

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 7, Annex 6.4: Landscape, seascape and visual impact assessment methodology

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Glossary

Term	Meaning
Access Land	Land designated as open access as defined in the Countryside and Rights of Way Act 2000 (the CRoW Act)
Characteristics	Landscape features and elements, or combinations of elements, which make a contribution to distinctive landscape character.
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.
Elements	Individual parts which make up the landscape, such as, for example, trees, hedges and buildings.
Feature	Prominent elements in the landscape, such as tree clumps, church towers or wooded skylines.
Heritage	The historic environment and especially valued assets and qualities, such as historic buildings and cultural traditions.
Key characteristics	Elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.
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 Character Type	These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation, historical land use, and settlement pattern.
Landscape effects	Effects on the landscape as a resource in its own right.
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 receptors	Defined aspects of the landscape resource that have the potential to be affected by the proposal.
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
Magnitude (of impact)	A term that combines judgements about the size and scale of the impact or change, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration.

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Term	Meaning
Photomontage	A visualisation which superimposes an image of a proposed development upon a photograph or series of photographs of the existing landscape.
Seascape	The visual and physical conjunction of land and sea which combines maritime, coast and hinterland character.
Sensitivity	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.
Significance (of effect)	A judgement of the environmental effect resulting from a combination of the sensitivity of the receptor and the magnitude of the impact of a proposed development.
Special qualities	A term usually used in relation to National Parks or Areas of Outstanding Natural Beauty. It is given to those qualities for which the area is designated.
Susceptibility	The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.
Tranquillity	A state of calm and quietude associated with peace, considered to be a significant feature in the landscape.
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.
Visual effects	Effects on specific views and on general visual amenity experienced by people.
Visual receptors	Individuals and/or defined groups of people who have the potential to be affected by a proposal.
Visualisation	A computer simulation, photomontage or other technique illustrating the predicted appearance of a proposed development.
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which, a development is theoretically visible.

Acronyms

Acronym	Description
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty (now called National Landscape)
CEA	Cumulative Effect Assessment
EIA	Environmental Impact Assessment
ES	Environmental Statement
FoV	Field of View
GLVIA3	Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and Institute for Environmental Assessment and Management, 2013)
IEMA	Institute of Environmental Management and Assessment

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Acronym	Description
LANDMAP	LANDMAP, All Wales database
LVIA	Landscape and Visual Impact Assessment
MLWS	Mean Low Water Springs
NL	National Landscape (formerly Area of Outstanding Natural Beauty)
NRW	Natural Resources Wales
OS	Ordnance Survey
SLA	Special Landscape Area
SPD	Supplementary Planning Document
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
m	Metres
km ²	Square kilometres

1 LANDSCAPE, SEASCAPE AND VISUAL IMPACT ASSESSMENT METHODOLOGY

1.1 Introduction

1.1.1.1 This technical report describes the methodology used to undertake the onshore part of the landscape and visual impact assessment (LVIA) including the collection of baseline information and the assessment of likely significant effects, provided in Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement.

1.1.1.2 A separate assessment methodology technical report accompanies Volume 2, Chapter 8: Seascape and visual resources of the Environmental Statement and is provided in Volume 6, Annex 8.4: Seascape, landscape and visual resources impact assessment methodology of the Environmental Statement.

1.2 Study area

1.2.1.1 The onshore study area for the transmission assets of the Mona Offshore Wind Project, hereafter referred to as ‘the LVIA onshore study area’ is illustrated in Figure A1 of Appendix A. The LVIA onshore study area is based on the height of the Onshore Substation, which in turn formed the Zone of Theoretical Visibility (ZTV). This was agreed with Natural Resources Wales (NRW) at a Seascape, Landscape and Visual Impact Assessment (onshore and offshore) workshop, held in September 2022 (refer to Table 6.7 of Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement).

1.2.1.2 The LVIA onshore study area comprises the area of land to be temporarily and permanently occupied during construction, operations and maintenance and decommissioning of the onshore elements of the Mona Offshore Wind Project, which includes areas of the sea, together with:

- 1 km buffer from the Mona Onshore Development Area (i.e. the area landward of Mean Low Water Springs (MLWS))
- 10 km buffer from the onshore substation.

1.2.1.3 The onshore LVIA cumulative effects assessment (CEA) study area extends to:

- 60 km from the onshore substation to capture existing and proposed offshore windfarms
- 45 km from the onshore substation to capture other existing and proposed onshore windfarms
- 10 km from the onshore substation to capture other plans/projects.

1.2.1.4 The CEA study areas identified above are illustrated in Figure A2, of Appendix A.

1.2.1.5 The buffers used to define the landscape, seascape and visual resources study areas are based on the Maximum Design Scenario (MDS) set out in Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement.

1.3 Consultation

1.3.1.1 In line with best practice guidance in *Guidelines for Landscape and Visual Impact Assessment: Third edition* (GLVIA3) (Landscape Institute and IEMA, 2013, engaging with stakeholders and the public, page 43, paragraphs 3.40-3.45), the scope and

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methodology of the LVIA has been the subject of engagement and consultations with the relevant planning authorities, statutory bodies and other parties, and the public.

1.3.1.2 Details of the consultees engaged, and consultations undertaken to date, together with a summary of the key issues raised by the parties pertinent to LVIA, are set out in the Environmental Statement as follows:

- Volume 2, Chapter 8: Seascape and visual resources, and
- Volume 3, Chapter 6: Landscape and visual resources.

1.4 Overview of LVIA methodologies

1.4.1 Introduction

1.4.1.1 The LVIA has been undertaken based on the guidance on landscape and visual impact assessment within the GLVIA3. In addition, the LVIA has been informed by relevant best practice guidance, including:

- Using LANDMAP in Landscape and Visual Impact Assessments (NRW, 2020).
- Technical Guidance Note 02/21: Assessing landscape value outside national designations (Landscape Institute, May 2021).
- Technical Guidance Note 06/19: Visual Representation of Development Proposals (Landscape Institute, September 2019).

1.4.2 LANDMAP and GLVIA3 methodology

1.4.2.1 *Using LANDMAP in Landscape and Visual Impact Assessments (GN46)* advises that the LANDMAP database provides survey information which, in association with other baseline sources and planning guidance, will provide context for a development proposal. However, when it comes to assessing the specific effects of a development proposal, GN46 directs the user to GLVIA3 as below:

‘LANDMAP does not provide a specific judgement about the effects of a specific development proposal. Evidence based, reasoned judgements, with reference to the landscape and visual effects must be made, following good practice as set out in GLVIA3.’

1.4.2.2 The GLVIA3 provides notes that *‘Even with qualified and experienced professional professionals there can be differences in the judgements made’* (GLVIA3, paragraph 2.25).

1.4.2.3 What is essential is that the method and criteria/definitions used are transparent, *‘so that the reasoning applied at different stages can be traced and examined by others’* (paragraph 2.24). For this reason, the approach set out in in GLVIA3 (which is recommended in the LANDMAP methodology) that of professional judgement, has been adopted.

1.5 LVIA assessment methodology for the onshore elements of the Mona Offshore Wind Project

1.5.1 Overview

1.5.1.1 An overview of the LVIA process set out in GLVIA3 is described in the following sections of this report and illustrated in Diagram 1.1. The LVIA assesses the likely significant effects of the construction, operations and maintenance and

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- decommissioning of the Mona Offshore Wind Project on the seascape, landscape and visual receptors, within the LVIA onshore study area.
- 1.5.1.2 GLVIA3 sets out the need to assess landscape and visual aspects separately, notwithstanding that they are related topics. The LVIA follows the guidance recommendation in treating seascape/landscape and visual matters separately throughout the assessment.
- 1.5.1.3 GLVIA3 sets out broad guidelines rather than detailed prescriptive methodologies. The methodologies tailored for the assessment of the Mona Offshore Wind Project are based on GLVIA3 guidance, which recommends that an LVIA '*concentrates on principles and process*' and '*does not provide a detailed or formulaic recipe*' to assess effects, it being the '*responsibility of the professional to ensure that the approach and methodology are appropriate to the task in hand*' (preface to GLVIA3).
- 1.5.1.4 Potential seascape, landscape and visual effects (the impact of the Mona Offshore Wind Project) are assessed by considering the amount or 'magnitude' of change/impact, compared with the baseline conditions, likely to be experienced by seascape and landscape character areas and visual receptors (people) as a result of implementing the Mona Offshore Wind Project. Magnitude is then weighed against the sensitivity (to the Mona Offshore Wind Project) of the seascape, landscape or visual receptor in question to arrive at a judgement on the level of effect. The sensitivity of a given receptor is assessed by considering both its inherent value and its susceptibility to the type of development proposed. Finally, a judgement is made on whether the predicted seascape, landscape or visual effect is likely to be significant or not significant.
- 1.5.1.5 Regarding establishing the LVIA baseline, in accordance with GLVIA3 (paragraph 7.13) and Planning Inspectorate Advice Note 19: Cumulative Effects Assessment (The Planning Inspectorate, 2015) existing active/in operation development is considered as part of the baseline conditions. As such, this LVIA is an assessment of the likely seascape, landscape and visual effects of the Mona Offshore Wind Project set within its existing seascape, landscape and visual context, one which already contains operational wind farms, other infrastructure, and associated activities.
- 1.5.1.6 The assessment methodology is summarised in Diagram 1.1. These factors are determined through a combination of quantitative (objective) and qualitative (subjective) assessment using professional judgement.

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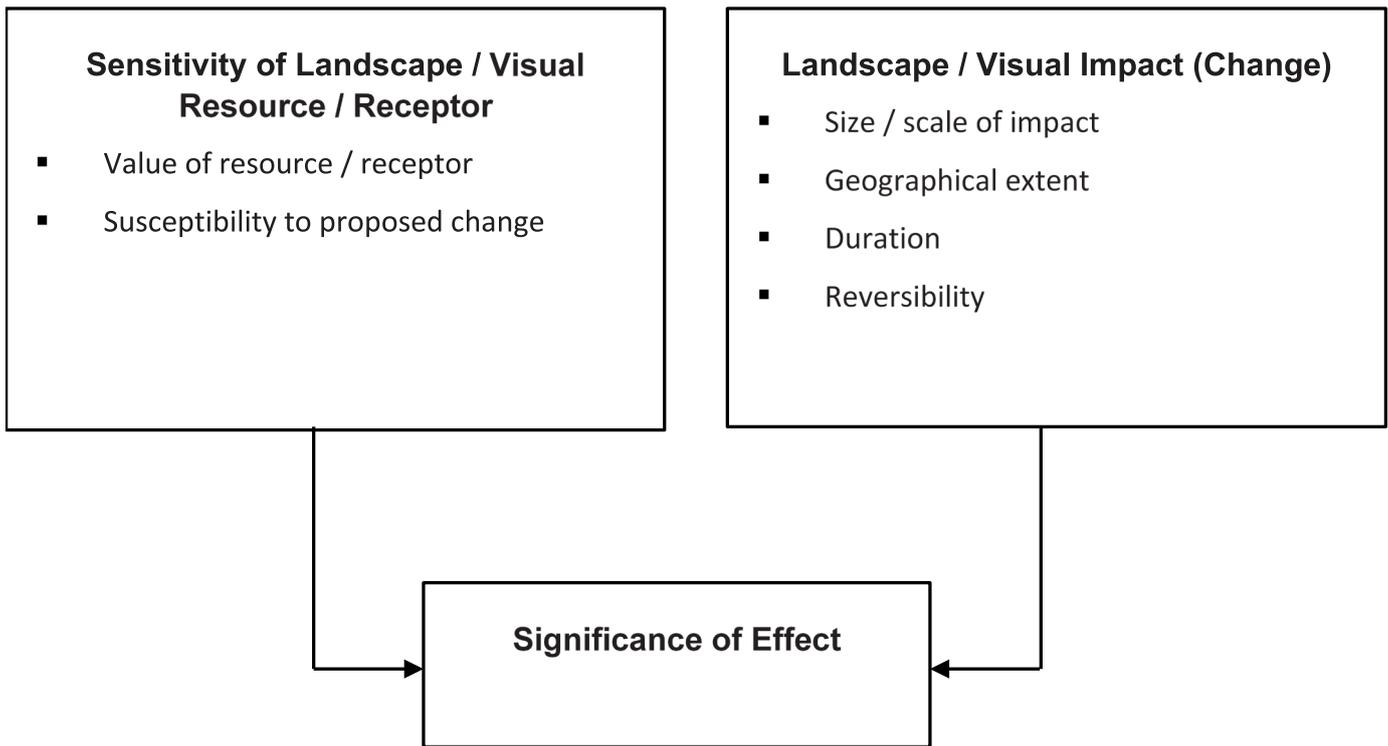


Diagram 1.1: Assessment method summary

1.5.1.7 The guidance emphasises the need for all assessments to be clear and transparent. It encourages the use of a simplified matrix of significance and warns against the use of other topics’ significance criteria. The guidance also warns against reliance on significance tables alone, the emphasis should be on well-argued narrative text, for clarity and transparency.

1.5.2 Significance and proportionality

1.5.2.1 The purpose of carrying out this LVIA is to identify and assess the significant effects likely to arise from the implementing the proposed development in question. Chapter 1 Introduction of GLVIA3 best practice guidance states:

‘Identifying significant effects stresses the need for an approach that is in proportion to the scale of the project that is being assessed and the nature of its likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional. This does not mean that effects should be ignored or their importance minimised but that the assessment should be tailored to the particular circumstances in each case’ (paragraph 1.17).

1.5.2.2 This LVIA and its findings and conclusions are steered by the proportionality principle expressed in the paragraph quoted above.

1.5.2.3 When judging the overall significance of effect, GLVIA3 reiterates the need to clearly distinguish between effects which are significant and those which are not. It explains that there are no hard or fast rules about what effects should be deemed to be significant. The LVIA method used in the assessment of the project takes the approach that *‘Where seascape or visual effects is [sic] classified as moderate, it is most likely that the effect will not be significant, but it is feasible that it could be judged as significant, depending on the particular circumstances arising’* (Guidance on the assessment of the impact of offshore wind farms: seascape and visual impact report,

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DTI, 2005, page 80). This approach is in line with the assessment methodology of the offshore elements of the Mona Offshore Wind Project.

1.5.3 Assumptions and limitations

1.5.3.1 The LVIA is subject to the following assumptions and limitations:

- The visual assessment is based on analysis of Ordnance Survey (OS) mapping of the onshore elements of the Mona Offshore Wind Project and surrounding area, and on field survey and analysis of views 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 onshore elements of the Mona Offshore Wind Project would be most visible, not all public viewpoints from which the onshore elements of the Mona Offshore Wind Project would potentially be seen have been included in the assessment
- The fieldwork was undertaken during early spring 2022 and winter 2023 when deciduous trees were not in leaf and late summer 2022 and post Section 42 consultation in August 2023 when deciduous trees were in leaf. The early spring photography has allowed an accurate projection of the MDS (i.e., in the most visible conditions). However, visibility in some months can be more limited due to weather conditions. Judgements have necessarily been made regarding the summer situation when vegetation is in full leaf for some of the locations
- The term ‘host’ landscape is understood to mean the landscape character area/LANDMAP Aspect Area unit in which the onshore elements of the Mona Offshore Wind Project are located
- The onshore elements of the Mona Offshore Wind Project are treated as a permanent form of development with the potential of being reversed at some point in the future
- A ‘defining’ change is understood to mean one that substantially and/or materially alters the existing situation. In this assessment methodology, a defining change to the existing landscape, seascape or visual resource will typically lead to a significant effect being recorded, whereas a ‘non-defining’ change will not
- Assumptions and limitations relating the visualisations and graphics production are set out in Appendix B.1.6.

1.6 Assessment and iterative design

1.6.1 Overview of iterative design process

1.6.1.1 As described in Volume 1, Chapter 5: Environmental impact assessment methodology, of the Environmental Statement, the LVIA is part of an ongoing iterative design process which aims to ‘*avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment*’. This iterative approach involves a feedback loop whereby if the initial assessment of a potential landscape, seascape and/or visual effect is deemed likely to result in a significant adverse effect in EIA terms, changes to the design of the onshore elements of the Mona Offshore Wind Project MDS are made (where reasonably practical) to avoid, reduce or offset this. The assessment is then repeated, and the process continues until the effect has been reduced to a level that is judged to be not significant in EIA terms or, having regard to other constraints, no further changes can be made to the onshore MDS of the Mona Offshore Wind Project in order to reduce the magnitude of impact (and hence its potential landscape,

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seascape, and visual significance of effects). In such cases an overall effect that is still significant may be presented in the landscape, seascape and visual resources chapter of the Environmental Statement.

- 1.6.1.2 This iterative design process has been used to inform the design of the onshore elements of the Mona Offshore Wind Project through the identification of likely significant landscape, seascape and/or visual effects, and (where possible within operational constraints) the development of mitigation and enhancement measures to address these. Where practical, these measures have been incorporated into the design of the onshore elements of the Mona Offshore Wind Project. They are referred to throughout the Environmental Statement as ‘measures adopted as part of the Mona Offshore Wind Project’.

1.6.2 Potential effects during construction and decommissioning

- 1.6.2.1 Potential effects on seascape character, landscape character and views/visual amenity that may occur during the construction and decommissioning phases of the onshore elements of the Mona Offshore Wind Project include the following:

- Landscape effects:
 - Potential direct and indirect effects on landscape character. For example, laying new 400kV grid connection cable to Bodelwyddan National Grid substation and the new onshore substation
 - Potential indirect effects on the special landscape qualities and integrity of designated landscapes. For example, construction and decommissioning of the onshore infrastructure may alter the special qualities and integrity of the Clwydian Range and Dee Valley National Landscape (NL)
- Seascape effects:
 - Potential direct and indirect effects on seascape character. For example, the construction works at the landfall which may alter the perceived character of the wider landscape, through the ability of people to see these changes within views
- Visual effects:
 - Potential direct effects on views and visual amenity experienced by people. For example, laying new 400kV grid connection cable to Bodelwyddan National Grid substation and the new onshore substation.

1.6.3 Potential effects during operations and maintenance

- 1.6.3.1 Potential effects on the seascape, landscape and views/visual amenity that may occur during the operations and maintenance phase of the onshore elements of the Mona Offshore Wind Project, include the following:

- Landscape effects:
 - Potential direct and indirect effects on seascape and landscape character (including designated landscapes), such as the Onshore Substation
 - Potential indirect effects on the special landscape qualities and integrity of designated landscapes. For example, operations and maintenance of the onshore infrastructure which may alter the special qualities and integrity of the Clwydian Range and Dee Valley NL
- Seascape effects:

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- Potential direct and indirect effects on seascape character, such as the construction work at the landfall, which may alter the perceived character of the wider seascape through the ability of people to see these changes within views
- Visual effects:
 - Potential direct effects on views and visual amenity experienced by people, such as the onshore substation
- Cumulative effects:
 - The assessment also considers the potential direct and indirect cumulative effects of the onshore elements of the Mona Offshore Wind Project and other plans/projects, which are likely to result in additional changes to landscape and seascape character and views.

1.7 Guidance, data sources and site surveys

1.7.1 Guidance

1.7.1.1

As well as relevant planning policy and guidance summarised in Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement, and detailed in Volume 7, Annex 6.1: Landscape and visual resources legislation and planning policy context, the methodology used for the LVIA has regard to relevant guidance and requirements contained in published documents, including in the following:

- Council of Europe, The European Landscape Convention (2000, ratified 2006) ETS No. 176
- Countryside Agency and Scottish Natural Heritage (2004), Topic Paper 6: Techniques and Criteria for judging Capacity and Sensitivity
- Department for Energy Security & Net Zero (2023a), Overarching National Policy Statement for Energy (EN-1)
- Department for Energy Security & Net Zero (2023b), National Policy Statement for Renewable Energy (EN-3)
- Department for Energy Security & Net Zero (2023c), National Policy Statement for Electricity Networks Infrastructure (EN-5)
- Department of Energy and Climate Change (2016), Offshore Energy Strategic Environment Assessment 3
- Department of Trade and Industry, (2005), Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report
- Landscape Institute (2019), Visual Representation of Development Proposals
- Natural England (2014), An Approach to Landscape Character Assessment (Natural England, 2014)
- Natural England (2022), Phase I: Expectations for pre-application baseline data for designated nature conservation and landscape receptors to support offshore wind applications. Version 1.1. 79 pp
- NatureScot (2022), Assessing the Cumulative Landscape and Visual Impacts of Onshore Wind Energy Developments
- NatureScot (2017), Visual Representation of Wind farms, Guidance (Version 2.2).

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1.7.2 Data sources

1.7.2.1 The data sources that have been collected and used to inform the onshore LVIA are summarised in Table 1.1.

Table 1.1: Data sources used to inform the onshore LVIA.

Title	Source	Year	Author
LANDMAP – the Welsh Landscape Baseline	Natural Resources Wales	Various (2007)	Natural Resources Wales
National Landscape Character	Natural Resources Wales	Various (2013)	Natural Resources Wales
Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment for Wind Energy Development	Conwy County Borough Council and Denbighshire County Council	2013	Conwy County Borough Council and Denbighshire County Council
Clwydian Range and Dee Valley Management Plan 2014 - 2019	Clwydian Range and Dee Valley NL	2014	Clwydian Range and Dee Valley AONB [NL] Partnership
LDP11: Landscape Sensitivity and Capacity Assessment for Onshore Wind Turbine Development	Conwy Local Development Plan 2007 – 2022 SPD	2014	Conwy County Borough Council
National Seascape Assessment for Wales	Natural Resources Wales	2015	Land Use Consultants
Welsh National Marine Plan	Welsh Government	2019	Welsh Government
Designing for Renewable Energy in Wales (Consultation Draft)	Design Commission for Wales	2023	Design Commission for Wales

1.7.3 Desk-based studies and site survey work

1.7.3.1 The LVIA has been informed by desk-based studies, stakeholder consultations and field survey work undertaken as set out in Volume 7, Annex 6.3: Visual baseline technical report - onshore development of the Environmental Statement.

1.8 Assessment of visual effects

1.8.1 Introduction

1.8.1.1 Visual effects are concerned with effects on views and visual amenity, defined as ‘*the overall pleasantness of the views people enjoy of their surroundings...*’ (GLVIA3, page 158). They relate to the effects on views experienced by visual receptors (e.g., footpath users, road users, people in their places of work).

1.8.1.2 Visual receptors are always people ‘*An assessment of visual effects deals with the effects of change and development on the views available to people and their visual amenity*’ (GLVIA3, paragraph 6.1). The assessment of visual effects is thus concerned with the potential visual change experienced by people as a result of implementing the onshore elements of the Mona Offshore Wind Project and may include changes to existing static and sequential views, or the wider visual amenity.

1.8.1.3 The level of visual effect (and whether this is significant or not) is determined through consideration of the sensitivity of each visual receptor (or group) and the magnitude of

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impact that will potentially be brought about by the construction, operations and maintenance and decommissioning of the onshore elements of the Mona Offshore Wind Project.

1.8.2 Zone of Theoretical Visibility (ZTV)

1.8.2.1 A plan mapping the ZTV for the Onshore Substation within the LVIA onshore study area for the substation, has been used to assist with representative viewpoint selection. The ZTV takes account of the screening effects of buildings, landform and significant vegetation, as shown on the 1:25,000 OS mapping. They do not reflect local topographical variations, hedgerows, individual trees, or smaller built structures, such as walls. A ZTV is only an indication of where a proposed structure might be seen from. It does not indicate how much of the Onshore Substation can be seen or reflect the effects of perspective. It simply shows that part of the Onshore Substation is visible, however small or distant. As such it is a tool to be followed up by fieldwork, which verifies what of the Onshore Substation might actually be visible.

1.8.3 Representative viewpoints

1.8.3.1 Representative viewpoints are used to assist the assessment and cover a range of locations within the LVIA onshore study area at differing distances and orientations relative to the Onshore Substation and cable corridors. The purpose of these is to help assess both the level of effect for visual receptors, guide the design process and focus the assessment on potentially significant effects.

1.8.3.2 The assessment process involved visiting the representative viewpoint locations and viewing visualisations of the Onshore Substation prepared for each. The fieldwork was conducted in periods of favourable visibility, during both the summer and winter months to take account of the seasonal variation in vegetation cover.

1.8.4 Evaluating visual sensitivity to change

1.8.4.1 The sensitivity of each visual receptor (the particular person or group of people likely to be affected at a specific viewpoint) *‘should be assessed in terms of both their susceptibility to change in views and visual amenity and also the value attached to particular views’* (GLVIA3, paragraph 6.31). In this LVIA, susceptibility and value of visual receptors are defined as follows:

- Visual Susceptibility: *‘The susceptibility of different visual receptors to changes in views and visual amenity is mainly a function of:*
 - *the occupation or activity of people experiencing views at the particular locations; and*
 - *the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations’* (GLVIA3, paragraph 6.32)
- Value of views: Judgements made about the value of views should take account of: *‘recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations; and, indicators of value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment (such as parking places, sign boards or interpretive material) and references to them in literature or art...’* (GLVIA3, paragraph 6.37).

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1.8.5 Visual sensitivity criteria

1.8.5.1 Sensitivity is not readily graded in bands and GLVIA notes, with regards to visual sensitivity, that the division of who may or may not be sensitive to a particular change *'is not black and white and in reality, there will be a gradation in susceptibility to change'* (GLVIA, paragraph 6.35). To provide both consistency and transparency to the assessment process, Table 1.2 defines the criteria which have guided the judgement as to the intrinsic susceptibility and value of the visual receptor and their subsequent sensitivity to changes to views brought about by the Mona Offshore Wind Project.

Susceptibility

1.8.5.2 The susceptibility of visual receptors is a function of the activity in which the receptor is involved and the extent to which their attention or interest may be focussed on the views and visual amenity they experience at particular locations.

1.8.5.3 Susceptibility is categorised as Very High, High, Medium, Low or Negligible.

Value

1.8.5.4 Value considers the importance attached to views and visual amenity which may be evidenced by its position in a designated landscape or associated with a cultural heritage asset. Other indicators of value may include recognition of a view or views in guidebooks or on maps; the provision of facilities for the enjoyment of a view; and references in literature or art. Views of lesser value may include local views from residential areas which have no wider recognition.

1.8.5.5 Value is categorised as International, National, Regional and Community.

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Table 1.2: Visual sensitivity to change.

Sensitivity	Typical descriptors	
	Visual receptor susceptibility	Value of view
Very High	Might be visitors to an internationally or nationally designated landscape or recognised visitor attraction where views to and from the designated landscape or visitor destination are integral to the quality visual amenity experienced at that location.	International may include important views from internationally designated landscapes or views noted in international guidebooks as visitor attractions.
High	Might be visitors to a nationally designated landscape or recognised visitor destination or route where views to and from the designated landscape or attraction are integral to the visual amenity experienced at that location. People engaged in outdoor recreation using public rights of way or Access Land in nationally designated landscapes. Users of a national trails or other tourist routes may also be of high susceptibility although susceptibility to change can vary along a route depending on the nature of the locality through which the route passes.	National may include important views from nationally designated landscapes or views noted in national guidebooks and maps. May also include views from national trails, cycle routes and views identified in citations of registered parks and gardens or views important to the understanding of a cultural heritage asset.
Medium	Might include those people whose attention or interest is focussed on their surroundings to a degree but is not integral to the activity being pursued. This may include transitory views from local roads or public transport including ferries.	Regional may include views identified in Conservation Area Appraisals, views from regionally important landscapes, such as Special Landscape Areas, or Areas of Great Landscape Value, promoted paths/regional trails and views noted in landscape character assessments.
Low	Might include those people whose attention or interest is not immediately focussed on their surroundings and may include people using rapid transport routes such as major road and rail links. It may also include people at their place of work where their surroundings are not integral to the work being undertaken.	Community may include views that are not recognised through a designation and are undocumented. The views may be valued locally, e.g., through Neighbourhood Plans, although not of importance in the wider area.
Negligible	Might include those people whose attention or interest is not focussed on their surroundings or whose immediate surroundings truncate views.	Views that are not noted in any documentation and are simply those gained as people go about their day-to-day activities.

Visual sensitivity

1.8.5.6 Table 1.3 indicates how visual susceptibility and value of views combine to give overall sensitivity of the receptor. Each receptor is considered individually in relation to the specific development. Therefore, in practice there is an element of professional judgement regarding overall sensitivity which means that a particular combination of susceptibility and value may not result in the outcome shown in Table 1.3.

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Table 1.3: Visual sensitivity evaluation.

Sensitivity of receptor (value)	Magnitude of impact (susceptibility)				
	Negligible	Low	Medium	High	Very High
Community	Negligible	Low	Medium to low	High to medium	High
Regional	Negligible	Low	Medium	High to medium	High
National	Low	Low	High to medium	High	Very high to high
International	Low	Medium	High	Very high to high	Very high

1.8.6 Evaluating visual magnitude of impact

1.8.6.1 GLVIA3 advises that ‘Each of the visual effects identified needs to be evaluated in terms of its size or scale, the geographical extent of the area influenced, and its duration and reversibility’ (GLVIA3, paragraph 6.38). The approach to evaluating overall magnitude of change involves two main steps. Firstly, the key factors of scale of change and geographical extent are evaluated and combined to provide an initial evaluation. The results of the first step are then combined with the evaluation of duration and reversibility.

Size or scale

1.8.6.2 Of these three factors scale of change has more of an influence on the overall judgement of magnitude. Geographical extent of the change also has an important influence on the overall outcome of the magnitude evaluation when combined with scale of change. For example, a large scale of change that occurs across a limited geographical extent would result in a lower magnitude of impact than a large scale of change across a wide geographical extent. Scale of change is evaluated in accordance with GLVIA3 with typical descriptors listed below which are used as a guide to the degree of change that may be experienced. The descriptors are not intended to fit every impact assessed and professional judgement is used in each magnitude evaluation.

1.8.6.3 An assessment is made about the size or scale of change in the view that is likely to be experienced because of the onshore elements of the Mona Offshore Wind Project, based on the following criteria:

- **Distance:** the distance between the visual receptor/viewpoint and the Mona Offshore Wind Project. Generally, the greater the distance, the lower the magnitude of impact, as the Mona Offshore Wind Project will constitute a smaller scale component of the view. Distance can be quantified and described objectively
- **Size:** the amount and size of the onshore elements of the Mona Offshore Wind Project that will be seen. Visibility may range from small or partial visibility of the onshore elements of the Mona Offshore Wind Project to all the onshore elements being visible. Generally, the closer and greater the number of elements within the Mona Offshore Wind Project appearing in the view, the higher the magnitude of impact. This is also related to the degree to which the onshore elements of the Mona Offshore Wind Project may be wholly or partly screened by landform, vegetation (seasonal) and/or built form. Conversely open

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views are likely to reveal more of the Mona Offshore Wind Project, particularly where this is a key characteristic of the landscape/seascape. The amount of development visible can be described objectively in part by reference to the proportion of the whole in view

- **Scale:** the scale of change in the view with respect to the loss or addition of features in the view and changes in its composition. The scale of the onshore elements of the Mona Offshore Wind Project may appear larger or smaller relative to the existing view composition
- **Field of View (FoV):** the extent or proportion of the view that is affected by the Mona Offshore Wind Project. Generally, the greater the extent or proportion impacted, the higher the impact magnitude will be. This can in part be described objectively by reference to the horizontal and vertical FoVs affected relative to the extent available view
- **Contrast:** the character and context within which the onshore elements of the Mona Offshore Wind Project will be seen and the degree of contrast or integration of any new features with existing landscape and seascape elements, in terms of scale, form, mass, line, height, colour, and luminance. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of impact. Conversely, congruity with existing surroundings is likely to be less impactful
- **Consistency of image:** the consistency of image of the onshore elements of the Mona Offshore Wind Project in relation to other developments. The magnitude of impact is likely to be lower if the onshore substation is broadly similar to other buildings or structures in the landscape
- **Skyline/background:** whether the Onshore Substation will be viewed against the skyline or a landform may affect the level of contrast and magnitude. If it adds to an already developed backdrop or skyline the magnitude of impact will tend to be lower
- **Number:** generally, the greater the number of separate elements within a proposed development seen simultaneously or sequentially, the higher the magnitude of impact. This can usually be quantified and described objectively
- **Nature of visibility:** the nature of visibility is a further factor for consideration. The onshore elements of the Mona Offshore Wind Project may be subject to various phases of development and the way it is viewed will vary throughout the year due to differing weather and atmospheric conditions/visibility and seasonal variations, including vegetation cover.

Geographical extent

- 1.8.6.4 The geographic extent over which the visual effect will be experienced is distinct from the size or scale of effect and is described in terms of the physical area or location over which it will be experienced (quantifiable as a linear or area measurement). The extent of effects will vary according to the specific nature of the onshore elements of the Mona Offshore Wind Project and is principally assessed through consideration of the ZTV, field survey and analysis of the extent of visibility likely to be experienced by visual receptors on the ground at the representative viewpoints.
- 1.8.6.5 Table 1.4 sets out the scale of change and geographical extent criteria for assessing the magnitude of impact.

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Table 1.4: Criteria used for magnitude of impact: Scale of change and geographical extent.

Magnitude of impact	Typical descriptors	
	Scale of change	Geographical extent
Large	A high degree of loss and/or addition of features that redefines the composition of views. The proposed development occupies a large proportion of available views and appears large in size relative to other features in the view and the location of the visual receptor. It contrasts markedly with other features in the view and does not integrate with the existing view composition in terms of its built form and overall appearance.	The proposed development would be visible from a wide area.
Medium	A moderate degree of loss and/or addition of features that changes the composition of views without redefining it. The proposed development occupies a moderate proportion of available views and appears medium in size relative to other features in the view and the location of the visual receptor. It contrasts with other features in the view and does not wholly integrate with the existing view composition in terms of its built form and overall appearance.	The proposed development would be visible from an intermediate area.
Small	Little loss and/or addition of features that changes the composition of views without redefining it. The proposed development occupies a small proportion of available views and appears small in size relative to other features in the view and the location of the visual receptor. It contrasts slightly with other features in the view and integrates to a degree with the existing view composition in terms of its built form and overall appearance.	The proposed development would be visible from limited area.
Negligible	Very little loss and/or addition of features resulting in minimal change to the composition of views. The proposed development occupies a very small proportion of available views and appears inferior in size relative to other features in the view and the location of the visual receptor. No apparent contrast with other features in the view and integrates reasonably well with the existing view composition in terms of its built form and overall appearance.	The proposed development would be visible from very limited area.

1.8.6.6 Table 1.5 shows how scale of change and geographical extent combine to give an initial evaluation.

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Table 1.5: Magnitude of visual change – Step 1 evaluation.

Geographical extent	Scale of change			
	Negligible	Small	Medium	Large
Negligible	Negligible	Negligible	Small	Small
Small	Negligible	Small	Medium	Medium
Medium	Small	Medium	Medium	High
Large	Small	Medium	High	High

Duration and reversibility

- 1.8.6.7 GLVIA3 advises that duration and reversibility should be clearly defined for the development being assessed and that duration and reversibility may be combined into a single judgement.
- 1.8.6.8 The duration and reversibility of visual effects are based on the period over which the onshore elements of the Mona Offshore Wind Project are likely to exist (i.e., during construction, operations and maintenance and decommissioning phase) with effects being reversed at the end of that period. The criteria for duration are listed in paragraph 1.8.6.9, below.
- 1.8.6.9 Long-term, medium-term, and short-term visual effects are defined as follows:
- Long-term: more than 10 years (may be permanent or reversible)
 - Medium-term: six to 10 years (reversible)
 - Short-term: nought to five years (reversible).
- 1.8.6.10 The second step of the magnitude of change judgement combines the outcome of Step 1 with the evaluation of duration and reversibility as shown in Table 1.6 giving the overall evaluation judgement.

Table 1.6: Magnitude of visual change – Step 2 overall evaluation.

Duration/ reversibility	Step 1 evaluation			
	Negligible	Small	Medium	High
Short-term	Negligible	Negligible	Small	Medium
Medium-term	Negligible	Small	Medium	Medium
Long-term	Negligible	Small	Medium	Large
Permanent	Small	Medium	Large	Large

- 1.8.6.11 The magnitude of change evaluation also considers whether views of the proposed development will be full, partial, glimpsed or intermittent, and whether views will be direct or at an oblique angle.

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Visual magnitude of impact rating

1.8.6.12 The magnitude of impact resulting from the onshore elements of the Mona Offshore Wind Project is described as large, medium, small, negligible and no change as defined in Table 1.7.

Table 1.7: Visual Magnitude of Impact Criteria.

Magnitude of impact	definition
Large	Complete or very substantial visual change involving complete or very substantial obstruction of existing view or complete change in character and composition of visual baseline (i.e., pre- development view) e.g., through removal of key elements.
Medium	Moderate visual change, which may involve partial obstruction of existing view or partial change in character and composition of visual baseline (i.e., pre- development view) through the introduction of new elements or removal of existing elements. Change may be prominent but would not substantially alter the scale and character of the surroundings and the wider setting. Composition of views would alter. View character may be partially changed through the introduction of features which, although uncharacteristic, may not necessarily be visually discordant.
Small	Minor change to the visual baseline (i.e., pre-development view) – change would be distinguishable from the surroundings whilst view composition and character would be similar to the pre- change circumstances.
Negligible	Very slight change in visual baseline (i.e., pre- development view) – change barely distinguishable from the surroundings. Composition and character of view substantially unaltered.
No change	No alteration to the existing view.

1.8.7 Evaluating significance of visual effect

1.8.7.1 The significance of a visual effect is evaluated through the combination of visual sensitivity and magnitude of impact. Once the level of effect has been established, a judgement is then made as to whether the effect is ‘significant’ as required by the relevant EIA Regulations. This process is assisted by the matrix in section 1.10, which is used to guide the assessment.

1.8.7.2 A significant effect is more likely to occur where a combination of the variables results in the onshore elements of the Mona Offshore Wind Project having a defining effect on the view or visual amenity, or where changes materially affect a visual receptor of high sensitivity. An effect is more likely to be assessed as not significant when the combination of variables results in the onshore elements of the Mona Offshore Wind Project having a non-defining effect on the view or visual amenity, or where predicted changes affect a low sensitivity visual receptor.

1.9 Assessment of landscape and seascape effects

1.9.1 Introduction

1.9.1.1 The Marine Policy Statement (UK Government, 2011) states ‘*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.*’ In England, seascape characterisation includes both the sea surface and what lies below the waterline.

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- 1.9.1.2 Regarding Wales, INTERREG 2001 defines seascape to include: *‘views from land to sea; views from sea to land; views along coastline; the effect on landscape of the conjunction of sea and land.’*
- 1.9.1.3 For Mona Offshore Wind Project (Onshore), located wholly in Wales, landscape character areas have been determined through the LANDMAP database with a focus on Visual and Sensory Aspect Layer data along with national landscape and seascape character within the LVIA onshore study area (10 km from the substation location).
- 1.9.1.4 Other sources of landscape and seascape character information which have informed this assessment are listed in Table 1.1. Proforma tables of assessing landscape and seascape sensitivity, derived from NatureScot guidance (April 2022), are included within Appendix C.1.

1.9.2 Evaluating seascape and landscape sensitivity to change

- 1.9.2.1 The sensitivity of a landscape/seascape receptor is a combination of *‘judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape’* (GLVIA3, paragraph 5.39). In this LVIA, susceptibility and value of seascape/landscape receptors are defined as follows:
- Landscape susceptibility: *‘the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed change without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies’* (GLVIA3, paragraph 5.40)
 - Value of the landscape receptor: *‘The value of the Landscape Character Types or Areas that may be affected, based on review of designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value; and, the value of individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, particularly landscape features, notable aesthetic, perceptual or experiential qualities, and combinations of these contributors’* (GLVIA3, paragraph 5.44).
- 1.9.2.2 The assessment of landscape/seascape sensitivity has regard to published landscape and seascape sensitivity studies including NRW Stage 3 report (Report No. 331).

Landscape and seascape susceptibility to change

- 1.9.2.3 The susceptibility of a landscape/seascape character receptor to change is a reflection of its ability to accommodate the changes that would result from the introduction of the Mona Offshore Wind Project without detrimental consequences for the maintenance of the baseline situation and/or fulfilment of landscape planning policies and strategies. Some landscape and seascape receptors and resources are better able to accommodate development than others due to certain characteristics indicative of their capacity to accommodate change.
- 1.9.2.4 The susceptibility of a landscape or seascape receptor to change has been classified as very high, high, medium, low or negligible. The assessment has been made using evidence and professional judgement based on the following criteria:
- **Overall strength and robustness:** collectively the overall characteristics and qualities of a particular landscape/seascape result in a strong and robust character that is capable of reasonably accommodating the influence of the

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onshore elements of the Mona Offshore Wind Project without undue adverse effects on the special qualities (in the case of a designated landscape) or the key characteristics for which an area of seascape or landscape character is valued

- **Landscape and seascape scale and topography:** the scale and topography are large enough to physically accommodate the influence of the onshore elements of the Mona Offshore Wind Project. Topographical features such as more complex, distinctive or small-scale landforms are likely to be more susceptible than larger scale, simple, expansive and homogenous landforms
- **Openness and enclosure:** openness in the landscape or seascape may increase susceptibility to change because it can result in wider visibility. An open landscape/seascape may also be larger scale and simple which will decrease its susceptibility. Conversely, enclosed landscapes/seascapes can offer more screening potential, limiting visibility to a smaller area. However, they may also be smaller scale and more complex which will increase susceptibility
- **Skyline:** prominent and distinctive skylines and horizons with important landmark features identified in landscape/seascape character assessments are generally considered to be more susceptible to development compared with broad, simple skylines/horizons which lack landmark features or contain built features and human activities
- **Relationship with other development and landmarks:** contemporary landscapes where there are existing similar developments (e.g., windfarms) or other forms of development and related activities (industry, mineral extraction, masts, urban fringe/large settlement, major transport/shipping routes) that already have a characterising influence result in a lower susceptibility to development as opposed to areas characterised by smaller scale, historic development and landmarks
- **Perceptual qualities:** notable landscapes acknowledged to be particularly scenic, wild, or tranquil are generally considered to be more susceptible to development in comparison to ordinary, cultivated, farmed, or developed landscapes where perceptions of 'wildness' and tranquillity are less tangible or more diluted. However, landscapes which are either remote or appear natural may vary in their susceptibility to development. Dynamic landscapes/seascapes (i.e., supporting human generated activity/movement) are considered less susceptible than the converse described above
- **Landscape/seascape context and association:** the extent to which the onshore elements of the Mona Offshore Wind Project will influence the character of the landscape, seascape and visual resource/receptor LVIA onshore study area relates to existing associations between the host landscape receptor and the receptor from which it is being experienced. In some situations, this association will be strong (i.e., where the landscapes/seascapes are directly related) whereas in others it will be less marked (i.e., where the landscape or seascape association is weak). The landscape/seascape context and visual connections with areas of adjacent landscape or seascape character or designations has a bearing on the susceptibility to development.

Value of landscape and seascape receptors

- 1.9.2.5 The value of landscape and seascape receptors '*...will to some degree reflect landscape designations and the level of importance and the level of importance which*

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they signify, although there should not be over-reliance on designations as the sole indicator of value.' (GLVIA3, paragraph 5.45).

1.9.2.6 The value of a seascape/landscape has been classified as very high, high, medium, low, or negligible. The assessment has been made using evidence and professional judgement based on the following criteria:

- **Landscape designations:** a receptor that lies within the boundary of a recognised landscape related planning designation will be of increased value, depend on the proportion of the receptor that is so influenced and the level of importance of the designation (i.e., international, national, regional or local). The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment. *Technical Guidance Note 02/21: Assessing landscape value outside national designations* (Landscape Institute, May 2021) is helpful when considering the value of landscape receptors. LANDMAP visual and sensory evaluation is also a consideration in relation to landscape value
- **Landscape or seascape quality:** the quality of a landscape/seascape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness, and the extent to which its valued attributes have remained intact. A landscape or seascape with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a less intact landscape or seascape containing elements that detract from its character. This would include aspects such as: Natural heritage – landscape/seascape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape/seascape; cultural heritage – landscape/seascape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape/seascape; and, landscape/seascape condition – landscapes/seascapes which are in a good physical state both with regard to individual elements and overall landscape/seascape structure
- **Landscape or seascape experience:** the experiential qualities evoked by a landscape/seascape receptor or resource can add to its value. This relates to several factors, including: The perceptual responses it evokes (scenic, wildness, tranquillity); the cultural associations that may exist in the arts, events/history or with notable people; and, the distinctiveness of the landscape/seascape. Other factors include the functional and recreational value of the landscape/seascape.

1.9.2.7 For the Onshore Substation, Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement, has considered the effects on locally designated landscapes within 5 km.

Landscape and seascape sensitivity rating

1.9.2.8 As with visual sensitivity described above (section 1.8.5) seascape and landscape sensitivity is not readily graded into bands. In order to provide both consistency and transparency to the assessment process, descriptions of landscape susceptibility and value are based on the same sliding scale as visual receptors (i.e., negligible, low, medium, high and very high) as set out in Table 1.8.

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Table 1.8: Sensitivity of seascape and landscape receptors.

Sensitivity	Typical descriptors	
	Landscape/seascape resource/receptor susceptibility	Landscape/seascape resource/receptor value
Very High	Exceptional landscape/seascape quality; absence of landscape/seascape detractors; no or limited potential for substitution. Key elements/features well known to the wider public	Internationally/nationally designated landscape, or key elements or features of internationally/nationally designated landscape
High	Strong/distinctive landscape/seascape character; relatively free of seascape/landscape detractors	Nationally/regionally designated landscape areas or features
Medium	Some distinctive landscape/seascape characteristics; presence of landscape/seascape detractors	Regionally/locally designated/valued landscape and features, e.g., Special Landscape Areas (SLA) or Areas of Great Landscape Value (AGLV)
Low	Absence of distinctive landscape/seascape characteristics; unavoidable presence of landscape/seascape detractors	Undesignated landscape/seascape and features
Negligible	Absence of positive landscape/seascape characteristics. Significant presence of landscape/seascape detractors	Undesignated landscape/seascape and features

1.9.2.9 Table 1.9 indicates how landscape/seascape susceptibility and value combine to give overall sensitivity of the receptor. Each receptor is considered individually in relation to the specific development. Therefore, in practice there is an element of professional judgement regarding overall sensitivity which means that a particular combination of susceptibility and value may not result in the outcome shown in Table 1.9.

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Table 1.9: Landscape and seascape sensitivity evaluation.

Value	Susceptibility				
	Negligible	Low	Medium	High	Very high
Undesignated (with detractors)	Negligible	Negligible	Negligible	Low	Low
Community	Negligible	Low	Medium to low	Medium	High to medium
Regional	Negligible	Low	Medium	High to medium	High
National	Low	Low	High to medium	High	Very high to high
International	Low	Medium	High	Very high to high	Very high

1.9.3 Landscape and seascape magnitude of impact

1.9.3.1 GLVIA3 advises that ‘Each effect on landscape receptors needs to be assessed in terms of its size or scale, the geographical extent of the area influenced, and its duration and reversibility’ (GLVIA3, paragraph 5.48). The approach to evaluating overall magnitude of change involves two main steps. Firstly, the key factors of scale of change and geographical extent are evaluated and combined to provide an initial evaluation. The results of the first step are then combined with the evaluation of duration and reversibility.

Size or scale of change

1.9.3.2 Of these factors scale of change has more of an influence on the overall judgement of magnitude. Geographical extent of the change also has an important influence on the overall outcome of the magnitude evaluation when combined with scale of change. For example, a large scale of change that occurs across a limited geographical extent would result in a lower magnitude of impact than a large scale of change across a wide geographical extent. Scale of change is evaluated in accordance with GLVIA3 with typical descriptors listed below which are used as a guide to the degree of change that may be experienced. The descriptors are not intended to fit every impact assessed and professional judgement is used in each magnitude evaluation.

1.9.3.3 This criterion relates to the size or scale of change to the landscape/seascape that will arise as a result of a proposed development, based on the following factors:

- **Landscape and seascape elements:** the degree to which the pattern of elements that makes up the landscape/seascape character will be altered by the onshore elements of the Mona Offshore Wind Project, by removal or addition of elements compared with the baseline situation. The magnitude of impact will generally be higher if the landscape/seascape features are extensively removed or altered, and/or if many new elements are added to the landscape/seascape
- **Landscape and seascape characteristics:** this relates to the extent to which the effect of the onshore elements of the Mona Offshore Wind Project changes, physically or perceptually, the key characteristics of the landscape/seascape that may be important to its distinctive character. This may include, for example, the scale of the landscape/seascape or landform, its relative simplicity or

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irregularity, and the landscape/seascape context. Also relevant are: The grain or orientation of the landscape/seascape; the degree to which the receptor is influenced by external features; and the juxtaposition of the onshore elements of the Mona Offshore Wind Project in relation to these and other baseline characteristics. If the onshore elements of the Mona Offshore Wind Project are located in a landscape receptor that is already affected by other similar development, this may reduce the magnitude of impact

- **Landscape designation:** in the case of designated landscapes, the degree of change is considered in light of potential effects on the special qualities for which the area is designated which in turn underpin the integrity of the designation. All landscapes and seascapes change over time and much of that change is managed or planned. Designated landscapes often have management objectives for protection from or accommodation of development. The scale of change may be localised, occurring over limited parts of a designated area, or more widespread affecting a large part of designation, in which latter case the overall integrity of the designated area may potentially be affected
- **Distance:** the size and scale of change is also strongly influenced by the proximity of the onshore elements of the Mona Offshore Wind Project to the receptor and the extent to which the development has a characterising influence on the landscape/seascape. Consequently, the scale or magnitude of impact is likely to be lower in respect of receptors that are distant from the onshore elements of the Mona Offshore Wind Project and/or screened by intervening landform, vegetation and built form. This is because the scale of its influence on such landscape or seascape receptors is small or limited. Conversely, those landscapes and seascapes closest to the development are likely to be most affected. Host landscapes and seascapes will be directly affected whilst adjacent areas of landscape or seascape character will be indirectly affected
- **Amount and nature of change:** the amount of development components and context in which the onshore elements of the Mona Offshore Wind Project will be seen has a bearing on impact magnitude. Visibility of it may range from part of the onshore cable corridor, or the majority of the onshore substation. Broadly speaking, the greater the amount of development that can be seen, the higher the scale of change. The degree to which the onshore elements of the Mona Offshore Wind Project is perceived to be on the horizon or within the landscape also has a bearing on the amount and nature of change. In general, the magnitude of impact is likely to be lower when the onshore elements of the Mona Offshore Wind Project are perceived to be on the horizon, or beyond it, at distance, rather than within the landscape.

Geographical extent

1.9.3.4

The geographic extent over which the landscape or seascape effects would be experienced is distinct from the size or scale of effect. This evaluation is an expression of the geographic extent of the receptor that will experience a particular magnitude of impact and the corresponding extents of potential significant and non-significant effect. This will vary depending on the specific nature of the onshore elements of the Mona Offshore Wind Project and is principally assessed through analysis of the extent of its visibility and the likely geographic extent of perceived changes to landscape/seascape character.

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1.9.3.5 Table 1.10 sets out the scale of change and geographical extent criteria for assessing the magnitude of impact.

Table 1.10: Criteria used for magnitude of impact: scale of change and geographical extent.

Magnitude of impact	Typical descriptors	
	Scale of change	Geographical extent
Large	High degree of loss and/or addition of features that redefines key characteristics across a large proportion of the receptor and has a defining influence on landscape character or special qualities of the receptor.	The proposed development would affect a large proportion of the receptor.
Medium	Moderate degree of loss and/or addition of features that changes key characteristics across some of the receptor partially influencing landscape character or special qualities of the receptor without redefining it.	The proposed development would affect an intermediate proportion of the receptor.
Small	Little loss and/or addition of features and limited change to key characteristics. The underlying character of the receptor and special qualities remain largely intact.	The proposed development would affect a limited proportion of the receptor.
Negligible	Very little loss and/or addition of features resulting in barely discernible change to the character and qualities of the receptor.	The proposed development would affect a very limited proportion of the receptor.

1.9.3.6 Table 1.11 shows how scale of change and geographical extent combine to give an initial evaluation.

Table 1.11: Magnitude of landscape/seascape change – Step 1 evaluation.

Extent	Scale of change			
	Negligible	Small	Medium	Large
Negligible	Negligible	Negligible	Small	Small
Small	Negligible	Small	Medium	Medium
Medium	Small	Medium	Medium	High
Large	Small	Medium	High	High

Duration and reversibility

1.9.3.7 GLVIA3 advises that duration and reversibility should be clearly defined for the development being assessed and that duration and reversibility may be combined into a single judgement.

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1.9.3.8 The duration and reversibility of landscape and seascape effects has been based on the period over which the onshore elements of the Mona Offshore Wind Project is likely to exist (i.e., during construction, operations and maintenance and decommissioning phase) the extent to which it will be removed and its effects reversed at the end of that period (during decommissioning). Long-term, medium-term and short-term seascape/landscape effects are defined as follows:

- Long-term: more than 10 years (may be defined as permanent or reversible)
- Medium-term: six to 10 years (reversible)
- Short-term: nought to five years (reversible).

Landscape and seascape magnitude of impact rating

1.9.3.9 The magnitude of impact resulting from the onshore elements of the Mona Offshore Wind Project is described as large, medium, small, negligible or no change. In assessing magnitude of impact, the assessment focuses on the size or scale of change. The geographic extent, duration and reversibility are stated separately in relation to the assessed effects (i.e., as short, medium, or long-term and temporary or permanent in the case of the last option). The assessment of magnitude for each receptor is based on evidence and professional judgement. The levels of magnitude of impact that can occur are defined in Table 1.12.

Table 1.12: Definition of terms relating to the magnitude of impact upon seascape and landscape receptors.

Magnitude of Impact	Definition
Large	Total loss, or/very substantial loss or addition of key elements/features/patterns of the baseline (i.e., pre-development landscape/seascape) and/or introduction of dominant, uncharacteristic elements compared to the attributes of the receiving landscape/seascape.
Medium	Partial loss or addition of, or moderate alteration to, one or more key elements/features/patterns of the baseline (i.e., pre-development landscape/seascape) and/or introduction of elements that may be prominent but would not be substantially uncharacteristic in comparison to the attributes of the receiving landscape/seascape.
Small	Minor loss or addition of, or alteration to, one or more key elements/features/patterns of the baseline, i.e., pre-development landscape/seascape and/or introduction of elements that may not be uncharacteristic compared to the surrounding landscape/seascape.
Negligible	Very minor loss or addition of, or alteration to, one or more key elements/features/patterns of the baseline (i.e., pre-development landscape/seascape) and/or introduction of elements that are not uncharacteristic in comparison to the surrounding landscape/seascape; approximating to a 'no-change' situation.
No Change	No loss, alteration or addition to the receiving landscape/seascape resource.

1.9.3.10 The second step of the magnitude of change judgement combines the outcome of Step 1 with the evaluation of duration and reversibility as shown in Table 1.13 giving the overall evaluation judgement.

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Table 1.13: Magnitude of landscape and seascape change – Step 2 overall evaluation.

Duration/ reversibility	Step 1 evaluation			
	Negligible	Small	Medium	High
Short-term	Negligible	Small	Small	Medium
Medium-term	Negligible	Small	Medium	Medium
Long-term	Negligible	Small	Medium	Large
Permanent	Small	Medium	Large	Large

1.9.4 Evaluating landscape and seascape significance of effect

1.9.4.1 The level of landscape and seascape effect is evaluated through the combination of receptor sensitivity and magnitude of impact. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is significant or not significant as required by the relevant EIA Regulations. This process is assisted by the matrix in Table 1.14 which is used to guide the assessment.

1.9.4.2 A significant effect would occur where the combination of the variables results in the onshore elements of the Mona Offshore Wind Project having a defining effect on the landscape or seascape receptor, or where changes of a lower magnitude clearly and demonstrably affect a landscape or seascape receptor of particularly high sensitivity. A major loss or irreversible effect over an extensive area of landscape character, affecting nationally or internationally valued elements, characteristics and/or perceptual aspects is likely to be significant.

1.9.4.3 An effect that is not significant would occur where the effect of the onshore elements of the Mona Offshore Wind Project (Onshore) is not defining, and the landscape or seascape receptor continues to be characterised principally by its baseline character. Equally, a small-scale change experienced by a receptor of high sensitivity may not significantly affect the integrity of a designation. Reversible landscape and seascape effects that are of small-scale or affecting lower value receptors are unlikely to be significant.

1.10 Evaluation of significance of effect

1.10.1.1 The significance of an effect upon landscape, seascape and visual receptors is determined by correlating the magnitude of the impact and the sensitivity of the receptor, as presented in Table 1.14.

1.10.1.2 For the purposes of this assessment, any effects with a significance level of substantial or major have been deemed significant in EIA terms. An accumulation of individual moderate effects, for instance experienced during a journey undertaken by the same visual receptor, may also be judged as significant in some circumstances.

1.10.1.3 Effects are assessed as being adverse, neutral or positive. The judgements regarding the significance of effect and that relating to whether an effect is beneficial or adverse are entirely separate. The assessment of whether an effect is positive, neutral or adverse is based on professional judgement having regard to the relevant objective factors.

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Table 1.14: Assessment of significance of effect matrix.

Sensitivity of receptor	Magnitude of impact				
	No change	Negligible	Small	Medium	Large
Negligible	No change	Negligible	Negligible to Minor	Negligible to Minor	Negligible to Minor
Low	No change	Negligible to Minor	Negligible to Minor	Minor	Minor to Moderate
Medium	No change	Negligible to Minor	Minor	Moderate	Moderate to Major
High	No change	Negligible to Minor	Minor to Moderate	Moderate to Major	Major
Very high	No change	Minor	Moderate to Major	Major	Substantial

1.10.1.4 A description of the terms used to describe the level of significance of effect is provided in Table 1.15.

Table 1.15: Definitions of Significance Criteria.

Level of significance	Typical descriptors	
	Landscape and seascape resource	Visual resource
Substantial	Where proposed changes would be uncharacteristic and/or would significantly alter a landscape of exceptional landscape quality (e.g., internationally designated landscapes), or key elements known to the wider public of nationally designated landscapes (where there is no or limited potential for substitution nationally).	Where proposed changes would be uncharacteristic and/or would significantly alter a view of remarkable scenic quality, within internationally designated landscapes or key features or elements of nationally designated landscapes that are well known to the wider public.
Major	Where proposed changes would be uncharacteristic and/or would significantly alter a valued aspect of (or a high quality) landscape/seascape.	Where proposed changes would be uncharacteristic and/or would significantly alter a valued view or a view of high scenic quality.
Moderate	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	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.
No Change	No discernible loss or alteration to landscape/seascape character, features or elements.	No part of the onshore development of the Mona Offshore Wind Project is discernible.

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1.11 Assessment of night-time effects

1.11.1 Introduction

1.11.1.1 The assessment of night-time effects is based on the description of lighting for the Mona Offshore Wind Project, as set out in Volume 1, Chapter 3: Project description of the Environmental Statement.

1.11.1.2 The LVIA onshore study area for the assessment of night-time effects is the same as that for daytime, informed by the likely patterns of human use or activities at night-time. The assessment of night-time effects considers the potential effects upon night-time views, landscape and (where relevant) seascape for the onshore elements of the Mona Offshore Wind Project during its construction, operations and maintenance, and decommissioning phases. Having regard to the proportionality principle, the focus of the night-time assessment is on areas/locations where potential landscape, seascape and visual effects are likely to be experienced by the greatest number of people.

1.11.2 Evaluating night-time effects and significance of effect

1.11.2.1 Whilst the nature of daytime and night-time effects of the onshore elements of the Mona Offshore Wind Project are different, the same criteria are considered appropriate for assessment of its potential night-time effects.

1.11.2.2 As with the assessment of daytime effects, the significance of the potential night-time effects of the onshore elements of the Mona Offshore Wind Project are assessed through a correlation of the landscape, seascape or visual receptor sensitivity and the magnitude of impact that would result from lighting of the onshore elements of the Mona Offshore Wind Project, during the different phases of the project.

1.11.2.3 A significant night-time effect is likely where implementation of the lighting of the onshore elements of the Mona Offshore Wind Project would have a defining influence on a landscape, seascape or visual receptor at night. In contrast, a not significant night-time effect is likely to occur when the effect of lighting is non-defining, and the existing baseline characteristics of the night-time view, area of landscape or seascape continue to provide the defining influence.

1.11.3 Cumulative landscape, seascape and visual effects

Introduction

1.11.3.1 This section should be read in association with section 5.4 cumulative effects assessment (CEA) of Volume 1, Chapter 5: Environmental impact assessment methodology of the Environmental Statement. The CEA is concerned with the potential cumulative effects that may result from incremental changes caused by other reasonably foreseeable proposed projects, plans and activities, that were not present at the time of data collection or survey, considered alongside the project in question. It also considers the in combination and sequential effects of adding the same type of development to the existing situation, e.g., would adding a substation to an area of landscape that already contains substations, change the defining characteristic of the landscape area.

1.11.3.2 GLVIA3 (page 120) defines cumulative landscape and visual effects as those that *'result from additional changes to the landscape and visual amenity caused by the proposal in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.'*

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1.11.3.3 The approach to cumulative assessment adopted in this LVIA and outlined below accords with the recommendations set out in GLVIA3. Both the likely daytime and night-time cumulative effects of the onshore elements of the Mona Offshore Wind Project are considered in the cumulative LVIA.

1.11.4 Tiered approach to the CEA

1.11.4.1 As stated in Volume 1, Chapter 5: Environmental impact assessment methodology of the Environmental Statement, a tiered approach to the CEA has been adopted by identifying a set of appropriate cumulative development scenarios. This approach takes into account the different stages that other planned projects are at in the planning/consenting process and the varying potential of each for proceeding to an operational stage, and hence their differing potential to ultimately contribute to a cumulative impact in conjunction with the Mona Offshore Wind Project.

1.11.4.2 The tiered CEA approach, set out in The Planning Inspectorate Advice Note 17: Cumulative Effects Assessment (2019) has been adopted to assess the complexity of cumulative development scenarios, keeping in mind the principle of proportionality, is summarised as follows:

- Tier 1
 - Under construction
 - Permitted application
 - Submitted application
 - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an on-going impact
- Tier 2
 - Scoping report has been submitted
- Tier 3
 - Scoping report has not been submitted
 - Identified in a relevant development plan
 - Identified in other plans and programmes.

1.11.4.3 Advice Note 17 adds a note to the Tier 1 ‘under construction’ category – *‘Where other projects are expected to be completed before construction of the proposed NSIP and the effects of those projects are fully determined, effects arising from them should be considered as part of the baseline and may be considered as part of both the construction and operational assessment’* (page 6).

1.11.4.4 The development projects selected as relevant to the CEA and included in the LVIA are based upon the results of a screening exercise and informed by consultations with the relevant authorities (see Volume 5, Annex 5.1: Cumulative effects screening matrix of the ES).

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1.11.5 Assessing cumulative seascape/landscape and visual effects

- 1.11.5.1 The same conclusions as to the assessment of sensitivity of the various seascape/landscape and visual receptors are carried forward from the LVIA and applied in the cumulative LVIA. The same method as in the LVIA is used to assess the magnitude and significance of cumulative effect of the Mona Offshore Wind Project, considered in conjunction with each of the cumulative development scenarios, using the tiered approach set out above.

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1.12 References

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Appendix A: Figures

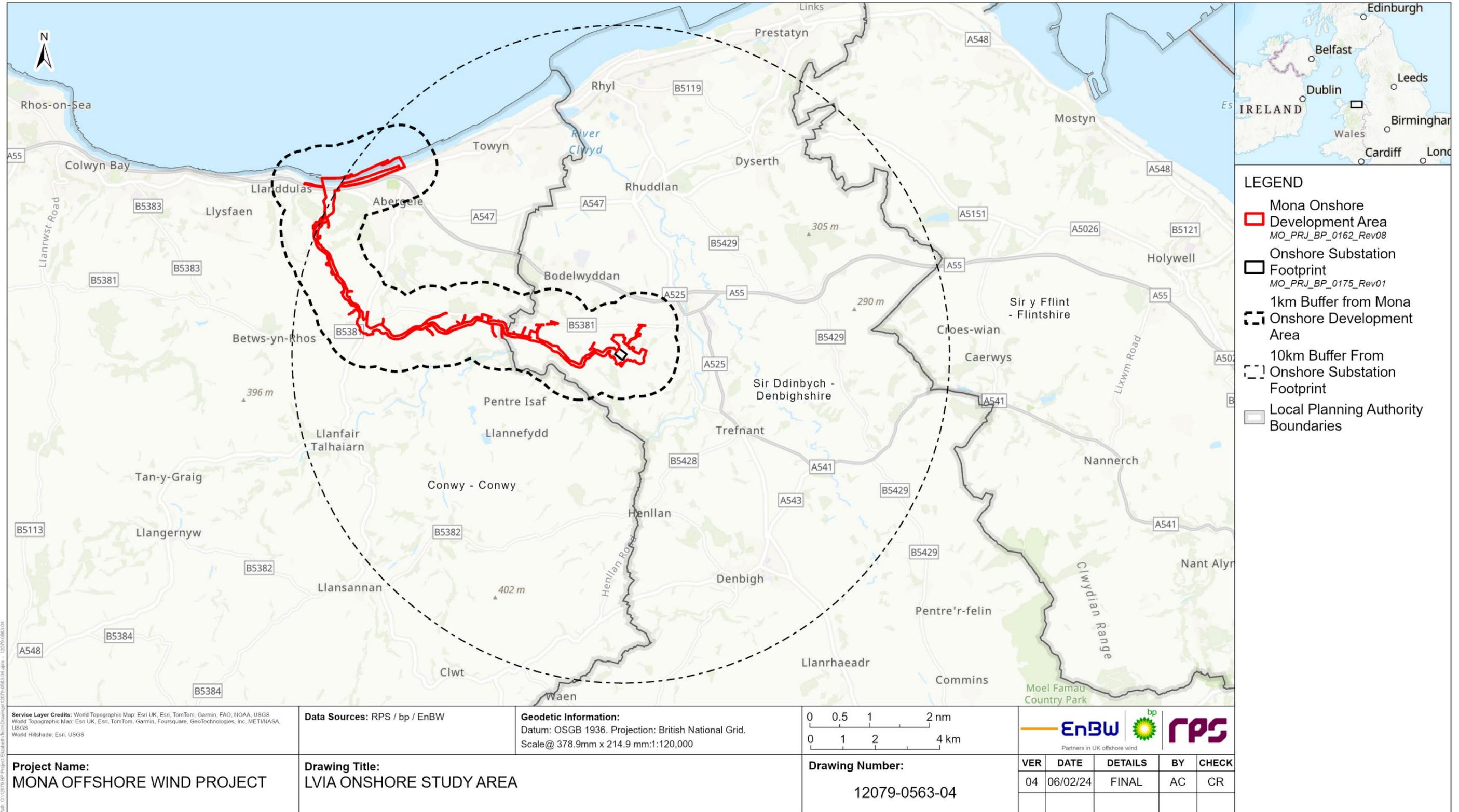


Figure A1: LVIA onshore study area.

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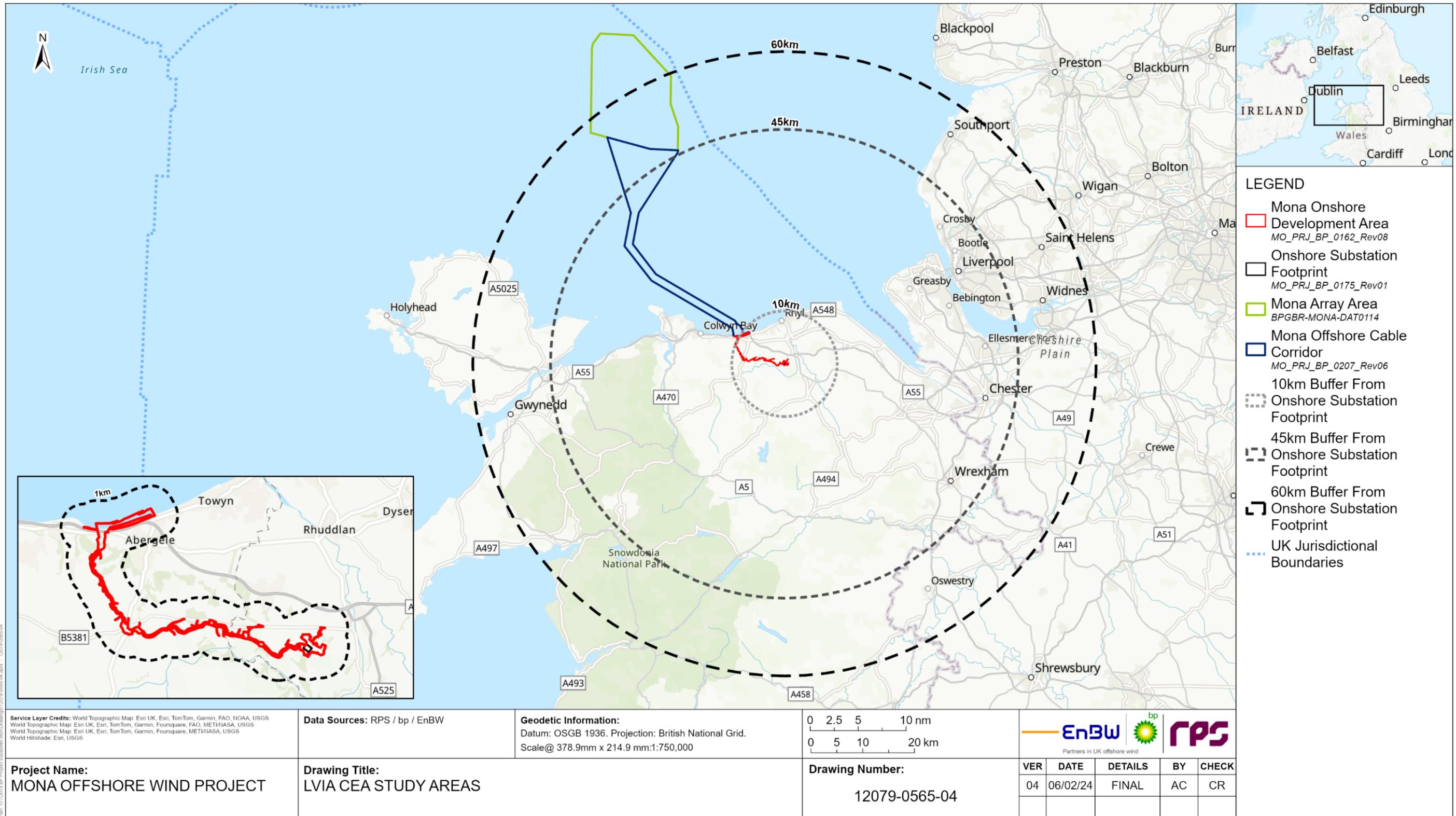


Figure A2: LVIA CEA onshore study areas.

Appendix B: Visual Representations

B.1. Visual representations

B.1.1 Overview

B.1.1.1.1 Zones of Theoretical Visibility (ZTVs) and visualisations (wirelines or wirelines and photomontages) are graphical images produced to assist and illustrate the LVIA and the cumulative assessment. The methodology used for viewpoint photography and photomontages has been produced in accordance with the NatureScot guidance on Visual Representation of Wind Farms, Version 2.2 (2017), the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA 3) (Landscape Institute and IEMA, 2013) and the Landscape Institute Technical Guidance Note on Visual Representation of Development Proposals (2019).

B.1.2 Zone of Theoretical Visibility (ZTV)

- B.1.2.1.1 The ZTVs have been calculated using GIS software to generate a ZTV of Mona Offshore Wind Project to demonstrate the theoretical extent of visibility from any point in the study areas (both onshore and offshore).
- B.1.2.1.2 Within England and Wales the Ordnance Survey Terrain 50 Digital Terrain Model (DTM) was used.
- B.1.2.1.3 The Isle of Man Government 20m DTM product was used to provide coverage of the Isle of Man. An issue was identified with data quality in the Snaefell Mountain area and NASA Shuttle Radar Topography Mission data at 1 arcsecond resolution was used to replace this area.
- B.1.2.1.4 Each source DTM was reprojected to the UTM Zone 30N coordinate system at a 50m sampling using bilinear interpolation.
- B.1.2.1.5 The computer model includes the entire study areas (onshore and offshore) and takes account of atmospheric refraction and the Earth's curvature. The resulting ZTV plots have been overlaid on mapping at an appropriate scale and presented as figures using desktop publishing or graphic design software.
- B.1.2.1.6 Cumulative ZTV plots based on the intervisibility of the Mona Offshore Wind Project (onshore) and other relevant developments within the LVIA onshore study area have also been produced.
- B.1.2.1.7 There are several limitations which should be considered in the interpretation and use of the ZTV, which are as follows:
- The ZTV does not account for the screening effects of existing vegetation or built form.
 - The ZTVs are based on theoretical visibility from 2m above ground level.
 - The onshore substation ZTV does not indicate the decrease in visibility that occurs with increased distance from the onshore substation. The nature of what is visible from 3 km away will differ markedly from what is visible from 10 km distance away, although both are indicated on the ZTV as having the same level of visibility.

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- There is a wide range of variation within the visibility shown on the substation ZTV. For example, an area shown on the ZTV as having visibility of the substation may gain views of a very small part of the upper portion of the substation, or alternatively, a large part of the substation. This can make a significant difference in the effects of the Mona Offshore Wind Project on that area.

B.1.2.1.8 These limitations mean that, while the ZTV is useful as a starting point and aid to assessment, providing an indication of where the Mona Offshore Wind Project will be theoretically visible, it will tend to present a maximum design scenario or over-estimate the actual visibility. The information drawn from the ZTV is checked by field survey observation and interpreted using professional judgement.

B.1.2.1.9 The LVIA includes a Horizontal Angle ZTV to show the horizontal field of view (in degrees) that may be affected by views of the wind turbines.

B.1.3 Baseline Photography

B.1.3.1 Overview

B.1.3.1.1 Once a view has been selected, the location is visited, confirmed, and assessed with the aid of a wireline or similar visualisation in the field. A photographic record is taken to record the view and the details of the viewpoint location and associated data are recorded to assist in the production of visualisations and to validate their accuracy.

The following photographic information is recorded:

- date, time, weather conditions and visual range
- GPS recorded 12 figure grid reference accurate to ~5-10 m
- GPS recorded AOD height data
- use of a fixed 50 millimetre (mm) focal length lens is confirmed
- horizontal field of view (in degrees)
- bearing to Mona Offshore Wind Project.

B.1.3.1.2 The photographs used to produce the photomontages were taken at the locations agreed with the consultees using Canon EOS 5D and 6D Digital SLR and Nikon Z6 cameras, with a fixed lens and a full-frame (35mm negative size) complementary metal oxide semiconductor (CMOS) sensor. The photographs were taken on a tripod with a pano-head at a height of approximately 1.5m above ground level.

B.1.3.1.3 Whilst no two-dimensional image can fully represent the real viewing experience, the visualisation aims to provide a realistic representation of the offshore elements, based on current information and photomontage methodology.

B.1.3.1.4 This includes GLVIA 3, paragraph 8.22 which states the following with respect to photomontages:

'In preparing photomontages, weather conditions shown in the photographs should (with justification provided for the choice) be either:

representative of those generally prevailing in the area; or

taken in good visibility, seeking to represent a maximum visibility scenario when the development may be highly visible'.

B.1.3.1.5 In preparing photomontages for the LVIA, as far as possible in order to represent when the Mona Offshore Wind Project may be most visible (a maximum visibility scenario),

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photographs have been taken in favourable weather conditions during periods of good or better visibility. The time of day that the views were taken was mainly governed by the position of the sun relative to the viewpoint location, and that part of the Mona Offshore Windfarm Project for which an existing view photograph was being taken.

- B.1.3.1.6 Various weather forecasts were checked in advance of the field surveys to ensure favourable weather conditions from the Meteorological Office weather stations at Mona and Rhyl No. 2, which are located in, or close to the LVIA onshore study area (<https://www.metoffice.gov.uk/>). Volume 7, Annex 6.3: Visual baseline technical report - onshore development of the Environmental Statement records atmospheric conditions at the representative viewpoints.

B.1.4 Visualisations

- B.1.4.1.1 Wirelines of the Mona Offshore Wind Project (Onshore) array have been produced in accordance with NatureScot Visual Representation of Windfarms Guidance (NatureScot, 2017) and Landscape Institute (2019) Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals (Landscape Institute, September 2019).
- B.1.4.1.2 Wirelines for the Mona Array Area have been produced to inform the assessment. Wirelines have not been generated for the offshore or onshore substations.
- B.1.4.1.3 A photomontage is a visualisation which superimposes an image of a proposed development upon a photograph or series of photographs. Photomontage is a widespread and popular visualisation technique, which allows changes in views and visual amenity to be illustrated and assessed, as well as being compared and tested with existing views.
- B.1.4.1.4 To create the baseline panorama, individual frames are cylindrically projected and then digitally joined to create a fully cylindrically projected panorama using Adobe Photoshop or PTGui software. This process avoids the wide-angle effect that will result should these frames be arranged in a perspective projection, namely one where the image is not faceted to allow for the cylindrical nature of the full 360° Horizontal Field of View (HfOV) but appears essentially as a flat plane.
- B.1.4.1.5 Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.
- B.1.4.1.6 The baseline photographs and cumulative wireline visualisations shown for each selected viewpoint cover a 90° HfoV (or in some cases, up to 360°), which accords with Visual Representation of Windfarms Guidance (NatureScot, 2017). These are cylindrically projected images and should be viewed flat at a comfortable arm's length.
- B.1.4.1.7 The photographs are also joined to create planar projection panoramas using PTGui software. These are used in the creation of the 53.5° HfoV photomontages.
- B.1.4.1.8 Wireline representations illustrating the Mona Array Area are set within a computer-generated image of the landform. These are used in the LVIA to predict the appearance of the wind turbines and assess the likely visual effect arising. The wirelines are produced with Resoft WindFarm software and are based on OS Terrain 5 DTM. There are limitations in the accuracy of digital terrain model (DTM) data so that landform may not be picked up precisely and may result in wind turbines being more or less visible than is shown. However, the use of OS Terrain 5 minimises these limitations. Where descriptions within the assessment identify the numbers of wind turbines visible, these refer to the illustrations generated (as described above) and therefore the reality on the ground may differ to a minor degree from these impressions.

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- B.1.4.1.9 Daytime visualisations (photomontages and wirelines) show a wind turbine generator model which represents the maximum development scenario of the Mona Offshore Wind Project in the Mona array area. These visualisations allow the potential proportions of the wind turbines to be assessed.
- B.1.4.1.10 Fully rendered photomontages have been produced for the agreed viewpoints using AutoCAD and Sketchup software, to provide an illustrative image of the appearance of the Mona Offshore Wind Project. Regarding the daytime photomontages, modelled representations are combined with the baseline view photographs to create a photorealistic rendered photomontage image of the development.
- B.1.4.1.11 ‘Panoramic photomontages’ presented in the LVIA are produced with a 90° HfoV. This format is based on relevant guidance (Landscape Institute Technical Guidance Note on Visual Representation of Development Proposals, 2019) due to its suitability to encompass the horizontal spread of the Mona array area and show the turbines at a representative scale and distance.
- B.1.4.1.12 The 90° HFoV wirelines and photomontages are prepared using a cylindrical projected image and should also be viewed flat at a comfortable arm’s length. These images are each printed on paper 841 x 297mm (half A1), which provides for a relatively large-scale image.
- B.1.4.1.13 In the wirelines, the wind turbines are shown with the central wind turbines facing the viewer directly, with the full rotor diameter visible at its tallest extent. In the photomontages, the wind turbine rotors are shown with a random position with the central wind turbines facing the viewer directly.
- B.1.4.1.14 Rendering of the wind turbines in the photomontages is as photorealistic as possible to the conditions shown in each viewpoint photograph. There may be some variation in the appearance and visibility of the wind turbines between the viewpoints, as they are rendered to suit the conditions shown in each of the different viewpoint photographs, which unavoidably have some degree of variation in terms of lighting and weather conditions. The key requirement is that the wind turbines need to be rendered with sufficient contrast against the skyline backdrop to illustrate the maximum visibility scenario in each image. Photomontages have been prepared to depict the MDS (i.e. most visible) of how the Mona array area will appear. The full suite of viewpoint photomontages should be viewed to gain an impression of the likely visual effects of the Mona Offshore Wind Project, in the round.

B.1.5 Night-time visualisations

- B.1.5.1.1 The visual effects of the Mona Offshore Wind Project at night have also been assessed. This has been informed by the night-time photomontage visualisations produced from several representative viewpoints, to visually represent aviation and marine navigation lighting at night.

B.1.6 Information on limitations of visualisations

- B.1.6.1.1 The photographs and other graphic material such as wirelines and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what is now, or will be in the future, apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs. Limitations of photomontages are set out further below.

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B.1.6.1.2 The photomontage visualisations of the Mona Offshore Wind Project (and any wind farm proposal) have several limitations when using them to form a judgement on visual impact. These include the following:

- A visualisation can never show exactly what the Mona Offshore Wind Project will look like in reality due to factors such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image.
- The images provided give a reasonable impression of the scale of the wind turbines and the distance to the wind turbines but can never be 100% accurate.
- A static image cannot convey turbine movement, or flicker or reflection from the sun on the turbine blades as they move.
- The viewpoints illustrated are representative of views in the area, but cannot represent visibility at all locations.
- To form the best impression of the impacts of the Mona Offshore Wind Project proposal these images are best viewed at the viewpoint location shown.
- The images must be printed and viewed at the correct size (e.g. 260mm by 820mm).
- The images should be held flat at a comfortable arm's length. If viewing these images on a wall or board at an exhibition, stand at arm's length from the image presented to gain the best impression.
- It is preferable to view printed images rather than view images on screen. Images on screen should be viewed using a normal PC screen with the image enlarged to the full screen height to give a realistic impression.
- There are practical limitations to shooting viewpoint photographs only in very good or excellent visibility and at particular times of day. The photographs shown in the visualisations show the most favourable weather conditions available during photographic survey work.

B.1.7 Technical Methodology – Visualisations

Table B.1.1: Technical Methodology – Visualisations

Category Details	
Photography	
Visualisation Type	Type 4 – where survey of viewpoint locations is not required
Camera location	Established via hand-held Garmin GPS
Level of accuracy of location	1-3m (depending on satellites)
Camera	Canon EOS 5D Mark II and Canon EOS 6D Digital SLR. Full-frame (35mm negative size) CMOS sensor
Lens	50mm fixed f1.4 lens
Tripod	Set to approximately 1.5m. Nodal Ninja panoramic head with Adjust Leveller. Nodal Ninja panoramic head set to take photographs at 20 degree increments

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Category Details	
Photography process	Camera used on fully manual settings. Photographs taken in RAW image format. Bracketed exposures are taken for each view and those depicting the clearest images are selected to prepare the panoramic image
Preparation of panoramic photographs	PTGUI v12.8 is used to join and cylindrically project the images. Adobe Photoshop 2021 used to correct tonal alterations and create an even range of exposure across the photographs so that the individual photographs are not apparent. Planar panoramic images are prepared using Resoft Windfarm software or Hugin Panorama Stitcher
3D Model/Visualisation	
Topographic height data	Ordnance Survey Terrain 5 (5m resolution). Ordnance Survey Terrain 50 (50m resolution)
Use of coordinates in software	Coordinates are brought in from the surveyed GPS coordinates. Positions checked using aerial photography
Markers for horizontal alignment	Existing offshore windfarms and their known coordinates (for the offshore elements of the Mona Offshore Windfarm and tall structures in the landscape, e.g. pylons and church spires for the onshore elements of the Mona Offshore Windfarm Project)
Markers for vertical alignment	Existing offshore windfarms and their known coordinates (for the offshore elements of the Mona Offshore Windfarm) and tall structures in the landscape, e.g. pylons and church spires for the onshore elements of the Mona Offshore Windfarm Project.
Rendering software	Resoft Windfarm v.5.2.5.3 (Wind turbines in wirelines and photomontages). Sketchup or AutoCAD Map 3D 2018 (OSPs, Met Mast and jacket foundations). Autodesk 3ds Max 2018. Visual Nature Studio V 3.10.
Limitations	
Terrain data	There may therefore be local, small-scale landform that is not reflected in the data and subsequently the visualisation but may alter the real visibility of the Mona Offshore Wind Project, either by screening theoretical visibility or revealing parts of the Mona Offshore Wind Project that are not theoretically visible
Movement	Static images are unable to capture the movement within the view or of the WTGs

Appendix C: Landscape and Seascape Value and Susceptibility of Landscapes and Seascapes

C.1. Evaluation Tables

C.1.1 Overview

C.1.1.1.1 Table C1.1 is a proforma valuation table for assessing the qualities and perceptual aspects of landscapes and seascapes.

Table C1.1 Landscape and Seascape Value.

Name of landscape/seascape character area/type/unit				
Landscape/seascape value factor	Lower value	Higher value	Evaluation description	Value/factor judgement
Scenic quality designation	Absence of designation	International or national designation		
Natural heritage	Infrequent or limited presence or evidence of features of ecological, geological, geomorphological or physiographic interest.	High or frequent presence or evidence of features of ecological, geological, geomorphological or physiographic interest.		
Cultural heritage	Infrequent or limited presence or evidence of features of archaeological or historic interest.	High or frequent presence or evidence of features of archaeological or historic interest.		
Landscape/seascape condition	Landscape/seascape is in unfavourable or vulnerable condition.	Landscape/seascape is in favourable or stable/strong condition.		
Cultural associations	No or weak association with notable people, events and the arts or science.	No or weak association with notable people, events and the arts or science that influence perceptions of the landscape.		

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Name of landscape/seascape character area/type/unit				
Distinctiveness	Commonplace elements and features, or character. Lacking distinctive and strongly expressed identity and with no important relationship to a settlement.	Presence of rare elements or features or rare example of landscape character. Landscape with a distinctive and clearly expressed character/identity and/or with an important relationship to a settlement.		
Amenity and recreation	Limited recreational opportunities where experience of landscape is important.	Evidence of many recreational opportunities where experience of landscape is important.		
Perceptual (scenic)	Landscape of limited or no scenic or visual appeal.	Landscape with high scenic or visual appeal.		
Perceptual (wildness and tranquillity)	Strongly influenced by human activities. Absence or limited dark night skies.	Limited influence of human activities. Presence of dark night skies or very limited illumination.		
Function	No or limited identifiable landscape function. No physical or functional link to adjacent national designated landscape.	Readily identifiable landscape function. Evidence of physical or functional link to adjacent national designated landscape.		
Overall judgement of value				

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C.1.1.1.2 Table C1.2 is a proforma table for evaluating susceptibility of a landscape or seascape.

Table C1.2 Landscape and Seascape Susceptibility

Name of landscape/seascape character area/type/unit				
Landscape/seascape susceptibility factor	Lower susceptibility	Higher susceptibility	Evaluation description	Susceptibility/factor judgement
Scale	Large scale landscapes may be less susceptible to change from wind turbines	Small scale landscapes are likely to be more susceptible to change from wind turbines		
Landform/topography	Level or uniform landscapes of smooth profile	Irregular, rugged and complex landscapes.		
Openness	High degree of openness and exposure	Landscape with a secluded, enclosed character		
Land cover	Landscapes characterised by simple or regular landcover.	Landscapes characterised by irregular or complex land cover.		
Pattern and colour	Simple lines, patterns and colour palette.	Complex and variegated pattern and colour.		
Built environment	Strongly influenced by modern buildings, infrastructure and utilities.	Limited influence modern buildings, infrastructure and utilities or presence of mainly traditional or historic forms.		
Views and intervisibility	Limited views to and from the landscape.	Extensive views to and from the landscape.		
Skylines, backdrops and focal points	Low lying landscapes with simple skyline and absence of backdrop.	Undulating, rugged, complex landscapes with distinctive features and focal points with a readily identifiable skyline.		
Overall judgement of susceptibility				