around the airport have low scenic quality.

Rarity and representativeness

10.12.2.10 The sandy beach and dunes are attractive although typical of this part of the Lancashire coastline, contrasting starkly with the developed seafront at Blackpool.

Conservation interests

10.12.2.11 The Lytham St Annes Dunes are a SSSI and LNR and are nationally valuable for ecology and biodiversity as described in Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.

Recreational value

10.12.2.12 The beach and dunes are a large area of accessible coastal landscape and include the Lancashire Coastal Way long distance path, providing a valuable resource linking communities at Blackpool and Lytham St Annes.

Perceptual aspects

10.12.2.13 The natural beach and dunes have a wild and unmanaged character that is highly valued, which contrasts with the urban fringe character on the landward side of the character area.

Associations

10.12.2.14 There are no know cultural or artistic associations with this coastal landscape, which has a low value.

Functionality

10.12.2.15 The coastal landscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a more highly valued landscape. The beach and dunes have an important function as natural coastal defences and habitat.

Construction phase

Sensitivity of the receptor

10.12.2.16 The seaward area is characterised by attractive open dunes and a broad sandy beach with panoramic sea views. The coast is exposed and relatively wild in character forming a small remnant of landscape between settlements. Compared to the popular tourist beaches of Blackpool, such as South Beach, it is a comparatively rugged stretch of coast with no lighting. Its sensitivity to the development is high to medium. Some elements of the development would be prominent in a tranquil coastal landscape particularly during the construction phase.

10.12.2.17 The landscape is not designated for its scenic quality (although is in part designated as a Green Belt which is shown on Figure 10.3 and Figure 10.4 (see Volume 3, Figures) and has a medium value and integrity due to its natural characteristics of beach and dunes which are attractive, scenic qualities with ecological designations. The coastal landscape at the landfall location has a low capacity to accommodate the temporary construction activities which, although relatively small in scale, would be discordant and prominent locally within an attractive, open context. The coastal landscape is relatively exposed and wild in character with few detracting features on the seaward side and higher levels of tranquillity, resulting in a high susceptibility to temporary change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor to the direct effects of the landfall construction activities is **high**.

Magnitude of impact

10.12.2.18 The temporary construction activities within an open sandy beach and dunes would be discordant although reversible in nature within a natural, dark coastal location or less intrusive within the part of the character area that has an urban fringe location of Blackpool Airport, lit road corridor and golf course. The prominent impact of the moderate alteration to the coastal landscape is predicted to be of local spatial extent and medium to long term duration depending on whether the work runs concurrently or sequentially for the Transmission Assets. The magnitude is therefore **medium**.

Significance of the effect

10.12.2.19 Overall, the sensitivity of the receptor is **high** and the magnitude of the impact is **medium**. The effect will, therefore, be of **moderate** to **major adverse** significance during the day and at night, which is significant.

10.12.2.20 The infrastructure associated with the construction activities at the landfall on the beach and urban fringe location of Blackpool Airport would temporarily impact the landscape characteristic of openness within the Green Belt. The temporary nature of the effects will minimise any perceived impact on the openness of the Green Belt, which would not be significant.

Indirect impacts on landscape character – Urban - Industrial Age

10.12.2.21 This LCA is located outside the Onshore Order Limits and beyond the immediate construction area for the landfall and the onshore export cable corridor (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES). Whilst there is potential for some direct impacts, the assessment conclusions have assumed activities would take place outside of this character area.

Landscape Value

Landscape quality

10.12.2.22 The mainly 20th century urban fringe townscapes of Blackpool and Lytham St Annes are typical of many settlements edges and have medium to low value.

Scenic quality

10.12.2.23 The mix of residential developments interspersed with commercial industrial development have low scenic quality.

Rarity and representativeness

10.12.2.24 The urban areas bordering the airport land are not rare and are typical of many settlement edges and have low value.

Conservation interests

10.12.2.25 There are no ecological or heritage designations within the urban areas which have a low conservation value.

Recreational value

10.12.2.26 Sports pitches and small pocket parks provide limited recreational opportunities.

Perceptual aspects

10.12.2.27 These urban areas are not wild or tranquil and have low value.

Associations

10.12.2.28 There are no know cultural or artistic associations with this urban townscape, which has a low value.

Functionality

10.12.2.29 The townscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a more highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.2.30 The area along the sea front is characterised by promenades and by attractive urban areas dating from the Victorian and Edwardian eras. Views from the promenade extend along the coast and out to sea. However, there is little intervisibility between the urban areas and the landfall area or the cable routes. A pattern of dense, rectilinear urban areas is characterised by inward facing views and numerous light sources at night.

10.12.2.31 The urban fringe townscape within the vicinity of the cable corridor comprises late 20th century residential developments interspersed with commercial industrial development which has no landscape designations and has a medium/low value and integrity. There would be no direct effect on this townscape which has a high capacity to accommodate the temporary influence of nearby construction activities within an open context. The townscape is tolerant of temporary change outside the LCA which would have very limited detriment to its existing character and a low susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is **low**.

Magnitude of impact

10.12.2.32 The temporary landfall and cable laying activities within a construction corridor within the context of coastal settlements would be slightly discordant although reversible in nature and a minor addition to the townscape context. The impact is predicted to be of local spatial extent and medium to long term duration depending on whether the work runs sequentially for the Transmission Assets. The magnitude is therefore **low**.

Significance of the effect

10.12.2.33 Overall, the sensitivity of the receptor is **low** and the magnitude of the impact is **low**. The effect will, therefore, be of **negligible to minor adverse** significance during the day and at night, which is not significant.

Direct and indirect impacts on landscape character – Suburban/Urban

10.12.2.34 A small part of this urban LCA at the Blackpool Road Recreation Ground is located within the onshore cable corridor of the Onshore Order Limits. Larger areas of the LCA lie within the 1 km study area for the landfall and onshore export cable corridor (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report).

Landscape value

Landscape quality

10.12.2.35 The late 20th century commercial and residential element of urban fringe Blackpool and Lytham St Annes is typical of many settlements edges and has low value.

Scenic quality

10.12.2.36 The commercial and industrial development has a low scenic quality.

Rarity and representativeness

10.12.2.37 The urban areas bordering the airport land are not rare and are typical of many settlement edges and have low value.

Conservation interests

10.12.2.38 There are no ecological or heritage designations within the urban areas which have a low conservation value.

Recreational value

10.12.2.39 The Blackpool Road Recreation Ground lies within a residential area on the northern edge of Lytham St Anne's and forms the location of the temporary cable laying activities. This large area of public open space and sporting facilities has a high recreational value. The urban areas of the wider LCA have a low value due to quality of built form and lack of green infrastructure.

Perceptual aspects

10.12.2.40 These urban areas are not wild or tranquil and have low value.

Associations

10.12.2.41 There are no known cultural associations with these townscapes, which have a low value.

Functionality

10.12.2.42 The townscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.2.43 The settlement edge within the study area has a fragmented weak character. Sprawling residential areas range from high rise tower

blocks to detached houses in large gardens and include numerous light sources at night. The area lies partially within the Green Belt and adjacent to the Marton Moss Conservation Area to the north of the cable corridor (see Volume 3, Figure 10.4). Visibility is truncated by other buildings.

10.12.2.44 The townscape is typical and common place and has a medium/low value and integrity. Direct effects on the suburban townscape would be limited to the Blackpool Road Recreation Ground. Two small construction compounds at the west and east ends of the recreation ground would provide locations for the trenchless cable installation beneath the open space. The strip of open space between the compounds would also be temporarily fenced off for approximately two months during the activities. The activities would take place in a residential context. This part of the LCA has a low capacity to accommodate the temporary activities which would be discordant in nature although small scale in extent, resulting in a medium susceptibility to change.

10.12.2.45 There would be no direct effect on the majority of this townscape which has a high capacity to accommodate the temporary influence of nearby construction activities within an open context. The townscape is tolerant of the proposed development changes outside the LCA that would have very limited detriment to its existing character and a medium to low susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.2.46 The temporary trenchless cable laying activities within a construction corridor within a recreation ground would be discordant although reversible in nature and a minor addition to the public open space. Generally, the activities would be in the context of coastal settlements, would be slightly discordant in nature and a minor addition to the townscape context. The impact is predicted to be of local spatial extent and up to medium term duration in the event of sequential construction for the Transmission Assets. The magnitude is therefore **medium** locally and **low** generally.

Significance of the effect

10.12.2.47 The sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **low**. The effect will, therefore, be of **moderate** to **minor adverse** significance during the day and at night, which is not significant.

Direct and indirect impacts on landscape character – 16b Mosslands – South Fylde Mosses

10.12.2.48 Approximately half of the onshore export cable corridor is proposed to be installed within this LCA (see Figure 1.1 Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

10.12.2.49 During the construction phase, direct impacts will occur across a 100 m wide area over a route of approximately 17 km, which lies partially within the Green Belt (see Volume 3, Figure 10.4). Direct impacts may include minimal tree removal, site clearance, soil storage, excavation, installation of temporary fencing, haul routes and construction compounds (areas of hardstanding with fencing and lighting). Following the laying of the cable, restoration work can commence, with soils and land uses being reinstated, whilst work continues elsewhere along the route.

Landscape value

Landscape quality

10.12.2.50 The flat landscape of large geometric fields and drainage channels has a sparse, rural character although is highly influenced by the settlement edges of Blackpool and Lytham St Annes and contains some low density residential areas. The quality of the area is typical and ordinary and of medium value.

Scenic quality

10.12.2.51 The predominantly agricultural landscape is open, with few features and large expanses of visible sky. The area is low density residential in the context of the Project. Away from settlements, the airport and energy infrastructure the area has a medium scenic value.

Rarity and representativeness

10.12.2.52 The landscape is typical of mosslands within flat, exposed coastal locations. The remnant carr woodland is fragmented, rare and vulnerable to change and is of medium to high value.

Conservation interests

10.12.2.53 The residential district at Marton Moss on the southern edge of Blackpool comprises large, detached houses within large gardens and is designated as a conservation area.

Recreational value

10.12.2.54 A network of PRoW crosses the western part of this landscape linking communities at Blackpool and Lytham St Annes.

Perceptual aspects

10.12.2.55 Areas of the rural landscape away from settlements, the airport and road corridors are more tranquil although the intensively farmed nature of the land and the suburban areas close to the Transmission Assets are not wild in character.

Associations

10.12.2.56 There are no known cultural associations with this rural/suburban landscape, which has a low value.

Functionality

10.12.2.57 The landscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.2.58 The LCA comprises an area of mossland, characterised by large skies, small woodland copses, including remnant carr woodland, and pylons, with an urban edge feel in close proximity to Blackpool and Lytham St Annes and influenced by lighting at night. It is an extremely flat area, particularly at Blackpool Airport, low lying with long open views. It has large geometric fields and drainage channels. The remnant carr woodland is fragmented, rare and vulnerable to change.

10.12.2.59 The landscape is not designated for its scenic quality (although is in part designated as a Green Belt) and has a medium value and integrity due to its predominantly agricultural land use and commonplace rural character (see Volume 3, Figure 10.3 and Figure 10.4). The landscape has a medium capacity to accommodate the temporary construction activities which, although relatively extensive within the cable corridor would be low level and within an open rural/urban fringe context. The coastal landscape is relatively exposed and managed in character, resulting in a medium susceptibility to temporary change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.2.60 The direct and indirect impacts of the temporary cable laying activities and construction corridor would be discordant although reversible in nature within an open agricultural landscape. The impact is predicted to be of local spatial extent and up to long term duration in the event of sequential construction for the Transmission Assets. The magnitude of direct impacts is therefore **medium**. There is potential for the construction activities to have an influence over the character of the landscape outside of the Onshore Order Limits, resulting in indirect effects within the 1 km radius study area. The magnitude of indirect impacts on the wider landscape outside of the cable corridor is therefore **negligible**.

Significance of the effect

10.12.2.61 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **negligible**. The direct effect will, therefore, be of **moderate adverse** significance and the indirect effect will be of **negligible adverse** significance during the day and at night, both of which are not significant.

Direct and indirect impacts on landscape character – 15d Coastal Plain – The Fylde

10.12.2.62 Approximately half of the onshore export cable corridor is located within this extensive LCA (see Figure 1.1 of Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

10.12.2.63 During the construction phase direct impacts will occur across a 100 m wide area over a route of approximately 17 km, which lies partially within the Green Belt (see Volume 3, Figure 10.3 and Figure 10.4). Direct impacts may include minimal tree removal, site clearance, soil storage, excavation, installation of temporary fencing, haul routes and construction compounds (areas of hardstanding with fencing and lighting). Following the laying of the cable, restoration work can commence, with soils and land uses being reinstated, whilst work continues elsewhere along the route.

Landscape value

Landscape quality

10.12.2.64 The gently undulating landscape of large, geometric improved pasture fields is interspersed with shelter belts and influenced by settlement edges and transport corridors. The quality of the area is typical and ordinary and of medium value.

Scenic quality

10.12.2.65 The predominantly agricultural landscape is relatively open, with low clipped hedgerows and few woodland features. Away from settlements, main roads and energy infrastructure the intensively farmed area has a medium scenic value.

Rarity and representativeness

10.12.2.66 The gently undulating, dairy and sheep farmed landscape is typical of lowland England and is of medium value.

Conservation interests

10.12.2.67 Field ponds are a particularly characteristic feature of this area and provide important wildlife habitats as described in Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.

Recreational value

10.12.2.68 A network of PRoW cross this landscape linking small communities as a valued asset.

Perceptual aspects

10.12.2.69 Areas of the rural landscape away from settlements, road corridors and energy infrastructure are more tranquil although the intensively farmed nature of the land is not wild in character.

Associations

10.12.2.70 There are no known cultural associations with this rural landscape, which has a low value.

Functionality

10.12.2.71 The landscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.2.72 This area is characterised by large geometric fields of improved pasture within flat or gently undulating lowland farmland. Woodland cover exists in shelter belts and ancient woodlands. Dense residential development and transport infrastructure traverse the landscape. The agricultural character of the area is becoming fragmented due to pressure of development.

10.12.2.73 The landscape is not designated for its scenic quality (although is in part designated as a Green Belt) and has a medium value and integrity largely due to its predominantly agricultural land use and typical rural characteristics of field system and scattered farmsteads (see Volume 3, Figure 10.3 and Figure 10.4). The landscape has a medium capacity to accommodate the extensive although relatively low key temporary construction activities within an open, rural/urban fringe context. The undulating coastal plain of farmland lacks significant vegetation and is relatively exposed, resulting in a medium susceptibility to temporary change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.2.74 The direct impacts of the temporary cable laying activities and construction corridor would be discordant although reversible in nature within an open agricultural landscape. The impact is predicted to be of local spatial extent and up to long term duration in the event of sequential construction for the Transmission Assets. The magnitude is

therefore **medium**. There is potential for the construction activities to have an influence over the character of the landscape outside of the Onshore Order Limits, resulting in indirect impacts within the 1 km radius study area. The magnitude of indirect impacts on the wider landscape outside of the cable corridor is therefore **negligible**.

Significance of the effect

10.12.2.75 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **negligible**. The direct effect will, therefore, be of **moderate adverse** significance and the indirect effect will be **negligible adverse** significance during the day and at night, both of which are not significant.

10.12.3 Impacts of onshore substations on onshore landscape character

10.12.3.1 There will be two substations, one for the Morgan Offshore Wind Project: Transmission Assets and one for the Morecambe Offshore Windfarm: Transmission Assets. These will be located within land to the south of Kirkham and north of Freckleton.

10.12.3.2 The two substations will be located close to one another, approximately 300 m apart. The two substation sites include both permanent and temporary compounds (see Volume 1, Chapter 3: Project description of the ES for further detail).

10.12.3.3 The details of the substations that have been assessed are as follows:

- Morgan onshore substation site permanent footprint 164,000 m^2. Four main buildings 80 m wide x 140 m long and 15 m high. The temporary construction compound will be 60,000 m^2 and will be in active for 36 months.
- Morecambe onshore substation site permanent footprint 55,000 m^2. Four main buildings 15 m wide x 30 m long and 13 m high. The temporary construction compound will be 42,500 m^2 and will be active for 30 months.

10.12.3.4 In order to facilitate the construction of the Morgan onshore substation construction access road and access bell mouth will be provided from A583 Kirkham Bypass.

10.12.3.5 The temporary construction access for the Morecambe onshore substation runs north from the A584/Preston New Road to the temporary construction compound. A new junction will be constructed from the A584 and will include a two way traffic control system where the temporary construction access meets the new junction. The length of the temporary construction access will be approximately 760 m and it will be 20 m in width. Approximately 7.3 m of this 20 m will be hard standing. This access will be retained post-construction as an operational access for Abnormal Indivisible Load (AIL) and Heavy

Goods Vehicles (HGV) deliveries to the Morecambe onshore substation.

10.12.3.6 The main operational access for the Morecambe onshore substation will be off Lower Lane. This operational access will be approximately 130 m in length with a permanent width of 15 m, 7.3 m of which will be hardstanding.

10.12.3.7 The study area includes a 5 km buffer around the onshore substations' permanent footprint. This straddles the following LCAs:

- 15d Coastal Plain – The Fylde;
- 17a Enclosed Coastal Marsh: Clifton and Hutton;
- 18a Open Coastal Marsh: Ribble Marsh; and
- 15b Coastal Plain: Longton – Bretherton.

10.12.3.8 Figures 10.2 (see Volume 3, Figures), shows the extent and locations of these LCAs relative to the onshore substations Study Area. Both onshore substations are located within the Fylde Coastal Plain (15d) and the majority of the onshore study area falls within this LCA.

10.12.3.9 Photomontages incorporating 3D, grey scale models of key infrastructure to illustrate the maximum design parameters of the onshore substations have been developed for representative viewpoint locations, shown in Figure 10.5 (see Volume 3, Figures). The Morgan onshore substation has been modelled with a footprint of 80 x 140 m. The main building of the Morecambe onshore substation has been modelled with a footprint of 15 m x 30 m. Maximum height parameters are 15 m for the main building of the Morgan onshore substation and 13 m for the Morecambe onshore substation.. Lightning rods up to 30 m high have been modelled within photomontages for both onshore substations.

10.12.3.10 Embedded and secondary landscape mitigation is referred to in **Table 10.16**. Commitment CoT15 relates to an Outline Landscape Management Plan which has been prepared and submitted with the application for development consent. The Outline Landscape Management Plan includes details of mitigation planting and management and maintenance operations. Where practical, landscape mitigation planting will be established as early as reasonably practicable in the construction phase.

10.12.3.11 The Outline Landscape Management Plan (document reference J2) sets out the landscape design proposals for enhancement of the local landscape, where practicable, and the Outline Design Principles document (document reference J3) sets out the process of achieving good design.

Direct and indirect impacts on landscape character – 15 Coastal Plain, 15d The Fylde

10.12.3.12 The construction phase will include the installation of temporary fencing, areas of hardstanding within construction compounds, site clearance, construction of new road junction, access roads and grading and earthworks. This clearance is likely to include removal of hedgerows and trees, up to seven field ponds and pasture and arable land associated with the Morgan and Morecambe onshore substations /construction compound sites.

10.12.3.13 Task lighting would be required for working in winter during darkness and for construction work (refer to the Outline Construction Artificial Light Emissions Management Plan (doc ref J1.11)). Disruption will occur around the sites for a period of up to 60 months whilst the substations are constructed. Once operational, the tallest buildings within the Morgan onshore substation will be up to 15 m high and the Morecambe onshore substation will be up to 13m high. Land within temporary construction compounds will be reinstated to its previous agricultural use.

10.12.3.14 Both onshore substations would be located entirely within this LCA, resulting in direct impacts (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

10.12.3.15 For a description of landscape value within LCA 15d Coastal Plain: The Fylde refer to **paragraph 10.12.2.64** to **10.12.2.71**.

Construction phase

Sensitivity of the receptor

10.12.3.16 This LCA is generally characterised by large geometric fields of improved pasture and some arable land within flat or gently undulating lowland farmland. Woodland cover exists in shelter belts and ancient woodlands. Dense residential development and transport infrastructure traverse the landscape. The area is becoming fragmented due to pressure of development. At a local level, the area of landscape in the vicinity of the proposed substations/construction compound sites comprises small, irregular pasture fields defined by low managed hedgerows and scattered hedgerow trees. The landform is relatively flat at the Morecambe onshore substation location whilst more undulating at the Morgan onshore substation location, sloping down to Dow Brook. Wet ditches and field ponds are common features within and around the sites, some of which have a relatively high level of ecological value. Settlements surround the small area of farmland including Newton-with-Scales to the east, Kirkham to the north, Kirkham prison and Hall Cross to the west and Freckleton to the south. A Green Belt designation extends over land between Kirkham and Freckleton within which both substation sites are located (see Volume 3, Figure 10.4). The open expanse of the Ribble Marshes lies to the south. See photography at

Volume 3, Annex 10.3: Visual baseline technical report of the ES to support landscape character descriptions.

10.12.3.17 The landscape is not designated for its scenic quality (although is in part designated as a Green Belt) and has a medium value and integrity largely due to its predominantly agricultural land use and typical rural characteristics of field system and scattered farmsteads (see Volume 3, Figure 10.4). The landscape has a medium capacity to accommodate the temporary construction activities associated with two substations and compounds within an open, rural/urban fringe context. The undulating coastal plain of farmland lacks significant vegetation and is relatively exposed, resulting in a medium susceptibility to temporary change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium.**

Magnitude of impact

10.12.3.18 The direct impacts during the construction phase would be discordant in nature within an open agricultural, urban fringe landscape. The substantial loss of elements and impact on the rural features of the landscape within the footprint of the substation/construction compound sites, which are uncharacteristic in nature, is predicted to be of local spatial extent and long term, temporary duration. The magnitude is therefore **high**.

10.12.3.19 The magnitude of indirect effects on the character of the wider landscape of the Coastal Plain: Fylde in the study area as a result of the influence of the construction activities would be **medium**.

Significance of the effect

10.12.3.20 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **high**. The direct effect on the landscape of the substation/construction compound sites will, therefore, be of **major adverse** significance during the day and at night, which is significant.

10.12.3.21 The indirect effect on the wider landscape surrounding the substation/construction compound sites will be of **moderate adverse** significance during the day and at night, which is not significant due to the temporary nature of the impact.

Operation and maintenance phase

Sensitivity of the receptor

10.12.3.22 The settled farmland landscape has no designations, is of medium value and integrity and has moderate capacity to absorb the proposed change, resulting in a medium susceptibility to long term change as a result of the operational substations. As set out in **paragraph 10.12.3.17**, the sensitivity of the receptor is **medium.**

Magnitude of impact

10.12.3.23 The direct impacts of the operational phase of the substation sites would be uncharacteristic within the open agricultural, urban fringe landscape. The direct impact of the operational substations would be dominant and predicted to be of local spatial extent and long term duration. The construction compounds would be restored to their previous agricultural land use. The magnitude of impact would remain **high**.

10.12.3.24 The magnitude of indirect effects on the character of the wider landscape of the Coastal Plain: Fylde in the study area as a result of the influence of the operational substations will be **medium**.

Significance of the effect: winter year 1

10.12.3.25 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **high**. The effect in winter year 1, before landscape mitigation planting has matured will, therefore, be of **major adverse** significance during the day and at night, which is significant.

10.12.3.26 The indirect effect on the wider landscape surrounding the substation sites will be of **moderate adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.3.27 By the summer of year 15 following the completion of the onshore substations, the landscape planting, where proposed, would be mature and in leaf. The landscape proposals would help to integrate the energy infrastructure into the agricultural landscape and connect to the existing green infrastructure of hedgerows, trees, grassland, stream and field ponds. The substations would be prominent in the landscape and lead to a moderate alteration to character. The magnitude of the direct impact will be medium and the sensitivity of the receptor is medium. The effect will, therefore, be of **moderate adverse** significance during the day and at night, which is not significant.

10.12.3.28 The indirect effect on the wider landscape surrounding the substation sites as a result of the minor addition to the character area would be reduced as the landscape proposals mature and will be of low magnitude of impact and **minor adverse** significance during the day and at night, which is not significant.

Indirect effects on landscape character – 15b Coastal Plain: Longton to Bretherton

10.12.3.29 The Coastal Plain: Longton to Bretherton landscape character area lies approximately 3.5 km to the south of the onshore substation sites on the western urban fringes of Preston and would have limited intervisibility with the substations (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

Landscape value

Landscape quality

10.12.3.30 The gently undulating landscape of mixed scale geometric field enclosures defined by hedgerows with mature oak trees includes both pasture and arable land. Woodland belts are scattered through the landscape and settlements and extensive energy infrastructure influence the overall character and quality of the area. The landscape is typical and ordinary and of medium value.

Scenic quality

10.12.3.31 The predominantly agricultural landscape ranges from relatively open near the River Ribble valley to enclosed and intimate, with a mix of low clipped and tall bushy hedgerows. The intensively farmed area generally has a medium scenic value although close to the fringes of Preston and large scale energy infrastructure the value reduces to low.

Rarity and representativeness

10.12.3.32 The gently undulating, farmed landscape is typical of lowland England and is of medium value.

Conservation interests

10.12.3.33 Hedgerow oaks and small copses are a characteristic feature of this area and provide important wildlife habitats as described in Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.

Recreational value

10.12.3.34 A network of PRoW cross this landscape linking settlements and small communities to the River Ribble Way, forming a valued asset.

Perceptual aspects

10.12.3.35 Areas of the rural landscape away from settlements and energy infrastructure are more tranquil although the intensively farmed nature of the land is not wild in character.

Associations

10.12.3.36 There are no known cultural associations with this rural landscape, which has a low value.

Functionality

10.12.3.37 The landscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.3.38 The agricultural landscape is influenced by urban fringe elements such as schools, colleges, nurseries, glass houses, hotels, horse paddocks, communication masts and electricity pylons. The network of hedgerows and hedgerow oak trees is gradually being eroded by these uses. The character area includes the National Grid Penwortham substation.

10.12.3.39 The landscape is not designated for its scenic quality (although is largely designated as a Green Belt) and has a medium to low value and integrity due to its fragmented agricultural land use and urban fringe influences. The landscape has a high capacity to accommodate the distant influence of the temporary construction activities associated with two substations and compounds within a nearby character area. The undulating coastal plain of farmland has some significant vegetation and is in parts relatively enclosed, resulting in a low susceptibility to temporary, indirect change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.3.40 There will be indirect effects on the landscape in the study area as a result of the influence of distant construction activities at the onshore substation sites which would lead to very minor alteration to landscape characteristics. The impact is predicted to be of local spatial extent and long term, temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.3.41 The sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.3.42 The urban fringe farmland has no landscape designations, is of medium value and moderate capacity to absorb change, resulting in a low susceptibility to long term, indirect change as a result of the onshore substations. As set out in **paragraph 10.12.3.39**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.3.43 There will be indirect effects on the landscape in the study area as a result of the influence of distant substation developments which would lead to very minor alteration to landscape characteristics. The impact is

predicted to be of local spatial extent and long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.3.44 The sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.3.45 Due to the distance of the substations from the character area the mature landscape planting, where proposed, would make a minimal difference to the influence the new substations would exert over surrounding landscape character, compared to the year 1 situation. The magnitude of the impact is negligible, and the sensitivity of the receptor is medium. The effect will, therefore, remain of **negligible adverse** significance during the day and at night, which is not significant.

Indirect impacts on landscape character – 17a Enclosed Coastal Marsh: Clifton and Hutton

10.12.3.46 The Enclosed Coastal Marsh: Clifton to Hutton LCA lies approximately 400 m to the south of the onshore substation sites on the western urban fringes of Preston and would have intervisibility with the onshore substations (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

Landscape value

Landscape quality

10.12.3.47 The flat, low lying landscape of large geometric fields of pasture and arable land is divided by ditches and drains. Limited clipped hedgerows and woodland belts have little influence over the exposed character. Wet mashes and sea defences line the River Ribble corridor. Extensive energy infrastructure influences the overall character and quality of the area. The landscape is typical and ordinary and of medium value.

Scenic quality

10.12.3.48 The isolated and exposed landscape ranges from intensively farmed to more natural coastal marshes and generally has a medium scenic value although close to the fringes of Preston and large scale energy infrastructure the value reduces to low.

Rarity and representativeness

10.12.3.49 The farmed marshes are in part unusual in character although where intensively managed are more typical of coastal landscapes and is of medium value.

Conservation interests

10.12.3.50 The coastal grasslands are of international importance for wild fowl species and are of high value as described in Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.

Recreational value

10.12.3.51 The River Ribble Way long distance footpath lies at the heart of this character area, connecting to rights of way south of the river, forming a valued recreational asset.

Perceptual aspects

10.12.3.52 Areas of the coastal marshes away from settlements and energy infrastructure offer receptors the most tranquil experience although where intensively farmed, the land is not wild in character, ranging from medium to high value.

Associations

10.12.3.53 There are no known cultural associations with this coastal landscape, which has a low value.

Functionality

10.12.3.54 The landscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.3.55 The exposed agricultural landscape comprises reclaimed enclosed marsh of large, geometric fields and parallel drainage ditches. There is a network of low clipped hedgerows and scattered isolated farmhouses.

10.12.3.56 The landscape is not designated for its scenic quality (although is largely designated as a Green Belt) and has a variable value and integrity from high to low due to its mosaic of marshes and agricultural land use. The landscape has a high capacity to accommodate the nearby influence of the temporary construction activities associated with two substations and compounds within an adjacent character area. The coastal marshes and farmland has very limited visually significant vegetation and is exposed, resulting in a low susceptibility to

temporary, indirect change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.3.57 There will be indirect effects on the landscape in the study area as a result of the influence of distant construction activities at the substation sites which would lead to very minor alteration to landscape characteristics. The impact is predicted to be of local spatial extent and long term, temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.3.58 Overall, the sensitivity of the receptor is **medium** and the magnitude of the temporary impact is **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.3.59 The urban fringe, coastal farmland has no landscape designations, is of overall medium value and moderate capacity to absorb change. As set out in **paragraph 10.12.3.56**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.3.60 There will be indirect effects on the landscape in the study area as a result of the influence of new substations within the context of the coastal marshes which would lead to very minor alteration to landscape characteristics. The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.3.61 Overall, the sensitivity of the receptor is **medium** and the magnitude of the permanent impact is **negligible**. The effect of the addition of new energy infrastructure into a neighbouring character area will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.3.62 The substations will be located adjacent to the character area and the mature landscape planting, where proposed, would make a minimal difference to the influence the new substations would exert over surrounding landscape character, compared to the year 1 situation. The magnitude of the impact is negligible, and the sensitivity of the receptor is medium. The effect will, therefore, remain of **minor adverse** significance during the day and at night, which is not significant.

Indirect impacts on landscape character – 18a Open Coastal Marsh: Ribble Marsh

10.12.3.63 The Open Coastal Marsh: Ribble Marsh LCA lies approximately 2 km south of the onshore substation sites (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

Landscape value

Landscape quality

10.12.3.64 The flat, low lying landscape of amorphous coastal marshes is natural and largely unmanaged, contrasting with adjacent farmed landscapes. The landscape has an unusual quality of generally medium value.

Scenic quality

10.12.3.65 The isolated and exposed landscape of coastal marshes have a stark beauty and generally a medium scenic value.

Rarity and representativeness

10.12.3.66 The natural marshes are in part unusual in character although typically found in coastal locations and is of medium value.

Conservation interests

10.12.3.67 The coastal grasslands and marshes are of international importance for wild fowl species and are of high value as described in Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.

Recreational value

10.12.3.68 The River Ribble Way long distance footpath lies on the fringes of this character area, connecting to rights of way south of the river, forming a valued recreational asset.

Perceptual aspects

10.12.3.69 Areas of the coastal marshes away from settlements offer receptors the most tranquil experience and have a wild and natural character with few human influences and generally have a high value.

Associations

10.12.3.70 There are no known cultural associations with this coastal landscape, which has a low value.

Functionality

10.12.3.71 The landscape is not located adjacent to or within the vicinity of a designated landscape and therefore does not contribute to the function of a highly valued landscape.

Construction phase

Sensitivity of the receptor

10.12.3.72 This is an extensive and expanding area of unenclosed coastal marsh incorporating wild characteristics which contrast with the neighbouring farmed landscapes of geometric fields and hedgerow boundaries.

10.12.3.73 The landscape is not designated for its scenic quality (although is largely designated as a Green Belt) and has a variable value and integrity generally from medium to high due to its mosaic of natural marshes. The landscape has a high capacity to accommodate the distant influence of the temporary construction activities associated with two substations and compounds within an adjacent character area. The coastal marshes have very limited visually significant vegetation and is exposed, resulting in a low susceptibility to temporary, indirect change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.3.74 There will be indirect effects on the landscape in the study area as a result of the influence of distant construction activities at the substation sites which would lead to very minor alteration to landscape characteristics. The impact is predicted to be of local spatial extent and long term, temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.3.75 The sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.3.76 The coastal marshlands have no landscape designations, are of medium value and integrity and have moderate capacity to absorb change. As set out in **paragraph 10.12.3.73**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.3.77 There will be indirect effects on the farmed landscape in the study area as a result of the influence of new substations within the context of the open coastal marsh which would lead to very minor alteration to landscape characteristics. The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.3.78 The sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.3.79 The substations will be located at distance from the character area and the mature landscape planting, where proposed, would make a minimal difference to the influence the new substations would exert over surrounding landscape character, compared to the year 1 situation. The magnitude of the impact is negligible, and the sensitivity of the receptor is medium. The effect will, therefore, remain of **negligible adverse** significance during the day and at night, which is not significant.

Decommissioning phase

10.12.3.80 Decommissioning of the onshore substations will be reviewed in discussion with the transmission system operator and appropriate regulators in the light of any other existing or proposed future use of the onshore substations. If complete decommissioning is required, then all of the electrical infrastructure will be removed and any waste arising disposed of in accordance with relevant regulations. Foundations will be broken up and the site reinstated to its original condition or for an alternative (separately agreed and consented) use.

10.12.3.81 Activities during decommissioning would be no greater than those occurring during the construction phase and the magnitude of impact and significance of effect would be the same as, or less than, those reported for the construction phase above.

10.12.4 Impacts of 400 kV grid connection cable corridor on onshore landscape character

Direct and indirect impacts on landscape character – 15d Coastal Plain – The Fylde

10.12.4.1 The north section of the 400 kV grid connection cable route, where it connects to the onshore substations is proposed within a wedge shaped area of land within this LCA between the settlement edges of

Freckleton and Preston south of Clifton (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

10.12.4.2 During the construction phase direct impacts will potentially occur within a 50 m wide temporary working corridor and areas south-west of Clifton and south of the A583/A582 junction. Direct impacts may include minimal tree removal, site clearance, soil storage, excavation, installation of temporary fencing, haul routes and construction compounds (areas of hardstanding with fencing and lighting). Following the laying of the cables, restoration work can commence, with soils and land uses being reinstated, whilst work continues elsewhere along the route.

10.12.4.3 Due to the nature of the development, the construction activities associated with the 400 kV grid connection cable route will generally only cause disruption during the temporary construction phase. Once operational the cable will be hidden underground with only inspection covers visible at the joint bays and link boxes. Therefore, operational impacts have been scoped out.

10.12.4.4 During scoping, the Planning Inspectorate confirmed that decommissioning impacts may be scoped out where cables will be left *in situ*. To minimise the environmental disturbance during decommissioning the 400 kV grid connection cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). This would require limited activity at the cable joint bays. Otherwise, they will be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. No new open cut trenching is proposed. Therefore, decommissioning impacts have been scoped out.

Construction phase

Sensitivity of the receptor

10.12.4.5 This area is characterised by narrow strip fields of improved pasture divided by gappy hedgerows within gently undulating farmland. Dense residential development and transport infrastructure traverse the landscape.

10.12.4.6 The landscape is not designated for its scenic quality (although is in part designated as a Green Belt) and has a medium value and integrity largely due to its predominantly agricultural land use and typical rural characteristics of field system and scattered farmsteads. The landscape has a medium capacity to accommodate the extensive although relatively low key temporary construction activities within an open, rural/urban fringe context. The undulating coastal plain of farmland lacks significant vegetation and is relatively exposed, resulting in a medium susceptibility to temporary change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.4.7 The direct impacts of the temporary cable laying activities and construction corridor would be discordant although reversible in nature within an open agricultural landscape. The impact is predicted to be of local spatial extent and up to long term duration in the event of sequential construction. The magnitude is therefore **medium**. There is potential for the construction activities to have an influence over the character of the landscape outside of the Onshore Order Limits, resulting in indirect effects within the 1 km radius study area. The magnitude of indirect effects on the wider landscape outside of the cable corridor is therefore **negligible**.

Significance of the effect

10.12.4.8 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **negligible**. The temporary direct effect will, therefore, be of **moderate adverse** significance and the indirect effect will be of **negligible adverse** significance during the day and at night, which is not significant.

Direct and indirect impacts on landscape character – 17a Enclosed Coastal Marsh: Clifton and Hutton

10.12.4.9 This area lies to the north and south of the River Ribble (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES). The character area would contain the temporary cable laying activities.

10.12.4.10 For a description of landscape value within LCA 17a Enclosed Coastal Marsh: Clifton and Hutton refer to **paragraphs 10.12.3.47** to **10.12.3.54**.

Construction phase

Sensitivity of the receptor

10.12.4.11 The coastal area is characterised by large geometric fields of arable and pasture farmland within a flat estuarine landform. Generally open field boundaries contrast with infrequent tree belts.

10.12.4.12 The landscape is not designated for its scenic quality (although is largely designated as a Green Belt) and has a variable value and integrity from high to low due to its mosaic of marshes and agricultural land use. The landscape has a high capacity to accommodate the direct effects of the temporary construction activities associated with the cable corridor, River Ribble crossing, Savick Brook crossing and compounds. The coastal marshes and farmland have very limited visually significant vegetation and is exposed, resulting in a medium susceptibility to temporary, direct change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.4.13 The direct impacts of the temporary cable laying activities and construction corridor would be discordant although reversible in nature within an open agricultural landscape. The impact is predicted to be of local spatial extent and medium to long term, temporary duration. The magnitude is therefore **medium**. There is potential for the construction activities to have an influence over the character of the landscape outside of the Onshore Order Limits, resulting in indirect effects within the 1 km radius study area. The magnitude of indirect effects on the wider landscape outside of the cable corridor is therefore **negligible**.

Significance of the effect

10.12.4.14 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **medium** to **negligible**. The temporary direct effect will, therefore, be of **moderate adverse** significance and the indirect effect will be of **negligible adverse** significance during the day and at night, which is not significant.

Direct and indirect impacts on landscape character – 18a Open Coastal Marsh: Ribble Marshes

10.12.4.15 The narrow character area follows the banks of the River Ribble (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

10.12.4.16 For a description of landscape value within the Open Coastal Marsh: Ribble Marshes, refer to **paragraphs 10.12.3.64** to **10.12.3.71**.

Construction phase

Sensitivity of the receptor

10.12.4.17 Flood defences, strips of woody vegetation and intertidal mud define this sliver of land.

10.12.4.18 The coastal marshlands have no landscape designations (although are largely designated as a Green Belt), are of a variable value and integrity generally from medium to high due to its mosaic of natural marshes. The landscape has a high capacity to accommodate the nearby influence of the temporary construction activities associated with River Ribble crossing within an adjacent character area. The coastal marshes have a low susceptibility to temporary, indirect change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.4.19 The indirect impacts of the HDD (or other trenchless technique) activities, crossing launch pits and temporary cable laying activities would be discordant although reversible in nature. The impact is

predicted to be of local spatial extent and medium to long term, temporary duration. The construction activities will have an influence over the character of the landscape outside of the Onshore Order Limits, resulting in indirect effects within the 1 km radius study area. The magnitude of indirect effects on the landscape outside of the cable corridor is therefore **negligible**.

Significance of the effect

10.12.4.20 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The temporary direct effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Direct and indirect impacts on landscape character – 15b Coastal Plain: Longton - Bretherton

10.12.4.21 This area lies to the south of the River Ribble on rising land (see Figure 1.1 in Volume 3, Annex 10.2: Landscape character baseline technical report of the ES).

10.12.4.22 For a description of landscape value within LCA 15b Coastal Plain: Longton – Bretherton, refer to **paragraphs 10.12.3.30** to **10.12.3.37**.

Construction phase

Sensitivity of the receptor

10.12.4.23 The area is characterised by a mix of small irregular and geometric fields of mainly pasture farmland with hedgerows and scattered mature trees. Linear settlements are dispersed throughout the area forming a network of lanes and built form. The landscape is relatively small grained and enclosed. The area within the cable corridor construction area is dominated by the National Grid Penwortham substation on the urban edge of Preston.

10.12.4.24 The landscape is not designated for its scenic quality (although is largely designated as a Green Belt) and has a medium to low value and integrity due to its fragmented agricultural land use and urban fringe influences. The landscape has a medium capacity to accommodate the temporary cable laying activities, construction corridor and compounds. The undulating coastal plain of farmland has some significant vegetation and is in parts relatively enclosed, resulting in a medium susceptibility to temporary, direct change as a result of the construction activities. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.4.25 The direct impacts of the temporary cable laying activities and construction corridor would be slightly discordant although reversible in nature and a minor addition within an agricultural landscape dominated

by the Penwortham substation within the cable corridor. The impact is predicted to be of local spatial extent and medium to long term, temporary duration. The magnitude is therefore **low**. There is potential for the construction activities to have an influence over the character of the landscape outside of the Onshore Order Limits, resulting in indirect effects within the 1 km radius study area. The magnitude of indirect effects on the wider landscape outside of the cable corridor is therefore **negligible**.

Significance of the effect

10.12.4.26 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact is **low** to **negligible**. The temporary direct effect will, therefore, be of **minor adverse** significance and the indirect effect will be of **negligible adverse** significance during the day and at night, which is not significant.

10.12.5 Visual impacts: substations

10.12.5.1 As set out in **section 10.8**, two substations are proposed within land to the south of the settlement of Kirkham and immediately to the north of Freckleton.

10.12.5.2 The assessment is informed by 18 representative viewpoints, as described in Table 10.11 and the location of the viewpoints are shown in Figures 10.2.The viewpoint visualisations are shown on Figure 10.5 which supports this LVIA and have been produced in accordance with Type 2 of the Landscape Institute's Technical Guidance Note 06/19 Visual Representation of Development Proposals.

10.12.5.3 It should be noted that the assessment of visual effects is based on field work and supported by the figures and visualisations and is not based entirely on the representative viewpoints themselves.

10.12.5.4 The construction phase will include the installation of temporary fencing, areas of hardstanding within construction compounds, site clearance, new road junctions and visibility splays (where required), access roads, drainage requirements and grading and earthworks.

10.12.5.5 Site clearance would include removal of hedgerows and some mature trees, up to seven field ponds and pasture land associated with the Morgan onshore substation/construction compound site and removal of limited number of trees, managed field boundary hedgerows both low and bushy, and pasture land associated with the Morecambe onshore substation/construction compound site.

10.12.5.6 Task lighting would be required for working in winter during darkness and for construction work (refer to the Outline Construction Artificial Light Emissions Management Plan (document reference J1.11)). Disruption will occur around the sites for a period of up to 60 months whilst the substations are constructed.

10.12.5.7 The maximum size of the buildings will be up to 15 m tall at Morgan onshore substation and 13m tall at the Morecambe onshore substation, with buildings and infrastructure occupying a combined footprint of 109,700 m^2 across the two parcels of land and 30 m high lightning rods..

10.12.5.8 The Outline Landscape Management Plan (document reference J2) sets out the landscape design proposals for enhancement of the local landscape, where practicable, and the Outline Design Principles document (document reference J3) sets out the process of achieving good design.

10.12.5.9 A total of 18 representative viewpoints have been chosen to assess the effects of the two substations. See Volume 3, Annex 10.3: Visual baseline technical report, Appendix A of the ES and photomontages at Figure 10.5 (see Volume 3, Figures).

Representative viewpoint VP1: Bridleway south of Morgan onshore substation site

10.12.5.10 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.11 This is a near, channelled and framed view from the south boundary of the proposed Morgan onshore substation site, looking north east, albeit views can also be gained south, experienced by equestrians and walkers, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.12 The impacts on visual receptors during the construction phase would be discordant in nature within an open agricultural, urban fringe landscape. Existing vegetation within the foreground of the view would be retained, limiting visibility across the landscape . The Morgan onshore substation construction site and activities would be prominent in the foreground of views to the north east. The higher level activities within the Morecambe onshore substation construction site and construction compounds would be potentially visible in mid-distance views over a foreground hedgerow to the south. Cable laying activities would cross the bridleway to the north resulting in some sections of hedgerow removal however, the majority of the hedgerows would be retained. The change in view will be long term and temporary duration. The magnitude is therefore **medium to high**.

Significance of the effect

10.12.5.13 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium to high**, depending on the angle of view from this location. The temporary effect will, therefore, be of moderate or **major adverse** significance during the day and at night, which is significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.14 As set out in **paragraph 10.12.5.11**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.15 There would be direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The retention of most existing vegetation would limit visibility across the landscape to the north and south. The buildings, external electrical infrastructure and security fences at the Morgan onshore substation would be prominent and at times dominant in the foreground of views to the north east. The slender forms of lightning rods would form the tallest visible elements at the substation. The tallest elements of built form and infrastructure at the Morecambe onshore substation would be partially visible in mid-distance views above a foreground hedgerow in a different angle of view from the same location to the south. Lightning rods at the Morecambe onshore substation would be partially visible through intervening vegetation. Views from horse back is a wide open panorama, in which the substation occupies a large angle of the view. The change in view will be of long term duration. The magnitude is therefore **medium to high**.

Significance of the effect: winter year 1

10.12.5.16 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium to high**, depending on the angle of view. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of up to **major adverse** significance during the day and at night, which is significant.

Further mitigation and residual effects: summer year 15

10.12.5.17 By the summer of year 15 the operational substations would be visible within the context of mature landscape planting proposals. The native tree and shrub planting within a broad belt of scrub in the foreground of the view would help to integrate the energy infrastructure into the framework of hedgerows and trees within the agricultural landscape and filter and screen views of built form and external infrastructure. The lightning rods at both substation sites would remain partially visible as the tallest elements of infrastructure. The magnitude of the impact will

reduce to low and the sensitivity of the receptor is high. The effect will, therefore, be of up to **moderate adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP2: Strike Lane, west of Morecambe onshore substation site

10.12.5.18 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.19 This is a mid-distance view through a field gate opening and along a green lane experienced by equestrians and walkers, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.20 The impacts on visual receptors during the construction phase would be slightly discordant in nature within an open agricultural, urban fringe landscape. The Morgan onshore substation construction site and activities would be barely perceptible beyond intervening hedgerows and trees to the north and the Morecambe onshore substation construction site and activities would be completely screened by intervening hedgerows and trees to the east. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.21 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.22 As set out in **paragraph 10.12.5.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.23 There would be limited impacts on visual receptors as a result of the operational Morgan onshore substation within an open agricultural, urban fringe landscape. The tops of buildings and external electrical infrastructure at the Morgan onshore substation would be partially visible above the intervening band of vegetation. The slender forms of

lightning rods would form the tallest visible elements at the Morgan onshore substation, visible above intervening vegetation. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.24 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.25 By the summer of year 15 the operational Morgan onshore substation would be barely perceptible within the context of rural farmland. Mature planting at the site is unlikely to be visible above existing intervening vegetation, although may add greater density and screening value in winter. The lightning rods at the Morgan onshore substation site would remain partially visible as the tallest elements of infrastructure. The magnitude of the impact will continue to be negligible and the sensitivity of the receptor is high. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP3: View from bridleway BW0505016

10.12.5.26 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.27 This is a near, channelled and framed view north of the proposed Morgan onshore substation site and immediately west of the construction compound experienced by equestrians and walkers, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.28 The impacts on visual receptors during the construction phase would be discordant in nature within an open agricultural, urban fringe landscape. Removal of hedgerows and trees within the Morgan onshore substation site would increase visibility across the landscape, opening up views of construction activities. The Morgan onshore substation construction site and activities would be prominent in the foreground of the view south, to the left of the bridleway. The activities within the Morgan onshore substation construction compound would be dominant in near views to the north east. The Morecambe onshore substation and associated construction compound activities would be

screened by existing vegetation in the landscape. The change in view will be long term and temporary duration. The magnitude is therefore **medium to high**.

Significance of the effect

10.12.5.29 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium** to **high**, depending on the angle of view from this location. The temporary effect will, therefore, be of up to **major adverse** significance during the day and at night, which is significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.30 As set out in **paragraph 10.12.5.27**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.31 There would be direct impacts on visual receptors as a result of the operational Morgan onshore substation within an open agricultural, urban fringe landscape. The removal of vegetation has the potential to initially increase visibility across the landscape. The buildings, external electrical infrastructure and security fences at the Morgan onshore substation would be clearly visible over the hedgerow in the foreground in views to the south east. The slender forms of lightning rods would form the tallest visible elements at the Morgan onshore substation. The Morecambe onshore substation would lie beyond hedgerows and trees to the south and would be largely screened in views. The lightning rods may be barely perceptible filtered through intervening vegetation. The change in view will be long term duration. The magnitude is therefore **medium to high**.

Significance of the effect: winter year 1

10.12.5.32 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium to high**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **major adverse** significance during the day and at night, which is significant.

Further mitigation and residual effects: summer year 15

10.12.5.33 By the summer of year 15 the operational Morgan onshore substation would be visible within the context of mature landscape planting proposals which would supplement the existing hedgerows and trees. The native woodland planting north of the substation and the additional hedgerow planting beside the bridleway would help to integrate the energy infrastructure into the agricultural landscape and filter and screen views of built form and external infrastructure. The Morecambe onshore substation would be completely screened by vegetation. The

lightning rods at both substation sites would remain partially visible as the tallest elements of infrastructure. The magnitude of the impact will be low and the sensitivity of the receptor is high. The effect will, therefore, be of up to **moderate adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP4: Parrox Lane east of Morecambe onshore substation site

10.12.5.34 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.35 This is a mid-distance, partially open view through a field gate looking south west to the Morgan onshore substation site experienced by walkers and road users. Walkers have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.36 The direct impacts on visual receptors during the construction phase would be discordant in nature within an open agricultural, urban fringe landscape. The removal of hedgerow vegetation and some trees within the Morgan onshore substation site would increase visibility across the landscape. The Morgan onshore substation construction site and activities and construction compound would be visible and recognisable in the mid-distance within a context of farmland to the west. The Morecambe onshore substation construction site and compound would be partially screened by intervening hedgerows and trees in mid-distance views to the south west. The change in view will be long term and temporary duration. The magnitude is therefore **low to medium**.

Significance of the effect

10.12.5.37 The sensitivity of the receptor is **high** and the magnitude of the impact is **low** to **medium**, depending on the angle of view from this location. The temporary effect will, therefore, be of **minor to moderate adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.38 In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.39 There would be direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The removal of vegetation would initially increase visibility across the landscape to the west. The buildings, external electrical infrastructure and security fences at the Morgan onshore substation would be visible in the mid-distance views. The built form and infrastructure at the Morecambe onshore substation would be barely perceptible, filtered and screened by intervening vegetation to the south west. The slender forms of lightning rods at both substations would form the tallest visible elements. The change in view will be permanent. The magnitude is therefore **low to medium**.

Significance of the effect: winter year 1

10.12.5.40 The sensitivity of the receptor is **high** and the magnitude of the impact is **low** to medium, depending on the angle of view. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor to moderate adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.41 By the summer of year 15 the operational Morgan onshore substation would be visible within the context of mature landscape planting proposals. The belts of native woodland and scrub, reinstated hedgerow and scattered trees beside the Dow Brook east of the substation would help to integrate the energy infrastructure into the agricultural landscape and filter and screen views of built form and external infrastructure. The lightning rods at the Morgan onshore substation site would remain clearly visible as the tallest elements of infrastructure. Mature woodland planting proposals at the Morecambe onshore substation site would provide further screening of the development within existing vegetation. The tops of some of the lightning rods would remain partially visible. The magnitude of the impact will be low and the sensitivity of the receptor is high. The effect will reduce to **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP5: View north west from footpath FP0509005

10.12.5.42 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.43 This is an open view looking north west across horse paddocks on the edge of the settlement of Newton-with-Scales experienced by walkers, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.44 The impacts on visual receptors during the construction phase would be barely discernible within an open agricultural, urban fringe landscape. The tops of the tallest elements of the Morgan substation and Morecambe onshore substation construction activities would be visible beyond landform and vegetation to the south west. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.45 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.46 As set out in **paragraph 10.12.5.43**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.47 There would potentially be limited impacts on visual receptors as a result of the operational Morgan onshore substation within an open agricultural, urban fringe landscape. The tops of the tallest buildings and external electrical infrastructure at the Morecambe onshore substation site would be visible beyond intervening hedgerows and trees, with the slender forms of lightning rods forming the tallest visible elements in the context of intervening pylon towers. The tops of lightning rods at the Morgan onshore substation would be barely perceptible beyond intervening vegetation and landform. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.48 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.49 The foreground hedgerow in this location would completely screen views beyond when in full growth and leaf in the summer. However, if the hedgerow is clipped the tops of trees within the proposed native woodland planting would be visible at year 15 although the view will remain very similar to year 1. The sensitivity of the receptor is **high** and the magnitude of the impact will be **negligible**. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP6: View from footpath north of A584

10.12.5.50 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.51 This is a near, open view looking north west from a footpath crossing a pasture field south of the Morecambe onshore substation site experienced by walkers, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.52 The Morecambe onshore substation construction site and activities would be clearly visible extending across a large proportion of the foreground view, with no intervening vegetation. The tallest elements of the Morgan onshore substation construction activities would be visible beyond the Morecambe activities in the foreground. The change in view will be long term and temporary duration. The magnitude is therefore **high**.

Significance of the effect

10.12.5.53 The sensitivity of the receptor is **high** and the magnitude of the impact is **high**. The temporary effect will, therefore, be of **major adverse** significance during the day and at night, which is significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.54 As set out in **paragraph 10.12.5.51**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.55 There would be direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The buildings, external electrical infrastructure and security fences at the Morecambe onshore substation would be clearly visible extending across the centre of the foreground view, with no intervening vegetation. The attenuation feature cut into the sloping land above the Dow Brook would be visible in front of the Morecambe onshore substation. The slender forms of the lightning rods would form the tallest elements of the substation, visible against the skyline. The tallest elements in the Morgan onshore substation would be partially visible above vegetation and landform, beyond the Morecambe onshore substation in the foreground. The lightning rods would be distantly visible as a cluster of slender objects. The change in view will be long term duration. The magnitude is therefore **high**.

Significance of the effect: winter year 1

10.12.5.56 The sensitivity of the receptor is **high** and the magnitude of the impact is **high**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **major adverse** significance during the day and at night, which is significant.

Further mitigation and residual effects: summer year 15

10.12.5.57 By the summer of year 15 the operational Morecambe onshore substation would be visible within the context of mature landscape planting proposals. The belt of native woodland and trees wrapping around the south east corner of the substation and attenuation feature and the belt of native scrub planting would help to integrate the energy infrastructure into the agricultural landscape and landform of the immediate context and filter and screen views of built form and external infrastructure. Mature native woodland planting at the Morgan onshore substation site would provide some further screening of the development within the backdrop of the view. The new woodland copse features would visually link the developments on the undulating low ridge form in the landscape. Lightning rods at the Morecambe onshore substation would be partially visible through intervening vegetation. The magnitude of the impact will be **medium** and the sensitivity of the receptor is **high**. The effect will reduce to **moderate adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP7: Kirkham Bypass north of Freckleton Road

10.12.5.58 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.59 This is a mid-distance open view looking south from Kirkham Bypass on the settlement edge experienced by pedestrians, cyclists and road users. Different groups of people using a road corridor generally have a medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.5.60 The impacts on visual receptors during the construction phase would be slightly discordant in nature within a rural edge/urban fringe landscape and busy road corridor. The Morgan onshore substation construction site and construction compound activities would be partially visible beyond buildings at Greenbank and Westfield Farms and heavily filtered through intervening vegetation in the mid-distance of views to the south east. The activities within the Morecambe onshore substation construction site and compound would be completely screened by landform and vegetation in the same angle of view. The change in view will be long term and temporary duration. The magnitude is therefore **low**.

Significance of the effect

10.12.5.61 The sensitivity of the receptor is **medium** and the magnitude of the impact is **low**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.62 As set out in **paragraph 10.12.5.59**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.5.63 There would be direct impacts on visual receptors as a result of the operational Morgan onshore substation within a rural edge/urban fringe landscape and busy road corridor. The tops of the tallest buildings and external electrical infrastructure at the Morgan onshore substation would be partially visible above intervening mature vegetation in the farmed landscape. The tops of the slender forms of lightning rods at Morgan onshore substation would form the tallest visible elements, partially filtered by trees. The buildings at the Morecambe onshore substation are likely to be completely screened and the lightning rods are unlikely to be perceptible at approximately 2km. The change in view will be permanent. The magnitude is therefore **low**.

Significance of the effect: winter year 1

10.12.5.64 The sensitivity of the receptor is **medium** and the magnitude of the impact is **low**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.65 Proposed landscape planting is unlikely to be of sufficient height to be visible at year 15, although it may supplement existing vegetation to further screen and filter views of the proposed development. The lightning rods at Morgan onshore substation would remain partially visible as the tallest elements of infrastructure. The magnitude of the impact will be negligible and the sensitivity of the receptor is medium. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP8: Kirkham Road, National Cycle Network route 62

10.12.5.66 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.67 This is a partially screened mid-distance view looking east from a pavement on Kirkham Road, which forms part of National Cycle route 62 experienced by cyclists within a road corridor and road users in a rural landscape. Different groups of people using a road corridor generally have a medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.5.68 The direct impacts on visual receptors during the construction phase would be slightly discordant in nature within an open agricultural, urban fringe landscape. Only the tallest elements of the Morgan onshore substation construction activities would potentially be visible above the rooftops of intervening properties at Hall Cross, forming a very minor element within the mid-distance of the view. The activities within the Morecambe onshore substation construction site and compound would be partially visible though gaps in hedgerow and trees on the right side of the view. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.69 The sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance

Sensitivity of the receptor

10.12.5.70 As set out in **paragraph 10.12.5.67**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.5.71 There would be potential for some direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. Glimpses of the tops of the tallest buildings and external electrical infrastructure at the Morgan onshore substation would potentially be visible on the skyline above intervening vegetation. The built form and infrastructure at the Morecambe onshore substation would be barely perceptible filtered through vegetation in the same angle of view. The tops of the slender lightning rods at both substations would be barely discernible on the skyline. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.72 The sensitivity of the receptor is **medium** and the magnitude of the impact is **negligible**. The effect in winter year 1 will be of **negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.73 Proposed landscape planting at the Morgan onshore substation and Morecambe onshore substation sites is unlikely to be of sufficient height to be visible at year 15. The lightning rods at both substations would remain barely perceptible as the tallest elements of infrastructure. The magnitude of the impact will be negligible and the sensitivity of the receptor is medium. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP9: Brown's Lane public footpaths FP0510007 and FP0510008

10.12.5.74 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.75 This is a partially screened mid-distance view looking east from a slightly elevated location experienced by walkers, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.76 The direct impacts on visual receptors during the construction phase would be discordant in nature within an open agricultural, urban fringe landscape. The Morgan onshore substation and Morecambe onshore substation construction sites and construction compound activities would be largely screened by intervening landform. The barely discernible change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.77 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.78 As set out in **paragraph 10.12.5.75**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.79 There would be very limited potential for direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The tops of the tallest buildings and external electrical infrastructure at the Morgan onshore substation and Morecambe onshore substation are likely to be obscured by vegetation and landform in the intervening landscape. The tops of the lightning rods are also likely to be imperceptible at more than 2km from the receptor. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.80 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The effect in winter year 1 will be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.81 Proposed landscape planting is unlikely to be of sufficient height to be visible in this view at year 15. The magnitude of the impact will be negligible and the sensitivity of the receptor is medium. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP10: Footpath FP0513016 and National Cycle Network route 62 (Treales Road)

10.12.5.82 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.83 This is an open view looking south west from a footpath connecting to Treales Road experienced primarily by walkers and cyclists who have a high susceptibility to change in a generally rural context and also adjacent road users who have a medium susceptibility to change in this farmland context. In accordance with **Table 10.19**, the sensitivity of the receptor is either **high or medium**.

Magnitude of impact

10.12.5.84 The direct impacts on visual receptors during the construction phase would be slightly discordant in nature within an open agricultural, urban fringe landscape. Only the tops of the tallest elements of the construction activities at the Morgan onshore substation and Morecambe onshore substation construction sites would potentially be visible rising out of existing vegetation within the agricultural landscape. The activities are likely to be barely perceptible at this distance. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.85 The sensitivity of the receptor is up to **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.86 As set out in **paragraph 10.12.5.83**, the sensitivity of the receptor is either **high or medium**.

Magnitude of impact

10.12.5.87 There would be limited potential for direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The tops of the tallest buildings and external electrical infrastructure, including lightning rods, at the Morecambe onshore substation and Morgan onshore substation would be barely discernible in the mid-distance. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.88 The sensitivity of the receptor is up to **high** and the magnitude of the impact is **negligible** due to the distant nature of the view and the extent of development likely to be visible. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.89 Proposed landscape planting is unlikely to be of sufficient height or scale to be visible at year 15 within the existing farmland vegetation. The sensitivity of the receptor is up to **high** and the magnitude of the impact will be **negligible**. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP11: Ribble Way

10.12.5.90 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.91 This is a panoramic view looking north across the River Ribble from the raised bank of the Ribble Way, experienced by walkers using a long distance footpath, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.92 The limited potential for direct impacts on visual receptors during the construction phase would be discordant in nature within an open marshland landscape with urban edge backdrop. The Morgan onshore substation and Morecambe onshore substation construction sites and activities would visually merge together and would be barely discernible in the distance, set within farmland on an urban edge. The change in

view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.93 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.94 As set out in **paragraph 10.12.5.91**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.95 There would be some direct impacts on visual receptors as a result of the operational substations within an agricultural, urban fringe landscape beyond open marshland. The buildings and external electrical infrastructure at the Morgan onshore substation and Morecambe onshore substation will be discernible at times in the backdrop to rural views. The slender lightning rods would be imperceptible at 5km. The change in view will be of long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.96 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.97 By the summer of year 15 the operational substations would be partially visible, albeit largely screened, within the context of mature landscape planting proposals. The native tree and shrub planting, where proposed, would help to integrate the energy infrastructure into the agricultural landscape and filter and screen views of built form and external infrastructure. The magnitude of the impact will be negligible and the sensitivity of the receptor is high. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP12: Farm access track/ bridleway BW0505016

10.12.5.98 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.99 This is a mid-distance, open view looking east across farmland from a bridleway on the edge of Kirkham, experienced by equestrians and walkers, who have a high susceptibility to change in a generally rural context. Similar views would be gained by occupiers of residential properties on Lower Lane adjacent to this location. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.100 The impacts on visual receptors during the construction phase would be discordant in nature within an open agricultural, urban fringe landscape. Existing vegetation along the bridleway west of the Morgan onshore substation within the middle distance of the view would be largely retained due to trenchless cable laying techniques crossing the bridleway and hedgerows, limiting visibility across the landscape of low level activities beyond. The Morecambe onshore substation construction site and construction compounds would be predominantly screened by intervening landform and vegetation in mid-distance views. The change in view will be long term and temporary duration. The magnitude is therefore **medium**.

Significance of the effect

10.12.5.101 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium**. The temporary effect will, therefore, be of **moderate adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.102 As set out in **paragraph 10.12.5.11**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.103 There would be direct impacts on visual receptors as a result of the operational substations extending across a large portion of an open agricultural, urban fringe landscape. The retention of most existing hedges and trees west of the Morgan site would limit visibility across the landscape of the lower level elements of Morgan onshore substation infrastructure, security fences and built form. The slender forms of the lightning rods would form the tallest elements of the substation, visible against the skyline. The tops of the tallest elements of built form and infrastructure at the Morecambe onshore substation would be partially visible in mid-distance views above intervening

landform and vegetation. The lightning rods at the Morecambe onshore substation would be distantly discernible as a cluster of slender objects rising above tree tops, however most of these will be screened or filtered by the intervening vegetation over this distance of 500m. The change in view will be of long term duration. The magnitude is therefore **medium**.

Significance of the effect: winter year 1

10.12.5.104 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of up to **moderate adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.105 By the summer of year 15 the operational substations would be visible within the context of mature landscape planting proposals. The native tree and scrub planting would help to integrate the energy infrastructure into the framework of hedgerows and trees within the agricultural landscape and filter and screen views of built form and external infrastructure. The lightning rods at both substation sites would remain visible as the tallest elements of infrastructure. The magnitude of the impact will reduce to low and the sensitivity of the receptor is high. The effect will, therefore, be of up to **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP13: Blackpool Road B5192

10.12.5.106 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.107 This is a mid-distance, open view looking south-west across gently undulating farmland from a bus stop on slightly elevated land experienced by pedestrians, cyclists and road users. Different groups of people using a road corridor generally have a medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.5.108 The impacts on visual receptors during the construction phase would be slightly discordant in nature within a rural landscape on an urban edge beyond a busy road junction. The Morgan onshore substation construction site and construction compound activities would be visible above a roadside hedgerow, partially filtered through intervening vegetation. The activities within the Morecambe onshore substation

construction site and compound would be largely screened by the dipping landform and intervening vegetation to the left of the Morgan construction activities. The change in view will be long term and temporary duration. The magnitude is therefore **medium**.

Significance of the effect

10.12.5.109 The sensitivity of the receptor is **medium** and the magnitude of the impact is **medium**. The temporary effect will, therefore, be of **moderate adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.110 As set out in **paragraph 10.12.5.59**, the sensitivity of the receptor is **medium**.

Magnitude of impact

10.12.5.111 There would be direct impacts on visual receptors as a result of the operational Morgan onshore substation within the rural backdrop to a view of a road junction. The main buildings, external electrical infrastructure, security fence and compound hard standing at the Morgan onshore substation would be clearly visible within a remodelled landform. The access road would be visible as a minor feature crossing the landscape. Vegetation within the foreground road corridor would partially filter and screen the distant view. The slender forms of the lightning rods would form the tallest elements of the substation, visible against the skyline in the context of existing pylon towers. The construction compound would be returned to its existing agricultural use. The Morecambe onshore substation would lie beyond and would be partially screened by intervening vegetation. The change in view will be permanent. The magnitude is therefore **medium**.

Significance of the effect: winter year 1

10.12.5.112 The sensitivity of the receptor is **medium** and the magnitude of the impact is **medium**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **moderate adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.113 Proposed landscape planting would wrap around the sides of the substation and hedgerows would line the access road. The native woodland and scrub planting would merge the new cuttings and embankments into the surroundings and soften and filter views of the main built form and external infrastructure. Only the tops of trees within

woodland planting at the Morecambe onshore substation site is likely to be visible, slightly strengthening the vegetated context of the development. The built form at both substations would remain partially visible. The lightning rods at both substation sites would remain visible as the tallest elements of infrastructure. The magnitude of the impact will be **low** and the sensitivity of the receptor is medium. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP14: Freckleton, Hillock Lane

10.12.5.114 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.115 This is a narrow, framed view through a field gate opening looking north-east across relatively open farmland, experienced primarily by occupiers of vehicles as a glimpse when travelling on the road who have a low susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is **low**.

Magnitude of impact

10.12.5.116 Due to the nature of the view, glimpsed briefly during a journey and the presence of intervening vegetation the substation construction activities are unlikely to be discernible. The cable laying activities and construction corridor would be glimpsed crossing the field within the view. The direct impacts on visual receptors during the construction phase would be slightly discordant in nature within an agricultural landscape. The activities are likely to be barely perceptible at this distance. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.117 The sensitivity of the receptor is **low** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.118 As set out in **paragraph 10.12.5.83**, the sensitivity of the receptor is **low**.

Magnitude of impact

10.12.5.119 There would be very limited potential for direct impacts on visual receptors as a result of the operational substations within an agricultural landscape. The tops of the tallest buildings and external electrical infrastructure at the Morecambe onshore substation and Morgan onshore substation would be barely discernible in the mid-distance. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.120 The sensitivity of the receptor is **low** and the magnitude of the impact is **negligible** due to the distant and glimpsed nature of the view and the extent of development likely to be visible. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.121 Proposed landscape planting is unlikely to be of sufficient height or scale to be visible at year 15 within the existing farmland vegetation. The sensitivity of the receptor is **low** and the magnitude of the impact will be **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP15: Wrea Green

10.12.5.122 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.123 This is a narrow, framed view through a gap in a hedgerow looking south-east from public open space on a residential edge, experienced by people using green space who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.124 The direct impacts on visual receptors during the construction phase would be slightly discordant in nature within an open agricultural, urban fringe landscape. Only the tops of the tallest elements of the construction activities at the Morgan onshore substation and Morecambe onshore substation construction sites would potentially be visible rising out of existing vegetation and built form at Kirkham within the agricultural landscape. The activities are likely to be barely

perceptible at this distance. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.125 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.126 As set out in **paragraph 10.12.5.83**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.127 There would be limited potential for direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The tops of the tallest buildings and external electrical infrastructure at the Morecambe onshore substation and Morgan onshore substation would be barely discernible in the mid-distance. The slender lightning rods would be imperceptible at more than 3km from the receptor. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.128 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible** due to the distant nature of the view and the extent of development likely to be visible. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.129 Proposed landscape planting is unlikely to be of sufficient height or scale to be visible at year 15 within the existing farmland vegetation. The sensitivity of the receptor is **high** and the magnitude of the impact will be **negligible**. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP16: Ribble Way embankment

10.12.5.130 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.131 This is a panoramic view looking north-west across the River Ribble from the raised bank of the Ribble Way, experienced by walkers using a long distance footpath, who have a high susceptibility to change in a generally rural context. In accordance with **Table 10.19**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.132 The limited potential for direct impacts on visual receptors during the construction phase would be discordant in nature within an open marshland landscape with industrial infrastructure and an urban edge backdrop. The Morgan onshore substation and Morecambe onshore substation construction sites and activities would visually merge together and would be barely discernible in the distance, set within farmland on an urban edge. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.133 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.134 As set out in **paragraph 10.12.5.91**, the sensitivity of the receptor is **high**.

Magnitude of impact

10.12.5.135 There would be some direct impacts on visual receptors as a result of the operational substations within an agricultural, urban fringe landscape beyond open marshland. The buildings and external electrical infrastructure at the Morgan onshore substation and Morecambe onshore substation will be discernible at times in the backdrop to rural views. The slender lightning rods would be imperceptible at more than 3km from the receptor. The change in view will be of long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.136 The sensitivity of the receptor is **high** and the magnitude of the impact is **negligible**. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.137 By the summer of year 15 the operational substations would be partially visible, albeit largely screened, within the context of mature landscape planting proposals. The native tree and shrub planting, where proposed, would help to integrate the energy infrastructure into the agricultural landscape and filter and screen views of built form and external infrastructure. The magnitude of the impact will be negligible and the sensitivity of the receptor is high. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP17: Blackpool Road A583/Preston New Road A584

10.12.5.138 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.139 This is a narrow, framed view looking north-west along a busy road corridor, experienced by occupiers of vehicles as a glimpse when travelling on the road who have a low susceptibility to change in this context. In accordance with **Table 10.19**, the sensitivity of the receptor is **low**.

Magnitude of impact

10.12.5.140 Due to the nature of the view, experienced relatively briefly during a journey and the presence of intervening vegetation in the form of roadside clipped hedgerows and clumps of trees, the distant substation construction activities are unlikely to be discernible. Taller elements of the cable laying activities and construction corridor would be glimpsed above hedgerows either side of the road corridor. The direct impacts on visual receptors during the construction phase would be slightly discordant in nature within an agricultural landscape. The substation construction activities are likely to be barely perceptible at this distance. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.141 The sensitivity of the receptor is **low** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.142 As set out in **paragraph 10.12.5.83**, the sensitivity of the receptor is **low**.

Magnitude of impact

10.12.5.143 There would be very limited potential for direct impacts on visual receptors as a result of the operational substations within an agricultural landscape. The tops of the tallest buildings and external electrical infrastructure at the Morecambe onshore substation and Morgan onshore substation would be barely discernible in the distance. The slender lightning rods would be imperceptible at more than 3km from the receptor. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.144 The sensitivity of the receptor is **low** and the magnitude of the impact is **negligible** due to the distant and glimpsed nature of the view and the extent of development likely to be visible. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.145 Proposed landscape planting is unlikely to be of sufficient height or scale to be visible at year 15 within the existing farmland vegetation context. The sensitivity of the receptor is **low** and the magnitude of the impact will be **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Representative viewpoint VP18: Edith Rigby Way A582 overbridge

10.12.5.146 See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES.

Construction phase

Sensitivity of the receptor

10.12.5.147 This is a distant, open view looking west from a footway/cycleway beside a dual carriageway on an elevated overbridge, experienced by pedestrians, cyclists and occupiers of vehicles when travelling over the bridge who have a medium or low susceptibility to change in this highway context. In accordance with **Table 10.19**, the sensitivity of the receptor is **medium** to **low**.

Magnitude of impact

10.12.5.148 Due to the nature of the view, experienced relatively briefly during a journey and the presence of mesh parapet safety barriers, moving traffic and nearby mature woodland, the nature of the distant substation construction activities are unlikely to be discernible. The substation construction activities are likely to be barely perceptible at this distance. The tall industrial buildings at the Westinghouse site will remain the most noticeable built form in the view. The change in view will be long term and temporary duration. The magnitude is therefore **negligible**.

Significance of the effect

10.12.5.149 The sensitivity of the receptor is **medium** or **low** and the magnitude of the impact is **negligible**. The temporary effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity of the receptor

10.12.5.150 As set out in **paragraph 10.12.5.83**, the sensitivity of the receptor is **medium** or **low**.

Magnitude of impact

10.12.5.151 There would be very limited potential for direct impacts on visual receptors as a result of the operational substations beyond a foreground context of busy highway corridor and the tall industrial buildings at the Westinghouse site. The tops of the tallest buildings and external electrical infrastructure at the Morecambe onshore substation and Morgan onshore substation would be barely discernible in the distance. The slender lightning rods would be imperceptible at more than 4km from the receptor. The change in view will be long term duration. The magnitude is therefore **negligible**.

Significance of the effect: winter year 1

10.12.5.152 The sensitivity of the receptor is **medium** or **low** and the magnitude of the impact is **negligible** due to the distant and glimpsed nature of the view and the extent of development likely to be visible. The effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.153 Proposed landscape planting is unlikely to be of sufficient height or scale to be visible at year 15 beyond the wooded middle distance of the view. The sensitivity of the receptor is **medium** or **low** and the

magnitude of the impact will be **negligible**. The effect will, therefore, be of **negligible adverse** significance during the day and at night, which is not significant.

Impacts experienced by occupiers of residential properties within settlements

10.12.5.154 The ZTV studies and field survey verifications identified potential visibility of the onshore substations from settlements including Newton with Scales, Freckleton, Kirkham and Hall Cross. Occupiers of residential properties would be able to gain private views of the Project. Views from these locations have been estimated based on surveys from nearby, publicly accessible locations. Occupiers of residential properties would have the potential for views of the temporary construction site and activities of the substations and the operational development. These settlements are represented by Representative Viewpoints at: Newton with Scales – VP4 and VP5, Kirkham – VP5, Hall Cross hamlet – VP8 and VP2 and VP13 and Higher House/Lower Lane related residential development – VP12.

Construction phase

Sensitivity of the receptor

10.12.5.155 Residents within properties and gardens that are able to gain views for long periods of time are of high to medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high** (main living rooms and gardens) to **medium** (upper floor bedrooms). Different levels of sensitivity would apply to occupiers in different rooms and outdoor spaces at the same property.

Magnitude of impact

10.12.5.156 The construction works and related activities would be difficult to discern in views from many settlement edges due to the retention of the intervening vegetation associated with residential gardens, highway corridors and field boundaries within farmland. Approximately 15 residential properties at Manor Drive on the southern edge of Kirkham lie within approximately 60 m of the Morgan onshore substation road access on the A583 Kirkham Bypass. The loss of roadside trees as a result of construction works is likely to contribute to the visibility of the Morgan onshore substation construction site and activities for occupiers of these properties, resulting in a **negligible** to **low** magnitude of impact.

10.12.5.157 Views of the Morgan onshore substation construction activities from upper floor rooms of approximately 20 residential properties on the western edge of Newton with Scales at Elm Place, Greenfield Lane and Acorn Avenue would be limited to upper parts of the substation buildings, resulting in a **negligible** to **low** magnitude of impact.

10.12.5.158 The retention of a large number of trees within a 470 m section of double hedgerows on the western boundary of the Morgan onshore substation site, would ensure views from Higher House and approximately 10 further nearby properties on Lower Lane and Kirkham Road would be filtered and partially screened. At a distance of approximately 600 m the Morgan onshore substation construction activities would be visible, although not prominent and similar in nature to the description for Representative Viewpoint 12. The Morecambe onshore substation construction site and activities would be largely screened by intervening landform and vegetation in mid-distance views. Overall, there would be a **low** to **medium** magnitude of impact.

Significance of the effect

10.12.5.159 Occupiers of residential properties at Manor Drive Kirkham are of **medium** or **high** sensitivity and the magnitude of change during construction would be **low** to **negligible**. The temporary effect will therefore be of **minor to negligible adverse** significance during the day and at night, which is not significant.

10.12.5.160 Occupiers of residential properties on the western edge of Newton with Scales are of **medium** or **high** sensitivity and the magnitude of change during construction would be **low** to **negligible**. The temporary effect will therefore be of **minor** to **negligible** adverse significance during the day and at night, which is not significant.

10.12.5.161 Occupiers of the residential properties at Higher House and on Lower Lane Kirkham are of **medium** to **high** sensitivity and the magnitude of change during construction is considered to be **medium** to **low**. The temporary effect will, therefore, be of **moderate to negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

Sensitivity

10.12.5.162 Residents within properties and gardens are of high to medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high** (main living rooms and gardens) to **medium** (upper floor bedrooms).

Magnitude of Impact

10.12.5.163 Approximately 15 residential properties at Manor Drive on the southern edge of Kirkham lie within approximately 60 m of the Morgan onshore substation road access. The loss of roadside trees on the A583 Kirkham Bypass would open up some filtered, narrow views of the access road crossing restored agricultural land and the Morgan onshore substation in the distance. for occupiers of these properties, resulting in a **negligible** to **low** magnitude of impact.

10.12.5.164 Occupiers of upper floor rooms of approximately 20 residential properties on the western edge of Newton with Scales at Elm Place, Greenfield Lane and Acorn Avenue would gain partially filtered, mid-distance views of the Morgan onshore substation and lightning rods, resulting in a **negligible** to **low** magnitude of impact.

10.12.5.165 Views gained by occupiers of Higher House and approximately 10 further nearby properties on Lower Lane and Kirkham Road would be filtered and partially screened. The tops of buildings and infrastructure, including the slender lightning rods, at the Morgan onshore substation approximately 600 m to the east would be visible, although not prominent. The Morecambe onshore substation would be largely screened by intervening landform and vegetation in mid-distance views, whilst the tops of the slender lightning rods would be visible. Overall, there would be a **low** to **medium** magnitude of impact.

Significance of the effect: winter year 1

10.12.5.166 Occupiers of residential properties at Manor Drive Kirkham are of **medium** or **high** sensitivity and the magnitude of change during operation in winter year 1 before landscape mitigation planting has matured would be **low** to **negligible**. The long term effect will therefore be of **minor to negligible adverse** significance during the day and at night, which is not significant.

10.12.5.167 Occupiers of residential properties on the western edge of Newton with Scales are of **medium** or **high** sensitivity and the magnitude of change during operation in winter year 1 before landscape mitigation planting has matured would be **low** to **negligible**. The long term effect will therefore be of **minor** to **negligible** adverse significance during the day and at night, which is not significant.

10.12.5.168 Occupiers of the residential properties at Higher House and on Lower Lane Kirkham are of **medium** to **high** sensitivity and the magnitude of change during operation in winter year 1 before landscape mitigation planting has matured is considered to be **medium** to **low**. The long term effect will, therefore, be of **moderate to negligible adverse** significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.169 Occupiers of residential properties at Manor Drive Kirkham are of **medium** or **high** sensitivity. New hedgerow and tree planting at the A583 junction and either side of the Morgan onshore substation access road would be mature connecting to surrounding field boundary patterns. Native woodland planting around the substation would also be mature. The proposed vegetation would screen and filter the majority of views of the new development, effectively merging infrastructure into the agricultural context. The tops of slender lightning rods would remain partially visible. The magnitude of change during operation would be **negligible**. The long term effect will therefore be of **minor to**

negligible adverse significance during the day and at night, which is not significant.

10.12.5.170 Occupiers of residential properties on the western edge of Newton with Scales are of **medium** or **high** sensitivity. Proposed native woodland and scrub wrapping around the Morgan onshore substation and trees along Dow Brook would be mature forming a new element of landscape infrastructure to merge development into the landscape and screen and filter views. The tops of slender lightning rods would remain visible on the skyline. The magnitude of change during operation would be **low** to **negligible**. The long term effect will therefore be of **minor** to **negligible** adverse significance during the day and at night, which is not significant.

10.12.5.171 Occupiers of the residential properties at Higher House and on Lower Lane Kirkham are of **medium** to **high** sensitivity. Retention of the majority of hedgerow and tree vegetation either side of the bridleway west of the Morgan onshore substation would filter and screen views of development. Reinstated sections of hedgerow and new belts of scrub and trees would supplement this landscape feature and provide additional screening. The tops of slender lightning rods would remain visible on the skyline. The magnitude of change during operation is considered to be **low to negligible**. The long term effect will, therefore, be of **minor to negligible adverse** significance during the day and at night, which is not significant.

10.12.5.172 No occupiers of residential properties on settlement edges have the potential to experience a degree of harm over and above substantial to make considering private views a public interest matter. Therefore assessment of residential visual amenity is not considered further within this chapter.

Impacts on local residents within individual properties

10.12.5.173 Occupiers of residential properties would be able to gain private views of the Project. Views from these locations at Greenbank Farm and Freshfield Farm have been estimated based on surveys from bridleway BW0505016. Occupiers of residential properties in close proximity would have the potential for near, open views of the temporary construction site and activities for the Morgan onshore substation and cable laying activities. Properties where occupiers are most likely to be affected include:

- Greenbank Farm (approximately 250 m from the Onshore Order Limits at the Morgan onshore substation site); and
- Freshfield Farm (approximately 200 m from the Onshore Order Limits at the Morgan onshore substation site)

10.12.5.174 Receptors within these two storey houses and gardens would have the potential to gain different types of view including:

- filtered and partially obscured views from ground floor rooms and gardens due to garden vegetation and outbuildings; and

- filtered and partially obscured elevated views from upper floor rooms due to garden vegetation and outbuildings.

Construction Phase

Sensitivity of the Receptor

10.12.5.175 Residents within properties and gardens that are able to gain views for long periods of time are of high to medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high** (main living rooms and gardens) to **medium** (upper floor bedrooms). Different levels of sensitivity would apply to occupiers in different rooms and outdoor spaces at the same property.

Magnitude of Impact

10.12.5.176 The construction of the Morgan onshore substation and onshore export cable would be prolonged and the activities would be discordant in views. The construction site and corridor and activities undertaken within them would be visible as minor elements in partially obscured or filtered views. The magnitude is therefore **low to negligible**.

Significance of Effect

10.12.5.177 Due to the availability of views from different locations within a property and the different levels of sensitivity associated with these locations combined with the types of view that are available depending on intervening garden vegetation/built form, a range of levels of significance are likely to occur for residents at the same property. Overall, the sensitivity of the receptor is **high** to **medium** and the magnitude of the visual impact on people living in nearby residential properties during construction is considered to be **low** to **negligible**. The effect will, therefore, be of **moderate to negligible adverse** significance during the day and at night, which is not significant.

Operation and maintenance phase

10.12.5.178 The hedgerows and trees either side of bridleway BW0505016, west of the Morgan onshore substation site would be largely retained, forming a high level screen to filter views of the new development from residential properties to the west. These landscape features would be enhanced through additional tree and shrub planting. The environmental mitigation and enhancement land west of the Morgan onshore substation would be created to accommodate new field ponds displaced as a result of the Project. Native woodland belts and clusters of trees would be established within this area for additional ecological and landscape diversity. This area of land lies immediately behind Freshfield Farm, between the residential property and the Morgan onshore substation.

Sensitivity of the Receptor

10.12.5.179 Residents within properties and gardens that are able to gain views for long periods of time are of high to medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high** (main living rooms and gardens) to **medium** (upper floor bedrooms).

Magnitude of Impact

10.12.5.180 Views gained by occupiers of Greenbank Farm and Freshfield Farm would be filtered and partially screened. The tops of buildings and infrastructure, including the slender lightning rods, at the Morgan onshore substation approximately 200 to 250 m to the south east would be visible, although not prominent. Overall, there would be a **low** to **negligible** magnitude of impact.

Significance of the effect: winter year 1

10.12.5.181 Occupiers of residential properties at Greenbank Farm and Freshfield Farm immediately west of the Morgan onshore substation site are of **medium** or **high** sensitivity and the magnitude of change during operation in winter year 1 before landscape mitigation planting has matured would be **low** to **negligible**. The long term effect will therefore be of **moderate** to **negligible** adverse significance during the day and at night, which is not significant.

Further mitigation and residual effects: summer year 15

10.12.5.182 Occupiers of the two residential properties at Greenbank Farm and Freshfield Farm are of **medium** to **high** sensitivity. Retention of the majority of hedgerow and tree vegetation either side of the bridleway west of the Morgan onshore substation would filter and screen views of development. Reinstated sections of hedgerow and new belts of scrub and trees would supplement this landscape feature and provide additional screening. Woodland belts around the environmental mitigation area immediately behind Freshfield Farm would be sufficiently mature to screen views towards the substation. The tops of slender lightning rods would remain visible on the skyline. The magnitude of change during operation is considered to be **negligible**. The long term effect will, therefore, be of **minor** to **negligible adverse** significance during the day and at night, which is not significant.

10.12.5.183 No occupiers of individual residential properties have the potential to experience a degree of harm over and above substantial to make considering private views a public interest matter. Therefore assessment of residential visual amenity is not considered further within this chapter.

Sequential Visual Amenity: Impacts experienced by people using local footpaths and bridleways within 1 km of the onshore substations

10.12.5.184 Three public rights of way in the vicinity of the Morgan and Morecambe onshore substation sites link together to form a single route, approximately 3km long, from which a sequence of near views of the existing landscape, temporary cable and substation construction activities and operational substations would be available to walkers and equestrians. Individual locations along this route have been assessed as representative viewpoints. Due to the moderate and major adverse effects identified in these locations an assessment of sequential effects is relevant for these receptors. Bridleway BW0505016 connects to Lower Lane in Kirkham crossing the landscape north-east between Greenbank and Westfield Farms. The route continues south along the western edge of the Morgan onshore substation site and connects to a farm access track on the northern edge of the Morecambe onshore substation site. Public footpath FP050503 follows the alignment of the track and continues south on the eastern edge of the Morecambe onshore substation site. The footpath crosses open farmland to the south-east, becoming footpath FP050504 before connecting to the A584 at Lower Farm on the eastern edge of Warton.

10.12.5.185 The entire length of the bridleway lies between low managed hedgerows. Between Lower Lane and the northern edge of the Morgan onshore substation site receptors are able to gain a sequence of open views extending over the hedgerows to gently rolling, farmland (Viewpoint 12). Views are characterised by pasture fields and settlement edges punctuated by farm buildings and overhead power lines. Between the northern edge of the Morgan onshore substation site and the northern edge of the Morecambe onshore substation site the hedgerows either side of the bridleway contain mature trees which frame and partially screen views, focussing attention along the corridor of the bridleway and restricting some views out over the gently rolling farmland (Viewpoints 1 and 3). Settlement edges and built form are less noticeable however, overhead power lines are prominent.

10.12.5.186 Views from the two connected footpaths between the southern end of the bridleway and the A584 are relatively open as walkers cross pasture fields with limited hedgerows and very few trees (Viewpoint 6). The Morecambe onshore substation site is clearly visible in near views when travelling north on FP050503, together with overhead power lines. The complex of large barns at Lower Farm are prominent from FP050504 at the southern end of this route and settlement fringes are visible in the distance.

Sensitivity of the receptor

10.12.5.187 People using local footpaths and bridleways for leisure purposes within a rural/urban fringe landscape are of high susceptibility to impacts. In

accordance with **Table 10.19**, the sensitivity of the receptors is therefore, considered to be **high**.

Construction phase

Magnitude of impact

10.12.5.188 Equestrians using bridleway BW0505016 would travel along a 600m long section of the route which lies within the Onshore Order Limits west of the Morgan onshore substation site. Open cut trenching for the onshore export cable installation would be required to cross the bridleway in several locations to connect into the substation compound. Section of hedgerows would be temporarily removed to accommodate the works. Locations where there are no hedgerow trees would be prioritised to minimise the need for tree removal. This section of the bridleway would be managed during construction activities to minimise disruption to equestrians and walkers (See Public Rights of Way Management Plan and Code of Construction Practice). Near, relatively open views of the construction site and activities would form prominent and at times dominant elements that would be discordant in nature within a sequence of views when travelling both north and south along the bridleway. Intermittent views of high level construction activities at the Morecambe onshore substation site would also be visible in combination with activities at the Morgan onshore substation site in views south from the bridleway.

10.12.5.189 Views from the western section of the bridleway between Lower Lane and the Morgan onshore substation site and from the southern section of the bridleway between the Morgan onshore substation site and the Morecambe onshore substation site would include near to mid distance views of construction activities at both substation sites within a predominantly rural context with urban fringe and electrical infrastructure influences.

10.12.5.190 Walkers using footpath FP050503 would travel along a 180 m long section of the route which lies within the Onshore Order Limits south-east of the Morecambe onshore substation site where open cut trenching for the 400 kv onshore cable installation would be required to connect into the substation compound. Near open views of the construction site and activities would form prominent and at times dominant elements that would be discordant in nature within a sequence of views when travelling both north and south along the footpath. Intermittent views of high level construction activities at the Morgan onshore substation site would also be visible in combination with activities at the Morecambe onshore substation site in views north from the footpath.

10.12.5.191 Views from the southern section of the footpath and from FP050504 would include mid distance views of construction activities at both substation sites within a predominantly rural context with urban fringe and electrical infrastructure influences.

10.12.5.192 The maximum duration for the substation construction phase would be 60 months. The change in view will be long term and temporary duration. The magnitude is therefore **medium** to **high**.

Significance of the effect

10.12.5.193 Overall, the sensitivity of the receptor is **high** and the magnitude of the sequential visual impact on people using the 3 km long section of bridleway and footpaths during construction is considered to be **medium** to **high**. The effect will, therefore, be of **major** adverse significance during the day and at night, which is significant.

Operation and maintenance phase

Magnitude of impact

10.12.5.194 As set out in **section 10.8**, PRoWs will be reinstated as soon as reasonably practical. An Outline Public Right of Way Management Plan (document reference J1.5) includes details of temporary and permanent diversions, closures, gated crossings and signage to be provided during construction (see **Table 10.16**, CoT32).

10.12.5.195 Equestrians using bridleway BW0505016 would travel along a 600 m long section of the route which lies adjacent to the west of the Morgan onshore substation site. There would be direct impacts on visual receptors as a result of the operational substations within an open agricultural, urban fringe landscape. The buildings, external electrical infrastructure and security fences at the Morgan onshore substation would be prominent and at times dominant in the foreground of views. The slender forms of lightning rods would form the tallest visible elements. The tallest elements of built form and infrastructure at the Morecambe onshore substation would be partially visible in mid-distance views over retained hedgerows and through trees.

10.12.5.196 Views from the western section of the bridleway between Lower Lane and the Morgan onshore substation site and from the southern section of the bridleway between the Morgan onshore substation site and the Morecambe onshore substation site would include near to mid distance views of the tops of substation building , external infrastructure and the slender forms of the lightning rods within a predominantly rural context with urban fringe, agricultural buildings and electrical infrastructure influences.

10.12.5.197 Walkers using footpath FP050503 would travel along a 180 m long section of the route in close proximity to the Morecambe onshore substation site. Near open views of the substation buildings, external infrastructure and cluster of slender lightning rods would form prominent and at times dominant elements within a sequence of views when travelling both north and south along the footpath. Intermittent views of tops of buildings and lightning rods at the Morgan onshore substation site would also be visible in combination with the Morecambe onshore substation site in views north from the footpath.

10.12.5.198 The change in view will be of long term duration. The magnitude is therefore **medium** to **high**.

10.12.5.199 The buildings, external electrical infrastructure, and security fences, would be clearly visible, with no intervening vegetation in the view from both the bridleway BW0505016, which extends immediately next to the western boundary of the Morgan onshore substation site, and the PRoW FPB0505003, which lines the eastern side of Morecambe onshore substation, therefore resulting in a **high** magnitude of impact. The change in the view will be of a long term duration.

Significance of the effect: winter year 1

10.12.5.200 The sensitivity of the receptor is **medium** to **high** and the magnitude of the impact is **high**. The sequential visual effect for users of these public rights of way in winter year 1 before landscape mitigation planting has matured will, therefore, be of **major adverse** significance during the day and at night, which is significant.

Further mitigation and residual effects: summer year 15

10.12.5.201 By the summer of year 15 the operational substations would be visible within the context of mature landscape planting proposals. The sections of hedgerows either side of the bridleway removed during cable laying activities would be established and mature, with the appearance of fully reinstated landscape features. The native tree and shrub planting, where proposed, would help to integrate the energy infrastructure into the agricultural landscape and filter and screen views of built form and external infrastructure. The tops of lightning rods would remain the tallest and most visible elements in near views. The sensitivity of the receptor is **medium** to **high.** The magnitude of the impact will be **medium**. The nature of the sequential visual effect will reduce however, the overall effect will be **major adverse** significance during the day and at night, which is significant.

Decommissioning phase

10.12.5.202 Decommissioning of the onshore substations will be reviewed in discussion with the transmission system operator and appropriate regulators in the light of any other existing or proposed future use of the onshore substations. If complete decommissioning is required, then all of the electrical infrastructure will be removed and any waste arising disposed of in accordance with relevant regulations. Foundations will be broken up and the site reinstated to its original condition or for an alternative (separately agreed and consented) use.

10.12.5.203 Activities during decommissioning would be no greater than those occurring during the construction phase and the magnitude of impact and significance of effect would be the same as, or less than, those reported for the construction phase above.

10.12.6 Visual impacts – landfall and onshore export cable corridor

10.12.6.1 The onshore export cable corridor elements of the Transmission Assets occupy a 17 km long tract of landscape between the landfall near Lytham St Annes and the onshore substations. The visual impact study area covers a 1 km buffer around the landfall and the Onshore Infrastructure Area.

10.12.6.2 The landfall, where the offshore export cable comes onshore will be installed by direct pipe trenchless installation technique from a location at or near Blackpool Airport. This will pass beneath the railway and Lytham St Annes SSSI and the St Annes Old Links Golf Course. It will require a temporary construction compound within Blackpool Airport with exit pits at least 100 m from the western boundary of the Lytham St. Annes dunes SSSI. A cofferdam may be required at the beach and open cut trench in the intertidal area. A cable vessel would be located for a short period offshore and cable pulled onshore and joined to the onshore cable at the jointing bay.

10.12.6.3 Disruption will occur within the intertidal and onshore areas at this location for a period of up to 66 months. However, it is likely that construction activities would be undertaken in short-term stages along the onshore export cable corridors rather than continuously during the 66 months. Once operational, the cable will be located underground with only the inspection covers at the six transition joint bays visible.

10.12.6.4 The landfall and a tract of land approximately 4.5 km long at the western end of the onshore export cable corridor lies within open land designated as Green Belt. The settlement of Blackpool lies to the north and the settlement of Lytham St Annes lies to the south. The wide sandy beach transitions east to a ridge of sand dunes, the grassy coastal plain occupied by Blackpool Airport and then the flat expanse of agricultural land within the Fylde Mosslands LCA.

10.12.6.5 From here the onshore export cable corridor extends approximately 2.5 km east also within the Fylde Mosslands LCA.

10.12.6.6 The corridor extends for approximately 7 km east, largely through the gently undulating landscape of the Fylde Coastal Plain. A belt of landscape approximately 2 km wide at the western end of the cable corridor lies within land designated as Green Belt between the settlements of Kirkham to the north and Freckleton to the south.

10.12.6.7 The construction phase for the onshore export cables will include the installation of temporary fencing, areas of hardstanding within construction compounds (up to 18 compounds along the route, which will be lit), site clearance (with minimal tree removal), new junctions (where required), temporary haul roads, excavation of open cut trenches and stockpiling of soil. Task lighting would be required for working in winter during darkness (refer to the Outline Construction Artificial Light Emissions Management Plan (doc ref J1.11)). The construction phase of the development could take up to 66 months if the laying of the cable occurs sequentially.

10.12.6.8 Due to the nature of the development, the construction activities within the cable corridor will only cause disruption during the temporary construction phase. Once operational, the cable will be hidden underground with only inspection covers visible at the link boxes. Therefore, operational effects have been scoped out, as set out in **section 10.8**.

10.12.6.9 During scoping, the Planning Inspectorate confirmed that decommissioning impacts may be scoped out where cables will be left *in situ*. To minimise the environmental disturbance during decommissioning the onshore export cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). This would require limited activity at the cable joint bays. Otherwise, they will be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. No new open cut trenching is proposed. Therefore, decommissioning impacts have been scoped out.

10.12.6.10 Record photography taken at 12 locations along the cable route are included in Volume 3, Annex 10.3: Visual baseline technical report, Appendix B and C of the ES.

Impacts experienced by people using the beach for leisure and recreation

10.12.6.11 Access to the beach is generally freely available. In the event that cables are installed by open cut trenching in the intertidal area, works in the beach area would take up to 18 months within an overall construction period of 42 months. Beach closures may be required for up to two weeks per cable during the 18 month period (see Volume 3, Annex 10.3: Visual baseline technical report of the ES, Appendix B and C).

10.12.6.12 Open trenching would take place over a prolonged period which would be visibly discordant within an attractive and wild coastal landscape. The beach in this area is relatively undisturbed and tranquil. The construction activities would be disruptive to receptors enjoying the coastal landscape and potentially experienced in close proximity in open views but also visible in mid to long distance views due to the length and openness of the beach.

Construction phase

Sensitivity of the receptor

10.12.6.13 People using the relatively wild and tranquil beach for leisure and recreation are of high susceptibility to the proposed development. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high**.

Magnitude of impact

10.12.6.14 The installation of the cable and the construction activities associated with it would be prolonged and disruptive, although reversible in nature. The compounds and construction vehicles would be prominent features in views during the day and at night. The change in view will be long term and temporary duration. The magnitude is therefore **medium to high**, depending on a receptors proximity within the long beach.

Significance of the effect

10.12.6.15 Overall, the sensitivity of the receptor is **high** and the magnitude of the visual impact on people accessing the beach during construction is deemed to be **medium** to **high** depending on proximity to the landfall and cable construction works. The effect will, therefore, be of **moderate** to **major adverse** significance during the day and at night, which is significant.

Impacts experienced by people using National Trails/long distance paths

10.12.6.16 The Lancashire Coastal Way is a long distance trail along the county's scenic and historic coastline. The route runs along Clifton Drive North. National Cycle Route 62 also utilises this road. Settlement edges, the golf course and airport contrast with the wild character of sand dunes forming a context of contrasting urban and rural elements in views focussed inland. In this location, the cables will be installed by HDD (or equivalent trenchless technique) beneath these features (see Volume 3, Annex 10.3: Visual baseline technical report of the ES, Appendix B and C).

Construction phase

Sensitivity of the receptor

10.12.6.17 People using the Lancashire Coastal Way recreational route are of high susceptibility to the change within a coastal/urban fringe context. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high**.

Magnitude of impact

10.12.6.18 Impacts during construction work will be minimal as the cables will be installed under the road from a location on or near the airport (with an exit pit above MHWS, beyond the high sand dunes, at the top of the beach). Landfall activities at the beach would be screened by intervening sand dunes. The impact is predicted to be of very localised spatial extent and long term, although reversible in nature. The magnitude is therefore **low** to **negligible**, depending on proximity to the temporary activities.

Significance of the effect

10.12.6.19 Overall, the sensitivity of the receptor is **high** and the magnitude of the visual impact on people using the Lancashire Coastal Way during construction and operation is deemed to be **low** to **negligible**. The effect will, therefore, be of **minor** or **moderate adverse** significance during the day and at night, which is not significant.

Impacts experienced by people using local footpaths and bridleways within 1 km of the corridor route

10.12.6.20 Eleven PRoWs have been identified that cross the onshore export cable corridor and would place visual receptors in close proximity to the temporary construction activities (see Volume 3, Annex 10.3: Visual baseline technical report of the ES, Appendix B and C and Figure 10.6). The agricultural landscape is flat or gently undulating with few hedgerows and trees, which enables walkers and equestrians to gain open, often panoramic views across farmland. Built form and residential properties on settlement edges are a typical feature of views and regularly form a backdrop of urban fringe elements within the sequence of views gained within a journey. Views of 360 degrees are possible from many locations and would enable receptors to temporarily experience the cable corridor including fences, haul roads, soil storage, cable laying activities, temporary routes and compounds crossing large tracts of land. The ability to gain many of these views would be temporarily prevented or disrupted, in the long term, where the routes cross the cable corridor and in some locations would be temporarily diverted, changing the visual experience for receptors.

10.12.6.21 Equestrians and walkers using bridleway BW052013 and BW0502015 would lie adjacent to approximately a 0.4 km length of the onshore export cable corridor.

Construction phase

Sensitivity of the receptor

10.12.6.22 People using local footpaths and bridleways for leisure purposes within a rural/urban fringe landscape are of high susceptibility to impacts. In accordance with **Table 10.19**, the sensitivity of the receptors is therefore, considered to be **high**.

Magnitude of impact

10.12.6.23 The construction phase would be prolonged and disruptive and views of the activities within a largely rural context would be discordant in nature although impacts would be reversible. As set out in **section 10.9**, PRoWs will be reinstated as soon as reasonably practical. An Outline Public Right of Way Management Plan (document reference J1.5) includes details of temporary and permanent diversions, closures,

gated crossings and signage to be provided during construction (see **Table 10.16,** CoT32).

10.12.6.24 The construction site corridor and activities undertaken within it, including construction compounds, would be prominent and extensive in many close proximity views, reducing to visible or recognisable as a minor element in mid-distance or partially obscured views. The magnitude will therefore be **medium** to **negligible**.

Significance of the effect

10.12.6.25 Due to the availability of views from different locations on a PRoW and the range and type of view that are available depending on orientation of route, intervening vegetation/landform/built form, a range of levels of significance are likely to occur for visual receptors travelling along the same PRoW. Overall, the sensitivity of the receptor is **high** and the magnitude of the visual impact on people using local bridleways and footpaths during construction is considered to be **medium** to **negligible**. The effect will, therefore, be of **major** to **minor adverse** significance during the day and at night, which is significant.

10.12.6.26 Walkers and equestrians using the following sections of PRoW are most likely to experience temporary significant effects due to a combination of the high sensitivity of the receptor, the lack of intervening vegetation within the landscape and the proximity of the cable corridor activities and construction compounds (See Figure 10.6);

- BW0502012 (approximately 650 m length of PRoW)
- BW0502013 (approximately 530 m length of PRoW)
- BW0502016 (approximately 240 m length of PRoW)
- BW0503012 (approximately 400 m length of PRoW)
- FP050302 (approximately 1,040 m length of PRoW)
- FP05010011 (approximately 175 m length of PRoW)
- FP050304 (approximately 330 m length of PRoW)
- FP050305 (approximately 400 m length of PRoW)

Users of public open space

10.12.6.27 The onshore export cable corridor would be located within the Blackpool Road Recreation Ground. Trenchless techniques would be used in this location requiring small, temporary compounds at the eastern and western ends of the open space. Receptors using the open space would be able to gain near open views of the compounds when in close proximity. The corridor between the compounds would be approximately 500m long with temporary fencing erected for up to two months. Receptors using the remaining area of public open space would gain near to mid distance open views of the construction activities in the context of the surrounding residential district.

Construction

Sensitivity of the receptor

10.12.6.28 People using public open space for leisure purposes are of high susceptibility to impacts. In accordance with **Table 10.19**, the sensitivity of the receptors is therefore, considered to be **high**.

Magnitude of impact

10.12.6.29 The construction phase would be medium term and disruptive and views of the activities would be discordant in nature although small in scale and reversible, forming prominent elements in near views and minor elements in more distant views. The magnitude will therefore be **low** to **medium**.

Significance of effect

10.12.6.30 Overall, the sensitivity of the receptor is **high** and the magnitude of the visual impact on people using the public open space during construction is considered to be **low** to **medium**. The effect will, therefore, be of **minor** to **major adverse** significance during the day and at night, which is significant.

Impacts experienced by people using NCR62

10.12.6.31 The National Cycle Route (NCR) 62 follows the alignment of Hillock Lane between Warton and Hall Cross. The cable corridor would cross the road placing cyclists in close proximity to temporary construction activities. The agricultural landscape in this location is gently undulating with low clipped hedgerows and few trees, which enables cyclists to gain open views across farmland. Receptors would experience the cable corridor including fences, haul roads, soil storage, cable laying activities, temporary routes and compounds crossing large tracts of land.

Construction Phase

Sensitivity of the Receptor

10.12.6.32 People using cycle routes for leisure purposes within a rural/urban fringe landscape are of high susceptibility to impacts. In accordance with **Table 10.19**, the sensitivity of the receptors is therefore, considered to be **high**.

Magnitude of Impact

10.12.6.33 The construction phase would be prolonged and disruptive and views of the activities within a largely rural context would be discordant although reversible in nature. The construction site corridor and activities undertaken within it, including construction compounds, would

be prominent and extensive in close proximity views from a section of cycleway approximately 350 m long. The magnitude will therefore be **medium**.

Significance of the effect

10.12.6.34 Overall, the sensitivity of the receptor is **high** and the magnitude of the visual impact on people using cycleways during construction is considered to be **medium**. The effect will, therefore, be of **major adverse** significance during the day and at night, which is significant.

Impacts on local residents

10.12.6.35 Occupiers of residential properties would be able to gain private views of the Project. Views from these locations have been estimated based on surveys from nearby, publicly accessible locations. Occupiers of residential properties in close proximity, and in some cases surrounded by, the onshore export cable corridor during construction would have the potential for near, open views of the temporary construction site and activities. Receptors in close proximity to construction compounds in particular would have greater potential for visual impacts due to the concentration and scale of activities and the potential for night time lighting. Properties where occupiers are most likely to be affected include:

- approximately 15 properties on Division Lane (approximately 50 to 175 m from the Onshore Order Limits);
- properties in two locations on Ballam Road, White Lodge and Bridge Farm (approximately 100 to 150 m from the Onshore Order Limits);
- Bridge Hall Farm (approximately 50 m from the Onshore Order Limits);
- Moss Side Villa Farm/ The Old Dairy (approximately 50 m from the Onshore Order Limits);
- Woodside Farm (approximately 125 m from the Onshore Order Limits);
- Great Carrside Farm and Wrea Brook Farm (approximately 150 to 175 m from the Onshore Order Limits);
- two properties at junction of Wrea Brook Lane and Bryning Lane (approximately 50 to 75 m from the Onshore Order Limits);
- Hillock Cross Farm (approximately 150 m from the Onshore Order Limits); and
- approximately 12 properties at The Chaltons (approximately 25 to 50 m from the Onshore Order Limits).

10.12.6.36 Receptors within houses and gardens in all of these locations would have the potential to gain different types of temporary view including;

- open views from ground floor rooms and gardens;
- open and elevated views from upper floor rooms;
- filtered views through garden vegetation; and
- partially obscured views due to outbuildings/garages.

Construction phase

Sensitivity of the receptor

10.12.6.37 Residents within properties and gardens that are able to gain views for long periods of time are of high to medium susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high** (main living rooms and gardens) to **medium** (upper floor bedrooms). Different levels of sensitivity would apply to occupiers in different rooms and outdoor spaces at the same property.

Magnitude of impact

10.12.6.38 The construction of the cable would be prolonged and the activities would be discordant in views although reversible. The construction site corridor and activities undertaken within it would be prominent in many close proximity, open views, reducing to visible or recognisable as a minor element in partially obscured views or more distant views. The magnitude is therefore **medium** to **negligible**.

Significance of the effect

10.12.6.39 Due to the availability of views from different locations within a property and the different levels of sensitivity associated with these locations combined with the range of type of view that are available depending on orientation of property, intervening garden vegetation/boundaries/built form, a range of levels of significance are likely to occur for residents at the same property. Overall, the sensitivity of the receptor is **high** to **medium** and the magnitude of the visual impact on people living in nearby residential properties during construction is considered to be **medium** to **negligible**. The effect will, therefore, be of **major** to **negligible adverse** significance during the day and at night, which is significant.

10.12.6.40 Occupiers of the following residential properties are most likely to experience temporary significant effects due to a combination of the high sensitivity of the receptor in main reception rooms and gardens, the lack of intervening garden vegetation or vegetation within the landscape and the proximity of the cable corridor activities and construction compounds;

- Bridge Farm
- Bridge Hall Farm
- Moss Side Villa

- The Old Dairy
- Hillock Cross Farm

10.12.7 Visual impacts – 400 kV grid connection cable corridor

10.12.7.1 The grid connection cable corridor elements of the Transmission Assets occupy an 8 km long tract of landscape between the onshore substations and the existing National Grid Penwortham substation on the edge of Preston. The visual impact study area covers a 1 km buffer around the grid connection cable corridor. A Green Belt designation covers a small part of the landscape within the north western end of the corridor, with a second area of Green Belt designated within a large tract of land south of the River Ribble and west of the settlement of Preston.

10.12.7.2 The construction phase for the grid connection cable corridor will include the installation of temporary fencing, areas of hardstanding within construction compounds which will be lit, site clearance (with minimal tree removal), new junctions and visibility splays (where required), temporary haul roads, excavation of open cut trenches, HDD crossing launch pits beside the River Ribble and stockpiling of soil. Task based lighting would be required for working in winter during darkness (refer to the Outline Construction Artificial Light Emissions Management Plan (document reference J1.11)). The construction phase of the development could take up to 66 months if the laying of the cable occurs sequentially. However, it is likely that construction activities would be undertaken in short-term stages along the 400 kV grid connection cable corridors rather than continuously during the 66 months.

10.12.7.3 The construction activities associated with cable laying within the corridor will only cause disruption during the temporary construction phase. Once operational, the cable will be hidden underground with only inspection covers visible at the link boxes.

10.12.7.4 During scoping, the Planning Inspectorate confirmed that decommissioning impacts may be scoped out where cables will be left *in situ*. To minimise the environmental disturbance during decommissioning the 400 kV grid connection cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). This would require limited activity at the cable joint bays. Otherwise, they will be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. No new open cut trenching is proposed.

Impacts experienced by people using local footpaths and bridleways within 1 km of the corridor route

10.12.7.5 Twelve PRoWs have been identified which have the potential to cross the cable corridor and would place visual receptors in close proximity to the temporary construction activities (see Volume 3, Annex 10.3: Visual

baseline technical report of the ES and Figure 10.6). The agricultural landscape is flat or gently undulating with few hedgerows and trees, which enables walkers and equestrians to gain open, often panoramic views across farmland. Built form on settlement edges, major road corridors and electrical infrastructure are a typical feature of views. 360 degree views are possible from many locations, particularly the raised flood defences beside the River Ribble and would enable receptors to experience the cable corridor crossing rural land. Walkers using a small section of PRoW beside the Savick Brook, immediately north of the A583, would also experience open views of the temporary activities. The ability to gain many of these views would temporarily be prevented, in the long term, where the routes cross the cable corridor and would be temporarily diverted, changing the visual experience for receptors.

Construction phase

Sensitivity of the receptor

10.12.7.6 People using local footpaths and bridleways for leisure purposes to access the landscape are of high susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptors is therefore, considered to be **high**.

Magnitude of impact

10.12.7.7 The construction phase for the 400 kV grid connection cables and River Ribble crossing would be prolonged and disruptive and views of the activities within a largely rural context would be discordant in nature although would be reversible. As set out in **Table 10.16**, PRoWs will be reinstated as soon as reasonably practical. A PRoW Management Plan will be developed. The Outline Public Right of Way Management Plan (document reference J1.5) will include details of temporary and permanent diversions, closures, gated crossings and signage to be provided during construction (see **Table 10.16**, CoT32).

10.12.7.8 The construction site corridor and activities undertaken within it, including construction compounds, would be prominent in many close proximity views, reducing to visible or recognisable as a minor element in mid-distance or partially obscured views. The magnitude is therefore generally **medium** to **negligible**.

Significance of the effect

10.12.7.9 Due to the availability of views from different locations on a PRoW and the range and type of view that are available depending on orientation of route, intervening vegetation/landform/built form, a range of levels of significance are likely to occur for visual receptors travelling along the same PRoW. Overall, the sensitivity of these receptors is **high** and the magnitude of the visual impact on people using local bridleways and footpaths during construction is considered to be **medium** to

negligible. The effect will, therefore, be of **major** to **minor adverse** significance during the day and at night, which is significant.

10.12.7.10 Walkers and equestrians using the following sections of PRoW are most likely to experience temporary significant effects due to a combination of the high sensitivity of the receptor, the lack of intervening vegetation within the landscape and the proximity of the cable corridor activities and construction compounds (See Figure 10.6);

- FP050502 (approximately 475 m)
- BW0509012 (approximately 400 m)
- FP00905 (approximately 330 m)
- FP070907 (approximately 625 m)
- FP0709010 (approximately 380 m)

Impacts experienced by people using waterways

10.12.7.11 The River Ribble and the Savick Brook are waterways which would be crossed by the cable corridor and would place water based visual receptors in close proximity to the temporary construction activities (see Volume 3, Annex 10.3: Visual baseline technical report of the ES). These waterways are contained by steep sided banks set below the level of the surrounding landscape within the vicinity of the cable corridor. Views would generally be contained within the water course.

Construction phase

Sensitivity of the receptor

10.12.7.12 People using waterways for leisure purposes to access the landscape are of high susceptibility to change. In accordance with **Table 10.19**, the sensitivity of the receptors is therefore, considered to be **high**.

Magnitude of impact

10.12.7.13 The construction phase for the 400 kV grid connection cables at waterway crossings would be prolonged although activities would be intermittent and reversible in nature. However, views of the activities including compounds within a largely rural context would be limited. The construction site corridor and activities undertaken within it would be barely discernible elements in mid-distance or partially obscured views. The magnitude is therefore generally **negligible**.

Significance of the effect

10.12.7.14 Overall, the sensitivity of these receptors is **high** and the magnitude of the visual impact on people using waterways during construction is considered to be **negligible**. The effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant.

Impacts on local residents

10.12.7.15 Occupiers of residential properties within the 400 kV grid connection cable corridor study area have the potential to lie in close proximity to the construction site or activities and experience near, open views. Receptors in close proximity to construction compounds in particular would have greater potential for visual impacts due to the concentration and scale of activities and the potential for night time lighting. Receptors with private views at the following locations have the potential to be affected:

- properties on the edge of Newton-with-Scales (approximately 175 m to 300 m from Onshore Order Limits);
- Greenfield Park static caravan park (approximately 60 m from Onshore Order Limits);
- Two properties on Lower Lane and Lower House Farm (approximately 175 m to 300 m from Onshore Order Limits);
- Approximately eight properties on the southern edge of Clifton (approximately 50 m to 175 m from Onshore Order Limits);
- Clifton Marsh Farm (approximately 280 m from Onshore Order Limits);
- Savick Brook Farm (approximately 130 m from Onshore Order Limits);
- Old Hall Farm (approximately 50 m from Onshore Order Limits);
- Marsh Farm and eight properties on Howick Cross Lane (approximately 50 m to 100 m from Onshore Order Limits);
- Brook Farm (approximately 30 m from Onshore Order Limits); and
- approximately 10 properties on Townley Lane (approximately 50 to 200 m from Onshore Order Limits).

10.12.7.16 Receptors within houses and gardens in all of these locations would have the potential to gain different types of view including;

- open views from ground floor rooms and gardens;
- open and elevated views from upper floor rooms;
- filtered views through garden vegetation; and
- partially obscured views due to outbuildings/garages.

Construction phase

Sensitivity of the receptor

10.12.7.17 Residents in properties and gardens are of high to medium susceptibility to the proposed development depending on the use of rooms. In accordance with **Table 10.19**, the sensitivity of the receptor is therefore, considered to be **high** to **medium**. Different levels of

sensitivity would apply to occupiers in different rooms and outdoor spaces at the same property.

Magnitude of impact

10.12.7.18 The construction activities associated with the laying of the cable would be prolonged and the activities would be discordant in views although reversible in nature. The construction site corridor and intermittent activities undertaken within it would be prominent in many close proximity, open views, reducing to visible or recognisable as a minor element in mid-distance or partially obscured views or more distant views. The magnitude will therefore be **medium** to **negligible**.

Significance of the effect

10.12.7.19 Due to the availability of views from different locations within a property and the different levels of sensitivity associated with these locations combined with the range of type of view that are available depending on orientation of property, intervening garden vegetation/boundaries/built form, a range of levels of significance are likely to occur for residents at the same property. Overall, the sensitivity of the receptor is **high** or **medium** and the magnitude of the visual impact on people living in nearby residential properties during construction is considered to be **medium** to **negligible**. The effect will, therefore, be of **major** to **negligible adverse** significance during the day and at night, which is significant.

10.12.7.20 Occupiers of the following residential properties are most likely to experience temporary significant effects due to a combination of the high sensitivity of the receptor in main reception rooms and gardens, the lack of intervening garden vegetation or vegetation within the landscape and the proximity of the cable corridor activities and construction compounds;

- Savick Brook Farm
- Marsh Farm

Representative viewpoint VP19: Landfall, Blackpool Beach South

Construction and decommissioning phases

Sensitivity of the receptor

10.12.7.21 People walking or using the wide sandy beach for recreation are able to gain distant, open views out to sea and near to mid-distance views of the landfall construction activities. Receptors are of high susceptibility within this relatively wild location. In accordance with **Table 10.19**, the sensitivity of the receptor in this attractive and relatively wild coastal location is **high**.

Magnitude of impact

10.12.7.22 Open trenching would take place over a prolonged period which would be visibly discordant within an attractive and wild coastal landscape although the nature of the activities would be reversible. The beach in this area is relatively undisturbed and tranquil. The construction activities would be disruptive to receptors enjoying the coastal landscape and experienced in close proximity in open views. The impacts on visual receptors during the construction and decommissioning phases would be discordant in nature within an open seascape, albeit in the wider context of existing distant wind farms off the south coast of North Wales to the left and Cumbria to the right and distantly visible oil/gas platform to the west. Vessels associated with offshore cable laying activities would be close to the coastline for part of the construction phase to connect to the landfall location. The change in view will be long term and temporary duration. The magnitude is therefore **medium**.

Significance of the effect

10.12.7.23 The sensitivity of the receptor is **high** and the magnitude of the impact is **medium**. The temporary effect will, therefore, be of **major adverse** significance during the day and at night, which is significant.

10.12.8 Future monitoring

10.12.8.1 No monitoring to test the predictions made within the impact assessment is considered necessary.

10.13 Cumulative effect assessment methodology

10.13.1 Introduction

10.13.1.1 The landscape and visual CEA methodology has followed the methodology set out in Volume 1, Chapter 5: Environmental assessment methodology of the ES. The cumulative assessment considers three scenarios; Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets only, Transmission Assets together with Morgan Offshore Wind Project: Generation Assets only and Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets. These cumulative scenarios are followed by the cumulative assessment of all projects, plans and activities allocated into ‘tiers’ reflecting their current stage within the planning and development process. This tiered approach is adopted to provide a clear assessment of the Transmission Asses alongside other projects, plans and activities.

10.13.1.2 The cumulative assessment has been undertaken as follows:

- Scenario 1: Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets.
- Scenario 2: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets.
- Scenario 3: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets.
- Scenario 4: Scenario 3 together with Tier 1, Tier 2 and Tier 3 projects, plans and activities, defined as follows.
  - Scenario 4a: Transmission Assets and Tier 1 projects, plans and activities which are:
    - under construction;
    - permitted application;
    - submitted application; or
    - those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact.
  - Scenario 4b: Transmission Assets and Tier 2 projects, plans and activities which a:
    - scoping report has been submitted in the public domain.
  - Scenario 4c: Transmission Assets and Tier 3 projects, plans and activities which are:
    - where a scoping report has not been submitted and it is not in the public domain;
    - identified in the relevant Development Plan; or
    - identified in other plans and programmes.

10.13.1.3 This assessment is followed by all other relevant projects, identified by tier.

10.13.1.4 The cumulative assessment considers the Generation Assets and Transmission Assets together. The assessment for Morecambe Offshore Windfarm: Generation Assets encompasses this project cumulatively with the Transmission Assets. The assessment for Morgan Offshore Wind Project: Generation Assets encompasses this project cumulatively with the Transmission Assets.

10.13.1.5 The Tier 1 assessment considers the Transmission Assets alongside those projects defined within Tier 1, unless otherwise stated. The Tier 2 assessment includes the Transmission Assets, the Generation Assets, Tier 1 and other Tier 2 projects unless otherwise stated. The Tier 3 assessment is based upon less definitive parameters due to the limited nature of the information available for projects of this Tier and is subject to qualitative assessment cumulatively with the Transmission Assets only.

10.13.1.6 This tiered approach is adopted to provide a clear assessment of the Transmission Assets alongside other projects, plans and activities.

10.13.1.7 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 10.22** and illustrated in Figure 10.9 and Figure 10.10 (see Volume 3, Figures).

Table 10.22: List of other projects, plans and activities considered within the CEA

Project/plan	Status	Distance from the Transmission Assets (nearest point, km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Transmission Assets
Morecambe Offshore Windfarm	Submitted	30km from Onshore Order Limits	Offshore wind farm (generation assets); array area shown on Figure 1.8 (see Volume 3, Figures).	2026 to 2029	2029 to 2064	Yes
Morgan Offshore Wind Project	Submitted	50 km from Onshore Order Limits	Offshore wind farm (generation assets); array area shown on Figure 1.8 (see Volume 3, Figures).	2026 to 2030	2030 to 2065	Yes
Tier 1						
12 new grass sports pitches. Blackpool Airport Enterprise Zone (20/0114)	Permitted	Within Onshore Order Limits	Part of Blackpool Airport Enterprise Zone.	Not known	Not known	Yes
12 residential properties Kirkham Road, Freckleton (10/0552)	Under construction	Adjacent to Onshore Order Limits	Erection of 12 no. 5 and 6 bedroom detached, 2.5 storey properties.	Not known	Not known	Yes
Containerised battery storage unit off Howick Cross Lane (07/2022/00021/FUL)	Permitted	Within Onshore Order Limits	Siting of battery storage unit and ancillary infrastructure adjacent to existing Penwortham Substation.	Not known	Not known	Yes
Gas fired electricity generating facility off Howick Cross Lane (07/2018/3907/SCE)	Pending	Within Onshore Order Limits	Siting of electricity generating facility and ancillary infrastructure adjacent to existing Penwortham Substation.	Not known	Not known	Yes

Project/plan	Status	Distance from the Transmission Assets (nearest point, km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Transmission Assets
Battery storage facility off Howick Cross Lane (07/2021/00252/FUL)	Permitted	Within Onshore Order Limits	Siting of battery storage facility and ancillary infrastructure adjacent to existing Penwortham Substation.	Not known	Not known	Yes
155 residential properties, Warton (19/0461)	Outline Application	0.24km from Onshore Order Limits	Outline application for up to 155 dwellings with open space and landscaping.	2027 to 2032	2034	Yes
Agricultural storage building Queensway Park Farm (22/0261)	Pending	Within Onshore Order Limits	Erection of steel framed storage barn.	Not known	Not known	Yes
Residential extant permission, Lytham St Annes (22/0845)	Permitted	Within Onshore Order Limits	Large scale residential development.	Not known	Not known	Yes
Phoenix Park leisure facilities (06/2023/0245)	Pending	Within Onshore Order Limits	Dry ski slope, mountain bike track and lake with up to 13 lodges.	Not known	Not known	Yes
Newton Grange Bluefield solar farm (22/0204)	EIA screening	0.3 km from substation	25 MW solar farm, battery storage and associated development, approximately 32 ha.	Not Known	Not Known	Yes
Clifton Marsh Solar Farm	Pending	1.8 km from substation		Not Known	Not Known	No

10.13.2 Study area

10.13.2.1 The study area for the Transmission Assets is a 5 km buffer from the Morgan and Morecambe onshore substations and 1 km from the onshore cable corridor and landfall construction works.

10.13.2.2 The CEA study area for offshore infrastructure is limited to Morecambe Offshore Windfarm: Generation Assets, due to their proximity to the coastline at the landfall location. The Morecambe Offshore Windfarm: Generation Assets study area is a 51 km radius (1 km for the landfall works + 50 km for the wind turbines study area).

10.13.2.3 The CEA study area for onshore wind farms is a maximum of 40 km (5 km for the two onshore substations + 35 km for the CEA wind turbines). The study area for onshore wind farms is reduced, as onshore wind farms currently have smaller turbines and so the potential impacts will be exerted over a smaller area (see Volume 3, Figure 10.8). For all other onshore development, the CEA area has been confined to 1 km from the onshore cable corridor.

10.13.2.4 Individual ZTVs have been prepared for each wind farm/group of wind farms located within the respective study areas. Where the ZTV of the existing cumulative schemes overlap with the ZTV of the Transmission Assets there is the potential for cumulative effect on landscape and visual resources (see Volume 3, Figures 10.10 and 10.11).

10.13.3 Project types

10.13.3.1 The NatureScot (2022) guidance 'Assessing the cumulative landscape and visual impact of onshore wind energy developments' is the most up to date and relevant guidance for the whole of the UK and advises that an assessment of cumulative impacts associated with a specific development proposal should encompass the impacts of the proposal in combination with:

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

10.13.3.2 Cognisance of the Planning Inspectorate Guidance - Nationally Significant Infrastructure Projects - Advice Note Seventeen: cumulative effects assessment relevant to nationally significant infrastructure projects (2015), has also been taken for this assessment.

10.13.3.3 The first step in the cumulative assessment is the identification of which residual impacts assessed for the Transmission Assets on their own have the potential for a cumulative impact with other projects that are subject to a valid

10.13.3.4 planning application are included where specific circumstances indicate there is potential for cumulative effects to occur, with progressively decreasing emphasis placed on those which are less certain to proceed.

10.13.3.5 Operational and consented developments are in general treated as being part of the landscape and visual baseline i.e. it is assumed that consented schemes will be built.

10.13.3.6 The long list of cumulative projects for the cumulative LVIA within the study areas, is set out in Volume 1, Annex 5.5: Cumulative screening matrix and location plan of the ES.

Cumulative effects assessment - existing onshore and offshore wind farm projects

10.13.3.7 The existing onshore and offshore wind farm projects within the respective study areas (detailed in **section 10.13.2**) with the potential to have cumulative landscape and visual effects with the Transmission Assets are listed below.

Offshore wind farms

- Barrow (26 km from the Transmission Assets) 30 wind turbines, 120 m to tip.
- Burbo Bank (29 km from the Transmission Assets) 25 wind turbines, 138 m to tip.
- Burbo Bank extension (31 km from the Transmission Assets) 32 wind turbines, 187 m to tip.
- Gwynt y Môr offshore (45 km from the Transmission Assets) 160 wind turbines, 138 m to tip.
- North Hoyle offshore (43 km from the Transmission Assets) 30 wind turbines, 107 m to tip.
- Ormonde (40 km from the Transmission Assets) 30 wind turbines, 153 m to tip.
- Walney (37 km from the Transmission Assets) 102 wind turbines with tip heights of 150 m.
- Walney extension (40 km from the Transmission Assets) 87 wind turbines with tip heights in the range of 188 m to 195 m.
- West of Duddon Sands (30 km from the Transmission Assets) 108 wind turbines, 150 m to tip.

Onshore wind farms

- Lancaster group (35 to 55 km from the Transmission Assets).
- Liverpool/Lancashire group (40 to 50 km from the Transmission Assets).

Cumulative effects assessment - proposed projects

10.13.3.8 PINS Advice Note 17 defines cumulative projects as those that are proposed or under construction. It does not include existing projects. Following the

GLVIA3 and PINS guidance, this chapter has split the LVIA CEA projects into cumulative baseline and cumulative proposed projects.

10.13.3.9 Where the ZTV of the cumulative schemes overlaps with the ZTV of the Transmission Assets, there is the potential for cumulative landscape and visual effects. Cumulative ZTVs have been generated for the Transmission Assets in combination with the relevant existing and proposed offshore and onshore wind farms (see Volume 3, Figures 10.10 and 10.11).

10.13.3.10 For the purposes of this ES assessment, the specific projects, plans and activities included in the CEA are outlined in **Table 10.22**.

10.13.4 Scope of cumulative effects assessment

10.13.4.1 The impacts identified in **Table 10.23** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been selected from the Project Design Envelope set out in Volume 1, Chapter 3: Project description of the ES as well as the information available on other projects and plans.

Table 10.23: Scope of assessment of cumulative effects

Cumulative effect	Phase[a]			Project(s) considered	Justification
	C	O	D		
The LVIA considers the likely impacts of the Transmission Assets on the landscape and visual resources of the LVIA study area resulting from its construction, operation and maintenance and decommissioning. The receptor groups considered in the LVIA are as follows: Landscape receptors: • LCAs. Visual receptors • People using public open space and beaches; • Walkers and equestrians using PRoWs; and • Occupiers of residential properties.	Yes	Yes	Yes	Maximum design scenario as described for the Transmission Assets **Table 10.18** assessed cumulatively with the following other projects/plans det out within **Table 10.22** (see Volume 3, Figures 10.8 and 10.9).	Outcome of the CEA will be greatest when the greatest number of other schemes are considered.

[a] C=construction, O=operation and maintenance, D=decommissioning

10.14 Cumulative effects assessment

10.14.1 Introduction

10.14.1.1 A description of the significance of cumulative effects upon landscape and visual receptors arising from each identified impact is given below.

10.14.1.2 As set out in **paragraph 10.13.1.2**, four scenarios have been considered:

- Scenario 1: Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets.
- Scenario 2: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets.
- Scenario 3: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets.
- Scenario 4a to 4c: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets and other relevant projects and plans.

10.14.1.3 At 50 km from the Transmission Assets, there is no potential for cumulative effects to occur with the Morgan Offshore Wind Project: Generation Assets and thus Scenario 2, and by extension Scenario 3, are not considered further.

Types of cumulative landscape effects

10.14.1.4 GLVIA3 identifies the likely potential cumulative landscape effects as including the following.

- Effects on the fabric of the landscape resulting from the removal of, or changes in, individual elements or features of the landscape, and/or the introduction of new elements or features in the landscape.
- Effects on the aesthetic aspects of the landscape, e.g., scale, sense of enclosure, sense of naturalness or remoteness, or the perception of tranquillity.
- Effects on the overall character of the landscape, resulting from the above, leading to modification of key characteristics and possible creation of new landscape character.

10.14.1.5 A description of those effects that have the potential to be significant in terms of cumulative effects upon landscape and visual receptors arising from each identified impact is given below.

Types of cumulative visual effects

10.14.1.6 GLVIA3 sets out the types of cumulative visual effects on receptors. These are as follows.

- Combined – where the observer is able to see two or more developments from one viewpoint. The subsets of combined visual effects are:

  - in combination, where two or more developments are, or would be, within the observer's arc of vision at the same time, without turning their head; or
  - in succession, where the observer has to turn their head to see the various developments, both existing and proposed.
- Sequential - where the observer has to move to another viewpoint to see the same or different developments. Sequential effects may occur along routes or roads and/or PRoW. The subsets of sequential effects are:
  - frequently sequential, where the features appear regularly and with short time lapses between instances (dependant on speed and distance); or
  - occasionally sequential, where longer time lapses between appearances occur, due to speed of the observer and/or longer distances between viewpoints.

Existing wind farm projects which have the potential to result in cumulative effects

10.14.1.7 Existing offshore wind farms considered in this cumulative assessment (set out in **paragraph 10.13.3.7**) have been grouped into two as follows:

- North West England cluster, consisting of:
  - Barrow;
  - Ormonde;
  - Walney;
  - Walney Extension; and
  - West of Duddon Sands.
- North Wales cluster, consisting of:
  - Burbo Bank;
  - Burbo Bank Extension;
  - Gwynt y Môr Offshore; and
  - North Hoyle Offshore.

10.14.1.8 Existing onshore wind farms considered in this cumulative assessment have been grouped into two as follows:

- Lancaster group; and
- Liverpool/Lancashire group.

10.14.1.9 Combined ZTVs of the two relevant clusters of existing offshore wind farms and two clusters of existing onshore wind turbines and the onshore Transmission Assets have been produced (see Volume 3, Figures 10.10 and 10.11). The study areas for the individual wind farms have been calculated using the known heights of the turbines of each offshore wind farm and the table at paragraph 48 of Visual Representation of Wind Farms: Version 2.2 (SNH, 2017).

Approach

10.14.1.10 A description of the significance of cumulative effects of Transmission Assets upon landscape and visual receptors arising from identified impacts is identified in **Table 10.23**.

10.14.1.11 For a cumulative effect to occur, an additional effect must arise over and above the likely effect of implementing the Transmission Assets, measured against baseline conditions.

10.14.1.12 The assessment of cumulative seascape, landscape and visual effects is presented in two stages as follows.

- Effects arising from the Transmission Assets in conjunction with existing offshore and onshore projects as described in the previous section. ZTVs have been generated using the available data for the existing offshore wind farms, which have been grouped into two offshore clusters, namely: North West England and North Wales.
- Effects resulting from the Transmission Assets in conjunction with planned Tier 1 offshore and onshore projects listed in **Table 10.22**.

10.14.1.13 Cumulative ZTV plans relating to these two assessment scenarios are presented in Figures 10.10 and 10.11 (see Volume 3, Figures). Relevant figure references are given in brackets in the assessment below.

Impacts on landscape and visual resources as a result of the Transmission Assets together with existing developments

10.14.1.14 Cumulative impacts will potentially be caused by elements of the development components of the identified cumulative projects, in combination with those of Transmission Assets. Together these will potentially affect the characteristics, qualities and perceptions of the landscape and visual resource of the LVIA study area.

10.14.1.15 The assessment presented in **section 10.12** considered the likely effects on landscape and visual resources against the baseline conditions current at the time of writing (July 2024). The baseline includes existing offshore, operational wind farms south of Cumbria within the CEA LVIA study area (see Volume 3, Figure 10.7). The LVIA findings and conclusions thus had regard to these major development factors and the influence they exert on existing coastal landscape character and on views and visual amenity of users of the beach south of Blackpool.

Potential cumulative impacts on the fabric of landscape elements and features, the aesthetic aspects and overall character of landscapes together with existing development projects

10.14.1.16 Due to the temporary and reversible nature of the landfall activities for the proposed development, the onshore elements of the Transmission Assets will occupy a very small area of beach within the overall context of coastal landscape and seascape. Implementation of the Transmission Assets will therefore have negligible impact on the physical fabric of the landscape within the LVIA study area, whether considered in isolation or together with

existing offshore wind farm development projects. Consequently, there is no potential for significant adverse, cumulative effects to arise on the fabric of landscape elements and features together with existing development projects.

10.14.1.17 The aesthetic aspects of landscape resources are expressed in their overall character, their distinctive characteristics and qualities and the value attached to them by people/society. Regarding aesthetic aspects, GLVIA3 states:

'Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of the landscape that make different places distinctive.' (GLVIA3, paragraph 2.19 – a similar statement is made with respect to seascape at paragraph 5.6). And in defining them GLVIA3 states: '…the aesthetic aspects of the landscape – for example its scale, sense of enclosure, diversity, pattern and colour, and/or on its perceptual or experiential attributes, such as a sense of naturalness, remoteness or tranquillity.' (GLVIA3, paragraph 7.25).

10.14.1.18 GLVIA3 adds that regarding the assessment of landscape value:

'Scenic quality may also be relevant and will need to reflect factors such as sense of place and aesthetic and perceptual qualities.' (GLVIA3, paragraph 5.29).

10.14.1.19 Due to the lack of overlap with designated landscapes/seascapes within the LVIA study area, no effects on the special qualities of nationally and internationally designated landscapes will occur as a result of the Transmission Assets. There is some potential for cumulative effects on visual amenity as a result of an overlap of the temporary construction activities associated with the landfall element of the Transmission Assets and the 51km radius offshore wind farm study area in locations on the beach south of Blackpool. However, the distant location of offshore turbines between 35 and 50 km from the landfall, together with the relatively small scale and temporary nature of the onshore Transmission Assets will result in no potential for significant adverse, cumulative effects to arise on landscape character or visual amenity.

Cumulative effects on character - existing onshore wind farms with the Transmission Assets

10.14.1.20 The potential cumulative impacts on landscape and visual resources as a result of two identified groups of existing onshore wind farms and the Transmission Assets have been described in **section 10.14.2**. Only two proposed onshore wind farms, one at Longthwaite Farm and one at Deans Lane in the Liverpool/Lancashire group (see Volume 3, Figure 10.8), have been identified. It is considered that the addition of these proposed developments would not change the overall character, extent or visibility of onshore wind energy developments within the study area and would not change the conclusions of the CEA in the following sections.

10.14.2 Cumulative impacts on landscape character

10.14.2.1 The onshore export cable, 400 kV grid connection cable, and onshore substations will be located within the landscape of Lancashire between the landfall south of Blackpool and the western edge of Preston. Volume 1, Annex 5.5: Cumulative screening matrix and location plan of the ES identifies the long list of onshore CEA developments. Ten of these developments lie within the onshore export cable corridor, the 400 kV grid connection cable corridor, or the onshore substations locations, access roads and contractor compounds. These 10 schemes have been scoped into the onshore CEA to enable a cumulative assessment of direct effects on landscape character to be undertaken (see **Table 10.24**).

Table 10.24: Cumulative impacts on landscape character

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Construction and decommissioning phase		
Magnitude of impact (in accordance with **Table 10.20**) Refer to cumulative ZTV plans at Figures 10.9 and 10.10, and cumulative wireline at Figure 10.11 (see Volume 3, Figures).	The cumulative effects assessment for Scenario 1 considers the following: • **Indirect impacts on landscape character LCA 19a: Coastal Dunes – Fylde Coast Dunes**. Indirect impacts may occur on this character area where it lies outside of the seascape in which offshore CEA developments and existing offshore wind farms are located. Scenario 1 will form a temporary addition to the distant horizon of the open seascape, within the context of a short section of this relatively undeveloped coastline. Existing offshore wind farms off the south coast of Cumbria and off the north coast of Wales have a distant influence over the relatively undeveloped coastal landscape in this location. The distant seascape will become slightly more intensively developed following the development of the Morecambe Offshore Windfarm: Generation Assets. • The cumulative effect is predicted to be of regional spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be **low**.	The cumulative effects assessment for Scenario 4a considers the following: • **Direct impacts on landscape character - LCA 16B: Mosslands – South Fylde Mosses.** Three CEA developments lie within, or immediately adjacent to this agricultural character area between the urban edges of Blackpool to the north and Lytham St Annes to the south. Developments include leisure facilities, agricultural buildings and residential developments. Some of the developments will be located on the edges of the settlements, extending out into the landscape. The onshore export cable corridor will coincide with some of the larger cumulative developments, potentially forming a conflict during the Transmission Assets construction phase. When complete, some of the cumulative developments will change the character of the agricultural landscape from rural to urban, potentially creating a more developed context for the Transmission Assets construction phase. • The construction and decommissioning activities associated with the CEA developments will collectively form a prominent change in the urban fringe landscape of the South Fylde Mosses. The construction site for the Transmission Assets will be relatively extensive within this LCA however, the activities will be relatively low key in nature. • The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **medium.** • **Direct impacts on landscape character - LCA 17A: Enclosed Coastal Marsh – Clifton and Hutton Marsh**

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		and LCA 15B: Coastal Plain – Longton and Bretherton: One CEA development lies within this low lying coastal landscape of the Clifton and Hutton Marsh and three CEA developments lie within the gently undulating pasture farmland of the Longton and Bretherton coastal plain. Developments include leisure facilities within the Clifton and Hutton Marsh and energy facilities adjoining the existing Penwortham substation in the Longton and Bretherton coastal plain. These developments will be located away from the edges of the surrounding settlements, although adjoining existing development. The cable corridor has the potential to coincide with some of these cumulative developments, potentially forming a conflict during the Transmission Assets construction phase. When complete some of the CEA developments will change the character of the agricultural landscape from rural to urban, potentially creating a more developed context for the Transmission assets construction phase. • The construction and decommissioning activities associated with the CEA developments will collectively form a minor change in the agricultural/urban fringe landscape of the Clifton and Hutton Marsh and Longton and Bretherton Coastal Plain. The construction site for the Transmission Assets will be relatively extensive within these LCAs however, the activities will be relatively low key in nature. • The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **medium**. • **Direct impacts on landscape character - LCA 15D: Coastal Plain – The Fylde.** Three CEA developments lie within this agricultural character area between the urban edges of Blackpool and Lytham St Annes to the west and Preston to the east. Developments include a

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		solar farm with battery storage and a residential development. The developments will be located within the landscape, away from the many small settlements within the LCA. The cable corridor has the potential to coincide with some of these cumulative developments, potentially forming a conflict during the Transmission Assets construction phase. The Newton Grange Bluefield solar farm will lie in close proximity to the onshore substations, which are also located within this LCA. When complete the solar farm will have a distinct influence over the character of the agricultural landscape through the introduction of energy infrastructure, albeit low level, over a relatively large part of the character area and will provide a more developed context for the Transmission assets construction phase. • The construction and decommissioning activities associated with the CEA developments will collectively form a minor change in the rural landscape of the Fylde Coastal Plain. The construction corridor for the cable elements of the Transmission Assets will be relatively extensive within this LCA however, the activities will be relatively low key in nature. The construction sites and activities for the onshore substations would be focused in a single part of the LCA and will be more prominent in nature. • The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **medium**.
Sensitivity of receptor (in accordance with **Table 10.19**)	**LCA 19a: Coastal Dunes – Fylde Coast Dunes**: The landscape has a medium value, integrity and vulnerability and high recoverability. The sensitivity of this relatively wild coastal landscape to the direct effects of the landfall construction and decommissioning activities in combination with the	**LCA 16B: Mosslands – South Fylde Mosses:** The landscape has a medium value, integrity and vulnerability and high recoverability. The farmland has moderate capacity to absorb change and the sensitivity of this character area is considered to be **medium.**

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
	construction/decommissioning phases of the distant Morecambe Offshore Windfarm: Generation Assets is considered to be **high**.	**LCA 17A: Enclosed Coastal Marsh – Clifton and Hutton Marsh and LCA 15B: Coastal Plain – Longton and Bretherton** The landscape has a medium value, integrity and vulnerability and high recoverability. The coastal farmland of these character areas have a moderate capacity to absorb change and the sensitivity is considered to be **medium**. **LCA 15D: Coastal Plain – The Fylde**: The landscape has a medium value, integrity and vulnerability and high recoverability. The farmland has moderate capacity to absorb the proposed change and the sensitivity of this character area is considered to be **medium.**
Significance of effect in accordance with **Table 10.21**)	**LCA 19a: Coastal Dunes – Fylde Coast Dunes**: Overall, the magnitude of the cumulative impact is **low** and the sensitivity of the receptor is **high**. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. The Transmission Assets will be relatively prominent compared to the distant construction activities for the Morecambe Offshore Windfarm: Generation Assets and will make a moderate contribution to the temporary cumulative effect on landscape character. There would be no cumulative effects on landscape character as a result of the operational infrastructure at the landfall location during this phase due to the below ground nature of the Transmission Assets	**LCA 16B: Mosslands – South Fylde Mosses**: Overall, the magnitude of the cumulative impact is medium and the sensitivity of the receptor is medium. The cumulative effect will, therefore, be of **moderate adverse** significance, which is not significant in EIA terms. The Transmission Assets will make a medium contribution to the temporary cumulative effect on landscape character. **LCA 17A: Enclosed Coastal Marsh – Clifton and Hutton Marsh and LCA 15B: Coastal Plain – Longton and Bretherton**: Overall, the magnitude of the cumulative impact is medium and the sensitivity of the receptor is medium. The cumulative effect will, therefore, be of **moderate adverse** significance, which is not significant in EIA terms. The Transmission Assets will make a medium contribution to the temporary cumulative effect on landscape character. **LCA 15D: Coastal Plain – The Fylde***:* Overall, the magnitude of the cumulative impact is medium and the sensitivity of the receptor is medium. The cumulative effect will, therefore, be of **moderate adverse** significance, which is not significant in EIA terms. The Transmission Assets will make a high contribution to the temporary cumulative effect on landscape character.
Further mitigation and residual significance	As per **section 10.9** above.	As per **section 10.9** above.

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Operation and maintenance phase		
Magnitude of impact	Not applicable as cumulative effect only relates to the construction phase of the Transmission Assets.	**LCA 16B: Mosslands – South Fylde Mosses:** The three CEA developments will change the character of this LCA on the fringes of the adjacent settlements, changing the rural characteristics to urban. This phase of the Transmission Assets is likely to comprise no more than manhole covers and some minor vegetation removal. The cumulative effect is predicted to be of regional spatial extent and long term duration. The magnitude is therefore **medium.** **LCA 17A: Enclosed Coastal Marsh – Clifton and Hutton Marsh and LCA 15B: Coastal Plain – Longton and Bretherton:** the four CEA developments will change the character of these LCAs within largely rural areas on the fringes of Preston. This phase of the Transmission Assets are likely to comprise no more than manhole covers and some minor vegetation removal. The cumulative effect is predicted to be of local spatial extent and long term duration. The magnitude is therefore **medium.** **LCA 15D: Coastal Plain – The Fylde:** Two of the three CEA developments will change small pockets of rural/urban fringe character within this LCA whilst the solar farm will change a larger area of agricultural character west of Newton-with-Scales. This phase of the buried cable elements of the Transmission Assets are likely to comprise no more than manhole covers and some minor vegetation removal. The operational substations will form relatively large scale elements of built form and external electrical infrastructure within landscaped locations within farmland on urban fringes. The cumulative effect is predicted to be of local spatial extent and long term duration. The magnitude is therefore **medium**
Sensitivity of receptor		**All character areas**: as per the construction phase, the sensitivity of the landscape is **medium.**
Significance of effect		**LCA 16B: Mosslands – South Fylde Mosses:** Overall, the magnitude of the cumulative impact is medium and the sensitivity of the receptor is medium. The cumulative effect

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		will, therefore, be of **moderate adverse** significance, which is not significant. The Transmission Assets will make no more than a negligible contribution to the cumulative effect on landscape character. **LCA 17A: Enclosed Coastal Marsh – Clifton and Hutton Marsh and LCA 15B: Coastal Plain – Longton and Bretherton:** Overall, the magnitude of the cumulative impact is medium and the sensitivity of the receptor is medium. The cumulative effect will, therefore, be of **moderate adverse** significance, which is not significant. The Transmission Assets will make no more than a negligible contribution to the cumulative effect on landscape character. **LCA 15D: Coastal Plain – The Fylde***:* Overall, the magnitude of the cumulative impact is medium and the sensitivity of the receptor is medium. The cumulative effect will, therefore, be of **moderate adverse** significance, which is not significant in EIA terms. The Transmission Assets will make a medium contribution to the cumulative effect on landscape character.
Further mitigation and residual significance		As per **section 10.9** above.

10.14.3 Offshore cumulative visual impact assessment

10.14.3.1 A representative viewpoint is located on the coast at the Transmission Assets landfall location approximately 30 km from the Morecambe Offshore Windfarm array area. A set of illustrative 360 degree wirelines have been generated to include the existing and proposed cumulative offshore wind farms. The wirelines provide an indication of the location of offshore infrastructure and have informed the assessment of the potential cumulative changes in the existing view, if seen in combination with temporary landfall construction activities on the beach.

Table 10.25: Offshore cumulative visual impact assessment

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Construction and decommissioning phases		
Magnitude of impact (in accordance with **Table 10.20**) Refer to Viewpoint 19 (see Volume 3, Figures)	The cumulative effects assessment for Scenario 1 considers the following: • **Representative viewpoint VP19: Landfall, Blackpool Beach South.** The direct impacts on visual receptors during the construction and decommissioning phases will be discordant in nature within an open coastal landscape. Receptors will be barely aware of existing distant wind farms at Walney, Ormonde, Barrow and West of Duddon Sands off the south coast of Cumbria to the north west and at Burbo Bank, North Hoyle, Gwynt y Môr and Rhyl Flats off the North Wales coast to the south west. The existing turbines are potentially visible on the distant horizon and occupy approximately 60 degrees of the view, although have very limited ability to influence the character of the seascape view • The construction activities for the turbines of the Morecambe Offshore Windfarm: Generation Assets will be visible in the mid distance to the west, occupying less than a 10 degree angle of view. The activities will form a recognisable addition to a part of the view that currently contains no visible wind farms. Temporary lighting associated with the construction activities will be distantly visible in a largely dark seascape context. The character of the view will change from open, undeveloped seascape to seascape with distant wind farm construction activities. • The landfall construction activities on the beach will be visible in the foreground of views out to sea, in the distant context of Morecambe Offshore Windfarm: Generation Assets out to sea and existing barely perceptible wind farms south of Cumbria and north of Wales. • The cumulative effect is predicted to be of regional spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **medium to low**.	No possibility of a cumulative offshore visual impact with Scenario 4a.
Sensitivity of receptor (in accordance with **Table 10.19**)	**Representative viewpoint VP19: Landfall, Blackpool Beach South**: This is a distant, open view from the wide sandy beach south of Blackpool, looking west out to sea, experienced by people walking or using the beach for recreation within an attractive and relatively wild coastal location.	

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
	The visual receptors using the beach are deemed to be of high vulnerability, recoverability and value. The sensitivity of the receptor is therefore, considered to be **high**.	
Significance of effect in accordance with **Table 10.21**)	**Representative viewpoint VP19: Landfall, Blackpool Beach South**: The magnitude of the impact is medium to low, depending on the proximity of the landfall activities and the sensitivity of the receptor is high. The temporary effect will, therefore, be of **major** to **minor adverse** significance during the day and at night, which is significant. The Transmission Assets will make a major contribution to this cumulative effect.	
Further mitigation and residual significance	As per **section 10.9** above.	
Operation and maintenance phase – no possibility of a cumulative effect		

10.14.4 Onshore cumulative visual impact assessment: onshore substations

10.14.4.1 Eighteen representative viewpoint locations have been chosen to assess effects on visual receptors within the vicinity of the onshore substations (see **section 10.12**). Only the Newton Grange Bluefield solar farm west of Newton-with -Scales has the potential to be visible in combination with either the Morgan or Morecambe onshore substations in some of these views.

Table 10.26: Onshore cumulative visual impact assessment: onshore substations

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Magnitude of impact (in accordance with **Table 10.20**) See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES	No possibility of a cumulative onshore visual impact with Scenario 1.	The cumulative effects assessment for Scenario 4a considers the following: **Representative viewpoint VP4: Parrox Lane east of Morecambe onshore substation site.** The Newton Grange Bluefield solar farm would be partially visible in two fields on the left side of this view. Security fences and the tops of panels within arrays would be visible above intervening hedgerows and trees in the mid-distance. During the construction phase of the Transmission Assets the Morgan onshore substation construction site and activities and construction compound would be visible and recognisable in the mid-distance. The Morecambe onshore substation construction site and compound would be partially screened by intervening hedgerows and trees and the Newton Grange Bluefield solar farm to the south west. The CEA development would create a slightly more developed context for the construction activities for the Transmission Assets.

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low to negligible**.
Sensitivity of receptor accordance with **Table 10.19**)		This is a mid-distance, partially open view through a field gate looking south west to the Morgan onshore substation site experienced by walkers and road users. Walkers have a high susceptibility to change in a generally rural context. The walkers using this lane are deemed to be of high vulnerability, recoverability and value. The sensitivity of the receptor is therefore, considered to be **high.**
Significance of effect in accordance with **Table 10.21**		Overall, the sensitivity of the receptor is **high** and the magnitude of the impact is **low** to **negligible**, depending on the angle of view from this location. The temporary effect will, therefore, be of **minor adverse** significance during the day and at night, which is not significant in EIA terms. The Transmission Assets will make a moderate contribution to this cumulative effect.
Further mitigation and residual significance		As per **section 10.9** above.
Operation and maintenance phase		
Magnitude of impact (in accordance with **Table 10.20**) See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES	No possibility of a cumulative onshore visual impact with Scenario 1.	**Representative viewpoint VP4: Parrox Lane east of Morecambe onshore substation site**: There would be direct cumulative impacts on visual receptors as a result of the operational substations within a context of agricultural, urban fringe landscape which would also contain the Newton Grange Bluefield solar farm. The buildings, external electrical infrastructure and security fences at the Morgan onshore substation would be visible in the mid-distance views. The built form and infrastructure at the Morecambe onshore substation would be barely perceptible, filtered and screened by intervening vegetation and the infrastructure at the solar farm to the south west. The CEA development would create a slightly more developed context for the construction activities for the Transmission Assets. The cumulative effect is predicted to be of local spatial extent, long term duration, continuous and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low to negligible.**
Sensitivity of receptor accordance with **Table 10.19**)		As per the construction phase, the sensitivity of the receptor is **high.**
Significance of effect in accordance with **Table 10.21**		The sensitivity of the receptor is high and the magnitude of the impact is low to negligible, depending on the angle of view. The cumulative visual effect in winter year 1 before landscape mitigation planting has matured will, therefore, be of **moderate** to **minor adverse** significance

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		during the day and at night, which is not significant in EIA terms. The Transmission Assets will make a moderate contribution to this cumulative effect.
Further mitigation and residual significance		By the summer of year 15 the operational Morgan onshore substation would be visible within the context of mature landscape planting proposals. Mature planting proposals at the Morecambe onshore substation site would provide further screening of the development within existing vegetation. Any landscape proposals associated with the Newton Grange Bluefield solar farm would also have the potential to mature and further screen and visually integrate development in the agricultural landscape. The magnitude of the impact will be negligible and the sensitivity of the receptor is high. The effect will reduce to **minor adverse** significance during the day and at night, which is not significant. The Transmission Assets will make a moderate contribution to this cumulative effect.

10.14.4.2 Based on the data gathered during the field surveys it has been concluded that potential sequential views where a number of developments can be viewed sequentially or repeatedly from a range of locations when travelling along a route within the study area, are extremely limited. The existing solar farm at Kirkham Road, 1.2 km to the west of the Morgan onshore substation site and Newton Grange Bluefield solar farm (22/0204) immediately to the east of the Morgan onshore substation site are low-lying developments and would be difficult to distinguish while traversing local roads, which are lined by high hedgerows.

10.14.5 Onshore cumulative visual impact assessment: onshore export cable corridor

10.14.5.1 The onshore export cable corridor of the Transmission Assets, which is relevant to the assessment of cumulative visual effects extends east from the western edge of Blackpool Airport to the onshore substations. The CEA visual impact study area focuses on a 1 km buffer around the 100 m wide corridor route including the potential routes for the corridors:

- onshore export corridor near Blackpool Airport:
  - cable installation in land operated by the airport; or
  - cable installation within public highways.

10.14.5.2 The expanse of agricultural land is largely flat within the South Fylde Mosses, becoming gently undulating farmland within the Fylde Coastal Plain.

Table 10.27: Onshore cumulative visual impact assessment: onshore export cable corridor

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Magnitude of impact (in accordance with **Table 10.20**) See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES	No possibility of a cumulative onshore visual impact with Scenario 1.	The cumulative effects assessment for Scenario 4a considers the following: **Assessment of effects experienced by people using local footpaths and bridleways within 1 km of the onshore export cable corridor.** Eleven PRoW have been identified which cross the landscape within the cable corridor and will place visual receptors in closest proximity to the temporary construction activities. Six of these PRoW also pass through or adjacent to CEA developments including a large residential scheme on the north edge of Lytham St Annes, and energy, commercial and leisure developments. The CEA developments will provide a more developed context for the Transmission assets construction phase. Walkers and equestrians using these PRoW are able to gain open, often panoramic views across farmland allowing combined cumulative views of more than one CEA development together with the Transmission Assets in the same angle of view or different angle of view if the receptor turns. If the construction phases of the Transmission Assets and the CEA developments coincide receptors will be able to gain a sequence of views of the cable corridor and construction activities together with construction sites and activities as discordant elements on the urban fringes of settlements which are linked by the PRoW. Some views may be temporarily prevented where the routes cross the cable corridor or CEA development sites and access will be prevented due to PRoW temporary diversions, changing the visual experience for receptors**.** The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **high to low**. **Assessment of impacts on local residents** None of the occupiers of residential properties identified in the assessment of visual effects in **section 10.12** have the potential to experience significant cumulative visual effects due to the lack of CEA developments in sufficiently close proximity to the properties, within mainly open farmland locations, adjacent to the cable corridor. However, several large CEA developments are located on the settlement edges of Blackpool and Lytham St Annes, adjacent to numerous residential properties. Occupiers of these properties are likely to experience adverse effects on views as a result of construction and operational effects of a large residential scheme on the north edge of Lytham St Annes and commercial and leisure developments in close proximity, replacing existing mainly agricultural land. The Newton Grange

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		Bluefield solar farm would be partially visible in views from residential properties on the western edge of Newton-with-Scales. Occupiers of these properties also have some potential to gain views of the construction phase of the Transmission Assets crossing a large part of the landscape. The construction phase of the CEA developments will be discordant in nature and in close proximity in an urban fringe context forming a prominent and at times dominant addition to views. The Transmission Assets construction site corridor and activities undertaken within it will form a minor part of the view or will be barely perceptible or not visible at all due to the intervening CEA development construction activities. The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **high**.
Sensitivity of receptor accordance with **Table 10.19**)		**Assessment of effects experienced by people using local footpaths and bridleways within 1 km of the onshore export cable corridor.** People using local footpaths and bridleways in predominantly rural locations for recreational purposes are of high susceptibility to the impacts of the proposed development. The receptors are deemed to be of high vulnerability, recoverability and value. The sensitivity of the receptor is therefore, considered to be **high.** **Assessment of impacts on local residents.** Occupiers of residential properties are of high susceptibility to cumulative visual impacts. The residents are deemed to be of high vulnerability, recoverability and value. The sensitivity of the receptor is therefore, considered to be **high.**
Significance of effect in accordance with **Table 10.21**		**Assessment of effects experienced by people using local footpaths and bridleways within 1 km of the onshore export cable corridor.** Overall, the magnitude of the cumulative visual impact on people using local bridleways and footpaths during construction is considered to be high to low and the sensitivity of the receptor is high. The effect will, therefore, be of **major** to **minor adverse** significance during the day and at night, which is significant in EIA terms. **Assessment of impacts on local residents.** Overall, the magnitude of the cumulative visual impact on people living within some houses on settlement edges during construction is considered to be up to high and the sensitivity of the receptor is high. The effect will therefore be of **major adverse** significance during the day and at night, which is significant. The Transmission Assets will make a negligible contribution to this cumulative effect.

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Further mitigation and residual significance		As per **section 10.9** above.
Operation and maintenance phase – no possibility of a cumulative effect		

10.14.6 Onshore cumulative visual impact assessment: onshore 400 kV grid connection cable corridor

10.14.6.1 The grid connection cable corridor elements of the Transmission Assets occupy a 15 km long tract of landscape south east of the substations at the existing Penwortham Substation on the edge of Preston. The visual impact study area covers a 1 km buffer around the grid connection cable corridor.

Table 10.28: Onshore cumulative visual impact assessment: onshore 400 kV grid connection cable corridor

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
Magnitude of impact (in accordance with **Table 10.20**) See panoramic photography within Appendix A of Volume 3, Annex 10.3: Visual baseline technical report of the ES	No possibility of a cumulative onshore visual impact with Scenario 1.	The cumulative effects assessment for Scenario 4a considers the following: **Assessment of impacts experienced by people using local footpaths within 1 km of the 400 kV grid connection cable corridor.** Eight PRoW have been identified which have the potential to cross the cable corridor and will place visual receptors in closest proximity to the temporary construction activities. Six of these PRoW also pass nearby CEA developments including a large leisure scheme north of the River Ribble and several energy projects adjacent to Penwortham substation. Walkers using these ProW are able to gain open, often panoramic views across marshland and farmland allowing combined cumulative views of more than one CEA development together with the Transmission Assets in the same angle of view or different angle of view if the receptor turns. If the construction phases of the Transmission Assets and the CEA developments coincide receptors will be able to gain a sequence of views of the cable corridor and construction activities together with construction sites and activities as discordant elements within an urban fringe/river corridor context. The construction phase of the cable will be prolonged and discordant in nature in a rural/urban fringe context. The construction site corridor and activities undertaken within it, together with construction sites and activities for CEA developments will be prominent in many close proximity views, reducing to visible or recognisable as a minor element in mid-distance or partially obscured views. The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **high to low**. **Assessment of impacts on local residents** Occupiers of residential properties within the 400 kV grid connection cable corridor assessed previously within section 10.11 that also lie adjacent to or in the context of the CEA developments of the large leisure scheme north of the River

	Scenario 1: Morecambe Generation Assets	Scenario 4a: Tier 1 projects
		Ribble and three energy projects adjacent to Penwortham substation have the potential to experience cumulative visual effects. Receptors with the potential to be affected include occupiers of: • Savick Brook Farm; • Old Hall Farm; • Brook Farm; and • Approximately 10 properties on Townley Lane. The construction phase of the cable will be prolonged and discordant in nature in a rural/urban fringe context. The construction site corridor and activities undertaken within it, together with construction sites and activities for CEA developments will be prominent in many close proximity views, reducing to visible or recognisable as a minor element in mid-distance or partially obscured views. The cumulative effect is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **high** to **low.**
Sensitivity of receptor accordance with **Table 10.19**)		**Assessment of impacts experienced by people using local footpaths within 1 km of the 400 kV grid connection cable corridor.** People using local footpaths are of high susceptibility to the impacts of the proposed development. The receptors are deemed to be of high vulnerability, recoverability and value. The sensitivity of the receptor is therefore, considered to be **high**. **Assessment of impacts on local residents.** Residents are of high susceptibility to the proposed development. The residents are deemed to be of high vulnerability, recoverability and value. The sensitivity of the receptor is therefore, considered to be **high**.
Significance of effect in accordance with **Table 10.21**		**Assessment of impacts experienced by people using local footpaths within 1 km of the 400 kV grid connection cable corridor.** Overall, the magnitude of the cumulative visual impact on people using local bridleways and footpaths during construction is considered to be high to low and the sensitivity of the receptor is high. The effect will, therefore, be of **major to minor adverse** significance during the day and at night, which is significant in EIA terms. **Assessment of impacts on local residents.** Overall, the magnitude of the cumulative visual impact on people living in nearby residential properties during construction is considered to be high to low and the sensitivity of the receptor is high. The effect will, therefore, be of **major** to **minor adverse** significance during the day and at night, which is significant in EIA terms.
Further mitigation and residual significance		As per **section 10.9** above.
Operation and Maintenance phase – no possibility of a cumulative effect		

10.14.7 Future monitoring

10.14.7.1 No monitoring to test the predictions made within the impact assessment is considered necessary.

10.15 Transboundary effects

10.15.1.1 Transboundary effects arise when impacts from a development within one European Economic Area (EEA) state's territory affects the environment of another EEA state(s).

10.15.1.2 There is no potential for transboundary impacts upon LVIA receptors due to construction, operation and maintenance and decommissioning of the Transmission Assets. The potential impacts are localised and will not affect other EEA states.

10.15.1.3 Therefore, transboundary effects for LVIA receptors do not need to be considered further.

10.16 Inter-related effects

10.16.1.1 Inter-relationships are the impacts and associated effects of different aspects of the Transmission Assets on the same receptor. These are as follows.

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Transmission Assets (construction, operation and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor group than if just one phase were assessed in isolation.
- Receptor led effects: Assessment of the scope for all relevant effects across multiple topics to interact, spatially and temporally, to create inter-related effects on a receptor.

10.16.1.2 The assessment presented herein draws upon information presented within other topic assessments within Volume 3 of the ES. Equally, the LVIA also informs other impact assessments. This interaction between the impacts assessed within different topic-specific chapters on a receptor is defined as an 'inter-relationship'.

10.16.1.3 There is an interrelationship with the following topics:

- historic environment;
- ecology; and
- recreation.

10.16.1.4 Whilst the assessment of effects on character includes land that contains heritage assets, effects on heritage assets and their settings are considered within Volume 3, Chapter 5: Historic environment of the ES. The landfall and onshore cable laying activities will be located within LCA 19a Fylde Coast Dunes and the onshore substations and cable laying activities will be located within LCA 15d: Coastal Plain – Fylde, which are associated with listed buildings or conservation areas, resulting in temporary or long term

significant adverse effects on landscape character. See sections 10.12.2 and 10.12.3.

10.16.1.5 Whilst the assessment of effects on character includes land that contains ecological assets effects on flora and fauna within habitats is considered within Volume 3, Chapter 3: Onshore ecology and nature conservation of the ES.

10.16.1.6 The construction and operation of the onshore substations will change the existing farmland of LCA 15d: The Fylde Coastal Plain resulting in some temporary and some long term loss of features such as hedgerows, ditches, trees and ponds which have ecological value. The impacts will result in some localised major adverse effects on landscape character, which is significant.

10.16.1.7 Whilst the assessment of effects on visual receptors includes people using recreational assets, effects on public open space and PRoW are considered within Volume 3, Chapter 6: Land use and recreation of the ES. Equestrians using bridleways and walkers using PRoW in close proximity to onshore substations will gain open views of the construction activities and operational substations, resulting in some major adverse temporary and long term effects, which is significant. People using the beach and PRoW and occupiers of residential properties coinciding with or in close proximity to onshore cable/landfall will gain open views of the construction activities resulting in some temporary major and moderate adverse effects, which is significant.

10.16.1.8 Further information on inter-related effects is provided in Volume 4, Chapter 3: Inter-relationships of the ES.

10.17 Summary of impacts, mitigation measures and monitoring

10.17.1.1 Information on LVIA within the study area was collected through e.g., a desktop review of published landscape and seascape character assessments, site surveys and photography during summer and winter.

10.17.1.2 **Table 10.29** presents a summary of impacts, measures adopted as part of the Transmission Assets and residual effects in respect to LVIA. The impacts assessed include: impacts on landscape character and visual amenity and visual receptors during the daytime and at night, during the construction/decommissioning phase and the operation/maintenance phase. The landscape proposals around the substations are included as further secondary mitigation, which is reflected in the assessment of residual effects. Overall, it is concluded that there will be the following significant effects arising from the Transmission Assets during either the construction, operation and maintenance or decommissioning phases.

- Effects on landscape character as a result of elements of the Transmission Assets/landfall.
  - LCA 19a: Coastal Dunes – Fylde Coastal Dunes – temporary construction.
- Effects on landscape character as a result of substations.

  - LCA 15d: Coastal Plain – Fylde – temporary construction and short term operation year 1 before landscape mitigation planting has established.

- Effects on visual amenity as a result of substations.
  - Viewpoint 1 bridleway BW0505016 south of Morgan onshore substation site – temporary construction and short term operation year 1 before landscape mitigation planting has established.
  - Viewpoint 3 bridleway BW0505016 west of Morgan onshore substation – temporary construction and short term operation year 1 before landscape mitigation planting has established.
  - Viewpoint 6 footpath FP050503 south of Morecambe onshore substation site – temporary construction and short term operation year 1 before landscape mitigation planting has established.
  - Sequential effects on people using PRoW BW0505016, FP050503 and FP050504 – temporary construction, operation year 1 and long term year 15 when landscape mitigation planting has matured.
- Effects on visual amenity as a result of temporary and reversible onshore cable/landfall activities:
  - People using beach – temporary construction.
  - People using Blackpool Road Recreation Ground – temporary construction.
  - People using PRoW BW0502012, BW0502013, BW0502016, BW0503012, FP050302, FP05010011, FP050304, FP050305, FP050502, BW0509012, FP00905, FP070907 and FP0709010 – temporary construction.
  - People using National Cycle Route 62 at Hillock Lane – temporary construction.
  - Occupiers of residential properties at Bridge Farm, Bridge Hall Farm, Moss Side Farm, The Old Dairy, Hillock Cross Farm, Savick Brook Farm and Marsh Farm – temporary construction.

10.17.1.3 There will be no significant long term operational effects on landscape character as a result of the Transmission Assets. The only long term significant effects on visual amenity would be sequential effects on equestrians and walkers using the linked PRoW immediately adjacent and near to the Morgan and Morecambe onshore substation sites. Once the landscape proposals, as set out in the Outline Landscape Management Plan (document reference J2) and Outline Design Principles document (document reference J3) have become established effects would be very limited.

10.17.1.4 **Table 10.29** presents a summary of the potential cumulative impacts, measures adopted as part of the Transmission Assets and residual effects in respect to LVIA. The cumulative impacts assessed include: impacts on landscape character and visual amenity and visual receptors during the daytime and at night, during the construction/decommissioning phase and the operation/maintenance phase. Overall, it is concluded that there will be

the following significant cumulative effects when the Transmission Assets are considered alongside other projects/plans, where the other projects would make the greatest contribution to the cumulative effect.

- Cumulative effects on visual amenity as a result of temporary and reversible onshore cable route activities:
  - people using PRoW – temporary construction (Transmission Assets only make a medium to negligible contribution to cumulative effect); and
  - occupiers of residential properties – temporary construction (Transmission Assets only make a medium to negligible contribution to cumulative effect).

Table 10.29: Summary of environmental effects, mitigation and monitoring

Description of impact	Phase[a] C	O	D	Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
Landscape character – landfall and onshore export cable corridor										
19a: Coastal Dunes – Fylde Coast Dunes	✓	×	×	CoT08, CoT35	C: Medium	C: High	C: Moderate to major adverse	CoT15	C: Moderate to major adverse	Following implementation of landscape proposals
Industrial Age Urban	✓	×	×	CoT35	C: Low	C: Low	C: Negligible to Minor adverse	None	C: Negligible to Minor adverse	NA
Suburban Urban	✓	×	×	CoT35	C: Medium (locally) Low (generally)	C: Medium	C: Moderate adverse (locally) Minor adverse (generally)	None	C: Moderate adverse (direct) Minor adverse (indirect)	NA
16b Mosslands – South Fylde Mosses	✓	×	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Medium (direct), negligible (indirect)	C: Medium	C: Moderate adverse (direct), negligible adverse (indirect)	CoT15, CoT27, CoT28, CoT39	C: Moderate adverse (direct), negligible adverse (indirect)	Following implementation of landscape proposals
15d Coastal Plain – The Fylde	✓	×	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Medium (direct), negligible (indirect)	C: Medium	C: Moderate adverse (direct), negligible adverse (indirect)	CoT15, CoT27, CoT28, CoT39	C: Moderate adverse (direct), negligible adverse (indirect)	Following implementation of landscape proposals
Landscape character – substations										

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
15d Coastal Plain: Fylde	✓	✓	✓	CoT13, CoT32, CoT08	C: High (direct), medium (indirect) O: High (direct), medium (indirect) D: High (direct), medium (indirect)	C: Medium O: Medium D: Medium	C: Major adverse (direct), moderate adverse (indirect) O (year 1): Major adverse (direct), moderate adverse (indirect) D: Major adverse (direct), moderate adverse (indirect)	C: None O: CoT15, CoT28, CoT39 D: None	C: Major adverse (direct), moderate adverse (indirect) O (year 15): Moderate adverse (direct), minor adverse (indirect). D: Major adverse (direct), moderate adverse (indirect)	Following implementation of landscape proposals
15b Coastal Plain: Longton to Bretherton	✓	✓	✓	N/A	C: Negligible O: Negligible D: Negligible	C: Medium O: Medium D: Medium	C: Negligible adverse O: (year 1) Negligible adverse D: Negligible adverse	C: None O: CoT15 D: None	C: Negligible adverse O: (year 15) Negligible adverse D: Negligible adverse	Following implementation of landscape proposals
17a Enclosed Coastal Marsh: Clifton and Hutton	✓	✓	✓	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Negligible (indirect) O: Negligible D:Negligible	C: Medium O: Medium D: Medium	C: Negligible averse (indirect) O: (year 1) Minor adverse (direct) negligible adverse (indirect)	CoT15, CoT27, CoT28, CoT39	C: Negligible averse (indirect) O: Minor adverse (direct) negligible adverse (indirect)	Following implementation of landscape proposals

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
							D: Moderate adverse (direct), negligible averse (indirect)		D: Moderate adverse (direct), negligible averse (indirect)	
18a Open Coastal Marsh: Ribble Marsh	✓	✓	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Negligible (indirect) O: Negligible (indirect)	C: Medium O: Medium	C: Negligible averse (indirect) O: Negligible averse (winter year 1)	CoT15, CoT27, CoT28, CoT39	C: Negligible averse (indirect) O: Negligible averse	Following implementation of landscape proposals
Landscape character – 400 kV grid connection cable corridor										
15d Coastal Plain: Fylde	✓	×	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Medium (direct), negligible (indirect)	C: Medium	C: Moderate adverse (direct), negligible averse (indirect)	CoT15, CoT27, CoT28, CoT39	C: Moderate adverse (direct), negligible averse (indirect)	Following implementation of landscape proposals
17a Enclosed Coastal Marsh: Clifton and Hutton	✓	×	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Medium (direct), negligible (indirect)	C: Medium	C: Moderate adverse (direct), negligible averse (indirect)	CoT15, CoT27, CoT28, CoT39	C: Moderate adverse (direct), negligible averse (indirect)	Following implementation of landscape proposals
18a Open Coastal Marsh: Ribble Marsh	✓	×	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Negligible (indirect)	C: Medium	C: Negligible adverse (indirect))	CoT15, CoT27, CoT28, CoT39	C: Negligible adverse (indirect)	Following implementation of landscape proposals
15b Coastal Plain: Longton to Bretherton	✓	×	×	CoT12, CoT13, CoT14, CoT32, CoT08, CoT35	C: Low (direct), negligible (indirect)	C: Medium	C: Minor adverse (direct), negligible averse (indirect)	CoT15, CoT27, CoT28, CoT39	C: Minor adverse (direct), negligible averse (indirect)	Following implementation of landscape proposals

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Visual impacts: Substations										
Representative VP1: Bridleway south of Morgan onshore substation site	✓	✓	✓	CoT08	C: Medium to high O: Medium to high D: Medium to low	C: High O: High D: High	C: Major adverse O: Major adverse (year 1) D: Major adverse	C: None O: CoT15 D: None	C: Major adverse O: Moderate adverse (year 15) D: Major adverse	Following implementation of landscape proposals
Representative VP2: Strike Lane, west of Morecambe onshore substation site	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: High O: High D: High	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 15) D: Minor adverse	Following implementation of landscape proposals
Representative VP3: View from bridleway BW0505016	✓	✓	✓	CoT08	C: Medium to high O: Medium to high D: Medium to high	C: High O: High D: High	C: Major adverse O: Major adverse (year 1) D: Major adverse	C: None O: CoT15 D: None	C: Major adverse O: Moderate adverse (year 15) D: Major adverse	Following implementation of landscape proposals
Representative VP4: Parrox Lane east of Morecambe onshore substation north site	✓	✓	✓	CoT08	C: Low to medium O: Low to medium D: Low to medium	C: High O: High D: High	C: Minor to moderate adverse O: Minor to moderate adverse (year 1)	C: None O: CoT15 D: None	C: Minor to moderate adverse O: Minor adverse (year 15)	Following implementation of landscape proposals

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
							D: Minor to moderate adverse		D: Minor to moderate adverse	
Representative VP5: View north west from footpath FP0509005	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: High O: High D: High	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 15) D: Minor adverse	Following implementation of landscape proposals
Representative VP6: View from footpath south of Morecambe onshore substation site	✓	✓	✓	CoT08	C: High O: High D: High	C: High O: High D: High	C: Major adverse C: Major adverse (year 1) C: Major adverse	C: None O: CoT15 D: None	C: Major adverse O: Moderate adverse (year 15) D: Major adverse	Following implementation of landscape proposals
Representative VP7: Kirkham Bypass north of Freckleton Road	✓	✓	✓	CoT08	C: Low O: Low D: Low	C: Medium O: Medium D: Medium	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Negligible adverse (year 15) D: Minor adverse	Following implementation of landscape proposals
Representative VP8: Kirkham Road, National Cycle Network route 62	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: Medium O: Medium D: Medium	C: Negligible adverse O: Negligible adverse (year 1),	C: None O: CoT15 D: None	C: Negligible adverse	Following implementation of landscape proposals

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
							D: Negligible adverse		O: Negligible adverse (year 15) D: Negligible adverse	
Representative VP9: Brown's Lane footpaths FP0510007 and FP0510008	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: High O: High D: High	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	Following implementation of landscape proposals
Representative VP10: Footpath FP0513016 and National Cycle Network route 62 (Treales Road)	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: Up to high O: Up to high D: Up to high	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 15) D: Minor adverse	Following implementation of landscape proposals
Representative VP11: Ribble Way	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: High O: High D: High	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 15) D: Minor adverse	Following implementation of landscape proposals
Representative VP12: Farm access	✓	✓	✓	CoT08	C: Medium O: Medium D: Medium	C: High O: High D: High	C: Moderate adverse	C: None O: CoT15 D: None	C: Moderate adverse	Following implementation of

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
track/bridleway BW0505016							O: Moderate adverse (year 1) D: Moderate adverse		O: Minor adverse (year 15) D: Moderate adverse	landscape proposals.
Representative VP13: Blackpool Road B5192	✓	✓	✓	CoT08	C: Medium O: Medium D: Medium	C: Medium O: Medium D: Medium	C: Moderate adverse O: Moderate adverse (year 1) D: Moderate adverse	C: None O: CoT15 D: None	C: Moderate adverse O: Minor adverse (year 15) D: Moderate adverse	Following implementation of landscape proposals
Representative VP14: Freckleton, Hillock Lane	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: Low O: Low D: Low	C: Negligible adverse O: Negligible adverse (year 1) D: Negligible adverse	C: None O: CoT15 D: None	C: Negligible adverse O: Negligible adverse (year 15) D: Negligible adverse	Following implementation of landscape proposals
Representative VP15: Wrea Green	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: High O: High D: High	C: Minor adverse O: Minor adverse (year 1) D: Moderate adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 15) D: Minor adverse	Following implementation of landscape proposals

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Representative VP16: Ribble Way embankment	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: High O: High D: High	C: Minor adverse O: Minor adverse (year 1) D: Minor adverse	C: None O: CoT15 D: None	C: Minor adverse O: Minor adverse (year 15) D: Minor adverse	Following implementation of landscape proposals
Representative VP17: Blackpool Road A583/ Preston New Road A584	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: Low O: Low D: Low	C: Negligible adverse O: Negligible adverse (year 1) D: Negligible adverse	C: None O: CoT15 D: None	C: Negligible adverse O: Negligible adverse (year 15) D: Negligible adverse	Following implementation of landscape proposals
Representative VP18: Edith Rigby Way A582 Overbridge	✓	✓	✓	CoT08	C: Negligible O: Negligible D: Negligible	C: Up to medium O: Up to medium D: Up to edium	C: Negligible adverse O: Negligible adverse (year 1) D: Negligible adverse	C: None O: CoT15 D: None	C: Negligible adverse O: Negligible adverse (year 15) D: Negligible adverse	Following implementation of landscape proposals
Sequential effects on people using PRoW BW0505016, FP050503 and FP050504	✓	✓	✓	CoT08	C: Medium to high O: Medium to high D: High	C: High O: High D: High	C: Major adverse O: Major adverse (year 1) C: Major adverse	C: None O: CoT15 D: None	C: Major adverse O: Major adverse (year 15) D: Major adverse	Following implementation of landscape proposals

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Occupiers of residential properties on settlement edges at Kirkham and Newton with Scales	✓	✓	✓	CoT08	C: Negligible to medium O: Negligible to medium D: Negligible to medium	C: Medium to High O: Medium to High D: Medium to High	C: Moderate to Negligible adverse O: Moderate to Negligible adverse (year 1) D: Moderate to Negligible adverse	C: None O: CoT15 D: None	C: Moderate to Negligible adverse O: Minor to Negligible adverse (year 15) D: Moderate to Negligible adverse	Following implementation of landscape proposals
Occupiers of residential properties at Greenbank Farm and Freshfield Farm	✓	✓	✓	CoT08	C: Low to Negligible O: Low to negligible D: Low to negligible	C: Medium to high O: Medium to high D: Medium to high	C: Moderate to negligible adverse O: Moderate to negligible adverse (year 1) D: Moderate to negligible adverse	C: None O: CoT15 D: None	C: Moderate to negligible adverse O: Minor to negligible adverse (year 15) D: Moderate to negligible adverse	Following implementation of landscape proposals
Visual impacts: landfall and onshore export cable corridor										
Representative VP19: Blackpool Beach south. People using the beach for leisure and recreation	✓	×	×	CoT08	C: Medium to high	C: High	C: Moderate to major adverse	C: None	C: Moderate to major adverse	

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
People using Lancashire Coastal Way and National Cycle Route 62	✓	×	×	CoT08	C: Negligible to low	C: High	C: Minor to moderate adverse	C: None	C: Minor or moderate adverse	
People using National Cycle Route 62 at Hillock Lane	✓	×	×	CoT08	C: Medium	C: High	C: Major adverse	C: None	C: Major adverse	
People using local footpaths and bridleways within 1 km of the corridor route	✓	×	×	CoT08	C: Medium to negligible	C: High	C: Major to minor adverse	C: None	C: Major to negligible adverse	
People using public open space at Blackpool Road Recreation Ground	✓	×	×	CoT08	C: Low to Medium	C: High	C: Minor to major adverse	C: None	C: Minor to major adverse	
Occupiers of residential properties	✓	×	×	CoT08	C: Medium to negligible	C: Medium to high	C: Major to negligible adverse	C: None	C: Major to negligible adverse	
Visual impacts: 400 kV grid connection cable										
People using local footpaths and bridleways within 1 km of the corridor route	✓	×	×	CoT08	C: Medium to negligible	C: High	C: Major to minor adverse	C: None	C: Major to minor adverse	
People using waterways within 1 km of the cable corridor	✓	×	×	CoT08	C: Negligible	C: High	C: Minor adverse	C: None	C: Minor adverse	

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Occupiers of residential properties	✓	×	×	CoT08	C: Medium to negligible	C: Medium to high	C: Major to negligible adverse	C: None	C: Major to negligible adverse	

[a] C=construction, O=operation and maintenance, D=decommissioning

Table 10.30: Summary of cumulative environmental effects, mitigation and monitoring

Description of effect	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Morecambe Offshore Windfarm (Generation Assets): Landscape character										
LCA19a: Coastal dunes	✓	×	✓	N/A	C: Low D: Low	C: High D: High	C: Minor adverse D: Minor adverse	None	C: Minor adverse D: Minor adverse	N/A
Tier 1 Landscape character										
LCA 16b Mosslands – South Fylde Mosses. LCA 15b Coastal Plain: Longton to Bretherton. LCA 17a Enclosed Coastal Marsh: Clifton and Hutton. LCA 15d Coastal Plain: Fylde	✓	✓	✓	N/A	C: Medium O: Medium D: Medium	C: Medium O: Medium D: Medium	C: Moderate adverse O: Moderate adverse D: Moderate adverse (The Transmission Assets will make a medium to high contribution to cumulative effects during construction and a negligible to no contribution during operation)	None	C: Moderate adverse O: Moderate adverse D: Moderate adverse	N/A

Description of effect	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Morecambe Offshore Windfarm: Generation Assets visual impacts										
VP 19 Landfall, Blackpool Beach South	✓	×	✓	N/A	C: Medium to low D: Medium to low	C: High D: High	C: Major to moderate adverse D: Major to moderate adverse (The Transmission Assets will make a negligible contribution to cumulative effects)	None	C: Moderate to minor adverse D: Major to moderate adverse (The Transmission Assets will make a negligible contribution to cumulative effects)	N/A
Tier 1 visual impacts – onshore export cable and 400 kV grid connection cable corridors										
Walkers and equestrians using PRoW	✓	×	×	CoT08	C: High to low	C: High	C: Major to minor adverse		C: Major to minor adverse	
Occupiers of residential properties	✓	✓	✓	CoT08	C: Up to high	C: High	C: Major adverse		C: Major adverse	
Tier 1 visual impacts - Substations										
VP4 Parrox Lane PRoW	✓	✓	✓	CoT08	C: Low to negligible O: Low to negligible D: Low to negligible	C: High O: High D: High	C: Minor adverse O: Moderate to Minor adverse D: Minor adverse (The Transmission Assets will make a	CoT15	C: Minor adverse O: Minor adverse D: Minor adverse	Following implementation of landscape proposals

Description of effect	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect (only major adverse effects are significant)	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
							moderate contribution to cumulative effects during construction and operation)			

10.18 References

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