Liverpool Bay CCS Ltd

HYNET CARBON DIOXIDE TRANSPORTATION AND STORAGE PROJECT – OFFSHORE

Environmental Statement
Volume 3: Appendix C3 Seascape, Landscape and Visual Impact Assessment Technical Report

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Seascape, Landscape and Visual Impact Assessment Technical Report

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Glossary

Term	Meaning
The Applicant	Liverpool Bay Carbon Capture and Storage (CCS) Limited (Ltd.)
Bathymetry	The measurement of water depth in oceans, seas and lakes.
Environmental Impact Assessment	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
Magnitude	Scale, extent, and duration of an impact.
Mitigation Measure	Measure which would avoid, reduce, or remediate an impact
Non-statutory stakeholder	Organisations with whom the regulatory authorities may choose to engage who are not designated in law but are likely to have an interest in a proposed development.
Project	The HyNet Carbon Dioxide Transportation and Storage Project.
Project Design Envelope	Also known as the Rochdale Envelope, the PDE concept is routinely utilised in both onshore and offshore planning applications to allow for some flexibility in design options, particularly offshore, and more particularly for foundations and turbine type, where the full details of the project are not known at application submission but where sufficient detail is available to enable all environmental impacts to be appropriately considered during the EIA.
Residual Impact	Residual impacts are the final impacts that occur after the proposed mitigation measures have been put into place, as planned.

Acronyms and Initialisations

Acronym and Initialisations	Description
AONB	Area of Outstanding Natural Beauty
CCS	Carbon Capture Storage
DTM	Digital Terrain Model (bare earth only (i.e. does not include the elevation of surface features))
GLVIA 3	Guidelines for Landscape and Visual Impact Assessment: Third Edition (2013) Landscape Institute and Institute for Environmental Management and Assessment
LVIA	Landscape and Visual Impact Assessment
MCA	Marine Character Area
MHWS	Mean High Water Springs
NLCA	National Landscape Character Areas
NCA	National Character Areas
PoA	Point of Ayr
SCA	Seascape Character Areas
SLVIA	Seascape, Landscape and Visual Impact Assessment
SLVIA Study Area	Seascape, Landscape and Visual Impact Assessment Study Area
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
km	Kilometres (distance)
kV	Kilovolts (Energy)

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1.1 Introduction

This Seascape, Landscape and Visual Impact Assessment (SLVIA) Technical Report provides an assessment of the potential impacts arising from the proposed offshore infrastructure associated with the Hynet Carbon Dioxide Transportation and Storage Project (hereafter referred to as "the Project").

As part of the offshore components of the Project (hereafter referred to as the 'Proposed Development'), the existing offshore natural gas import pipeline from Point of Ayr (PoA) Gas Terminal will be repurposed to become a CO_2 export pipeline and will transport the CO_2 to the newly constructed Douglas Carbon Capture Storage (CCS) platform. From the Douglas CCS platform, CO_2 will be transported along repurposed natural gas pipelines to the Hamilton Main platform for injection into the Hamilton Main reservoir, to the Hamilton North platform for injection into the Hamilton North reservoir, and to the Lennox platform for injection into the Lennox reservoir. The Proposed Development will also require new electrical and fibre optic transmission infrastructure seawards of Mean High Water Spring (MHWS), connecting the PoA Terminal to the offshore infrastructure.

The Proposed Development is located within both Welsh and English territorial waters and will include the following offshore infrastructure and operations;

- Installation of new topside infrastructure on existing wellhead platforms (Hamilton Main, Hamilton North and Lennox) to receive and inject CO_2 into the depleted hydrocarbon reservoirs.
- Construction of a new Douglas Platform to replace the existing Douglas Platform. The new Douglas Platform is to receive CO_2 from the onshore Point of Ayr terminal and subsequent distribution of CO_2 to Hamilton Main, Hamilton North and Lennox platforms.
- Repurposing of existing subsea natural gas supply pipelines for their change of use from hydrocarbon to CO_2 services.
- Installation, including burial, of two submarine 33 kV cables, with integrated fibre optic connections (35 km from the onshore Point of Ayr terminal to the new Douglas platform) including operations within the intertidal/foreshore areas up to MHWS within Welsh waters only.
- Installation, including burial, of new power cables with integrated fibre optic connecting the new Douglas platform with the Hamilton Main, Hamilton North and Lennox platforms.

The primary purpose of this report is to provide an assessment of the likely direct and indirect significant effects of the Proposed Development on landscape, seascape and visual amenity. In particular this report presents the following:

- the existing environmental baseline established from desk studies.
- assumptions and limitations encountered in compiling the environmental information; and
- an assessment of the potential likely significant effects on landscape, seascape, and visual amenity arising from the Proposed Development based on the information gathered and the analysis and assessments undertaken.

Whilst the assessment of likely significant effects on landscape, seascape, and visual amenity are often interlinked, they are assessed and considered separately within this SVLIA report.

1.2 SLVIA Study area

The SLVIA Study Area to examine the potential impacts from the offshore infrastructure covers a 60 km radius measured from the centre of each of the offshore platforms. This has been selected in line with best practice

guidance referenced in section 1.4.1. It was selected as the study area for offshore infrastructure, as it includes seascape and landscape character areas associated with Wales and England. These are considered further within this report. This study area is illustrated in appendix A of this document; Figure 1.

1.3 Consultation

A summary of the key issues raised during consultation activities undertaken to date specific to this Seascape, Landscape and Visual Impacts Assessment is presented in Table 1.1 below.

Table 1.1: Summary Of Key Consultation Issues Raised During Consultation Activities Undertaken For The Proposed Development Relevant To Landscape And Visual Impacts

Date	Consultee and type of response	Issues raised
January 2023	*OPRED – Scoping Opinion Response*	It is advised that details of local landscape and seascape character areas (mapped at a scale appropriate to the Proposed Development's site) and any relevant management plans or strategies pertaining to the area are included. The ES should include assessments of visual effects of the Proposed Development (such as landscape and seascape) together with any physical effects (such as changes in topography).
January 2023	*OPRED – Scoping Opinion Response*	It is advised that the ES includes an assessment of the potential impacts of the Proposed Development on local landscape character using the methodology outlined within the Landscape and Seascape Character assessment (LCA/SCA) which is almost universally used for landscape and visual impact assessment. It is also advised that this assessment includes effects of the special qualities of the designated landscape as set out in the statutory management plan for the area. Guidance for the LCA/SCA and further information relating to National Character Areas is provided in annex 2.

1.4 Methodology

1.4.1 Overview

Whilst there is no specific methodology for the assessment of offshore platform development, the methodology utilised within this SLVIA has been informed by a number of published best practice guidance documents as follows:

- Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, hereinafter referred to as GLVIA 3.
- Scottish Natural Heritage/NatureScot (2012) Offshore Renewables – Guidance on assessing the impact on coastal landscape and seascape, Guidance for Scoping an Environmental Statement.
- Scottish Natural Heritage/NatureScot (2017) Visual Representation of Wind Farms Guidance.

The assessment of effects on landscape and seascape resources and assessment of effects on visual amenity are separate but interconnected. Landscape is defined, in the European Landscape Convention (ELC, Article 1, Reference a), as "*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*". The ELC recognises and defines seascape in a similar manner to that applicable for landscape.

In addition, the NatureScot guidance on offshore renewables offers the following definition of seascape as "*the visual and physical conjunction of land and sea which combines maritime, coast and hinterland character*".

The approach to the assessment of effects on seascape character is the same as that applicable to landscape. Where the methodology below refers to landscape, this is to be interpreted as applicable also to seascape. This accords with the guidance (GLVIA 3).

A clear distinction has been drawn between direct and indirect landscape/seascape and visual effects as described below:

- Direct effects relate to the effects of a proposed development on the physical characteristics and or features of the landscape/seascape and its resulting character and quality (e.g. how the landscape/seascape is affected by the removal or alteration of existing features and the introduction of new features).
- Indirect effects relate to the consequential change to the landscape/seascape resulting from the development.
- Visual effects relate to the effects on views experienced by visual receptors (e.g. residents, footpath users, tourists etc.) and on the visual amenity experienced by those people.

1.4.2 Impact assessment criteria

The criteria for determining the significance of effects is a two-stage process that involves defining the magnitude of the impacts and the sensitivity of the receptors. This section describes the criteria applied in this report to assign levels of magnitude of potential impacts and the sensitivity of the receptors.

The likely seascape, landscape and visual effects of the Proposed Development have been assessed by considering the changes that would occur to the existing seascape, landscape, and visual amenity as a result of the introduction of the offshore infrastructure. The assessment of effects is arrived at by combining judgements concerning the predicted magnitude of impact resulting from the proposed change with judgements concerning the sensitivity of the seascape, landscape or visual receptor (person). It is important to note that significance is determined on a case-by-case basis using professional judgement with the methodology below as a guide and this approach accords with the guidance in GLVIA 3.

The magnitude of impact is arrived at by combining judgements concerning size and scale of the change, the geographic extent of the change and its duration and reversibility. The sensitivity of the seascape, landscape and visual receptors is arrived at by combining judgements concerning susceptibility (ability to accommodate change) and value. This methodology is summarised in Figure 1.1 below and is explained in detail in this section of the report.

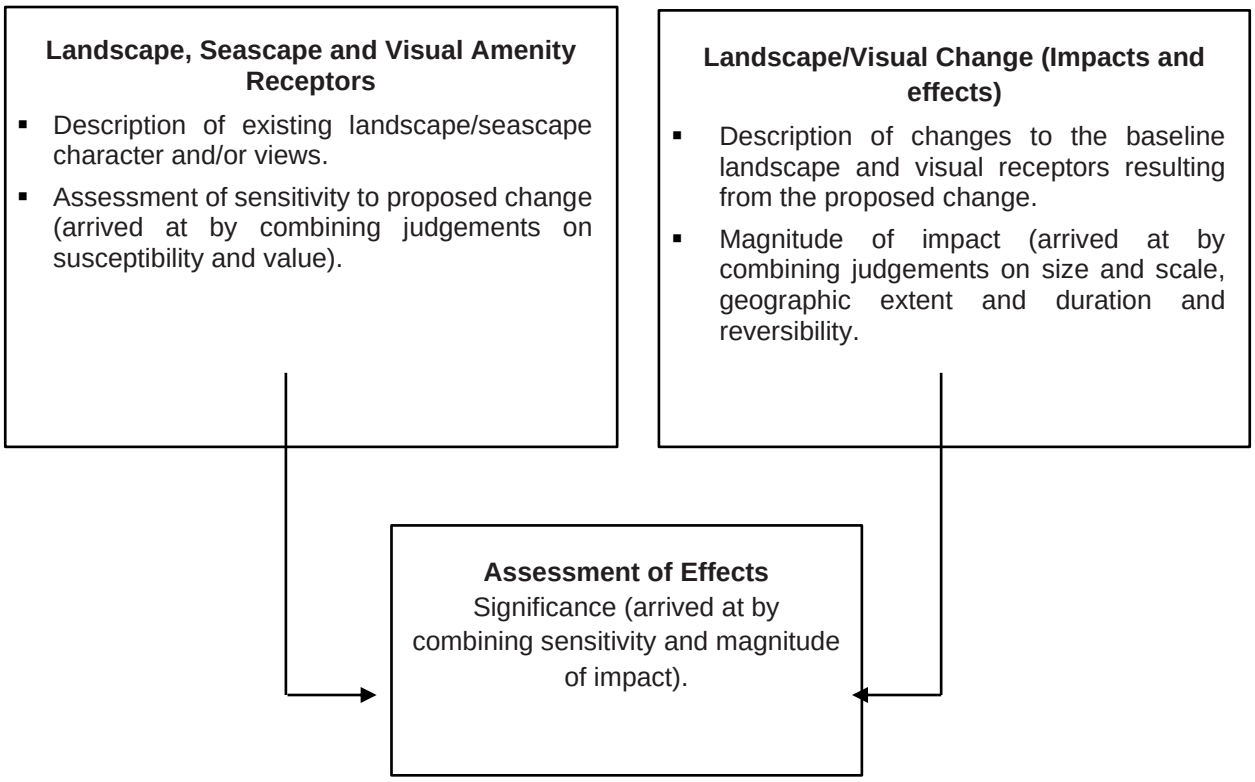


Figure 1.1: Summary Of Assessment Methodology

The assessment considers the potential effects of the Proposed Development upon:

- individual landscape/seascape features and elements;
- landscape and seascape character; and
- visual amenity and the people who view the landscape.

Assessing the significance of an effect is an evidence based process combining professional judgment on the nature of a Landscape, Seascape and Visual Amenity receptor's sensitivity (susceptibility or ability to accommodate change and the value attached to the receptor) and the magnitude of impact resulting from the proposed change (size and scale, geographic extent, duration and reversibility). The detailed methodology is set out below. **Note: Use of the term landscape, in the context of the Proposed Development is to be interpreted as meaning both landscape and seascape.**

1.4.3 Landscape sensitivity

The determination of the sensitivity of the landscape receptor is based upon an evaluation of the elements or characteristics of the landscape likely to be affected. The evaluation reflects such factors as its quality, value, contribution to landscape character and the degree to which the particular element or characteristic can be replaced or substituted.

GLVIA3 at paragraph 5.39 states that "*landscape receptors need to be assessed firstly in terms of their sensitivity, combining judgments of their susceptibility to the type of change or development proposed and the value attached to the landscape".*

Susceptibility is defined by GLVIA3 at paragraph 5.40 as *"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 development without*

due consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies".

The value of a landscape receptor is determined with reference to the presence of relevant designation) and their level of importance. For the purpose of this assessment, landscape value is categorised as:

- **Very High:** Areas of landscape acknowledged as being of national or international importance reflected in designation such as Areas of Outstanding Natural Beauty (AONB). These are of landscape significance within the wider region or nationally.
- **High:** Areas that have a very strong positive character with valued and consistent distinctive features that gives the landscape or seascape unity, richness and harmony. These are of landscape significance within the district.
- **Medium**: Areas that exhibit positive character, but which may have evidence of alteration/degradation or erosion of features resulting in a less distinctive landscape or seascape. These may be of some local landscape significance with some positive recognisable structure.
- **Low:** Areas that are generally negative in character, degraded and in poor condition. No distinctive positive characteristics and with little or no structure. Scope for positive enhancement.

The criteria for defining sensitivity for landscape receptors are broadly defined in accordance with Table 1.2 below.

Table 1.2: Landscape Sensitivity

Sensitivity	Susceptibility	Value
Very High	Exceptional landscape quality, no or limited potential for substitution. Key elements/features well known to the wider public. Little or no tolerance to change.	Nationally/internationally designated/valued landscape, or key elements or features of national/internationally designated landscapes. Little or no tolerance to change.
High	Strong/distinctive landscape character; absence of landscape detractors. Low tolerance to change.	Regionally/nationally designated/valued countryside and landscape features. Low tolerance to change.
Medium	Some distinctive landscape characteristics; few landscape detractors. Medium tolerance to change.	Locally' regionally designated/valued countryside and landscape features. Medium tolerance to change.
Low	Absence of distinctive landscape characteristics; presence of landscape detractors. High tolerance to change.	Undesignated countryside and landscape features. High tolerance to change.
Negligible	Absence of positive landscape characteristics. Significant presence of landscape detractors. High tolerance to change.	Undesignated countryside and landscape features. High tolerance to change.

1.4.4 Magnitude of impact – landscape

The effect on landscape receptors and the overall judgement of the magnitude of landscape impact is based on combining judgements on '*size or scale, the geographic extent of the area influenced, and its duration and reversibility*' (GLVIA3, paragraph 5.48),

The changes caused to landscape and visual receptors as a result of the Proposed Development is evaluated in terms of their size or scale, geographical extent and duration and reversibility. For the purposes of this SLVIA assessment, duration is considered to be short term 0 to 10 years, medium term lasting 10 to15 years, long term lasting 15 to 25 years and permanent lasting more than 25 years.

The criteria for defining magnitude of impact on landscape receptors are defined in in Table 1.3.

Table 1.3: Magnitude Of Landscape Impact

Magnitude of impact	Definition
Large	Total loss or addition or/very substantial loss or addition of key elements/features/patterns of the baseline, (i.e. predevelopment landscape and/or introduction of dominant, uncharacteristic elements with the attributes of the receiving landscape).
Medium	Partial loss or addition of or moderate alteration to one or more key elements/features/patterns of the baseline, (i.e. predevelopment landscape and/or introduction of elements that may be prominent but may not necessarily be substantially uncharacteristic with the attributes of the receiving landscape).
Small	Minor loss or addition of or alteration to one or more key elements/features/patterns of the baseline, (i.e. predevelopment landscape and or introduction of elements that may not be uncharacteristic with the surrounding landscape.
Negligible	Very minor loss or addition of or alteration to one or more key elements/features/patterns of the baseline, (i.e. predevelopment landscape and/or introduction of elements that are not uncharacteristic with the surrounding landscape approximating to a 'no change' situation).
None	No loss, alteration or addition to the receiving landscape resource.

1.4.5 Visual receptor sensitivity

Sensitivity of visual receptors is arrived at by combining judgements concerning their susceptibility to the type of change or development proposed and the value attached to the particular views.

Paragraph 6.32 of the GLVIA refers to the susceptibility of different visual receptors to changes in views and states that susceptibility is mainly a function of "*the occupation or activity of different people experiencing the view at 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*".

Judgements on the overall visual receptor sensitivity are provided in

Table 1.4 below. The sensitivity of the visual receptor is based on combining judgements on the sensitivity of the human receptor (for example resident, commuter, tourist, walker, recreationist or worker, and the numbers of viewers affected) and judgements on the visual resource value (for example views experienced from residential properties, workplace, leisure venue, local beauty spot, scenic viewpoint, commuter route, tourist route or walkers' route).

The criteria for defining sensitivity for visual receptors are defined in Table 1.4 below.

Table 1.4: Visual Receptor Sensitivity

Sensitivity	Viewer susceptibility	Value of views
Very High	Observers, drawn to a particular view, including those who have travelled to experience the views.	Views of remarkable scenic quality, of and within internationally designated landscapes or key features

Sensitivity	Viewer susceptibility	Value of views
	Little or no tolerance to change.	or elements of nationally designated landscapes that are well known to the wider public. Little or no tolerance to change.
High	Observers enjoying the countryside from their homes or pursuing quiet outdoor recreation are more sensitive to visual change. Little tolerance to change.	Views from residential property. Public rights of way, National Trails, Long distance walking routes and nationally designated countryside/landscape features with public access. Low tolerance to change.
Medium	Observers enjoying the countryside from vehicles on quiet/promoted routes are moderately sensitive to visual change. Medium tolerance to change.	Views from local roads and routes crossing designated countryside/landscape features and 'access land' as well as promoted paths. Medium Tolerance to change.
Low	Observers in vehicles or people involved in frequent or infrequent repeated activities are less sensitive to visual change. High tolerance to change.	Views from workplaces, main roads and undesignated countryside/landscape features. High tolerance to change.
Negligible	Observers in vehicles or people involved in frequent or frequently repeated activities are less sensitive to visual change. High tolerance to change.	Views from within and of undesignated landscapes with significant presence of landscape detractors. High tolerance to change.

1.4.6 Magnitude of impact - visual

The criteria for defining the magnitude of impact on visual receptors are defined in Table 1.5 below.

Table 1.5: Magnitude Of Visual Impact

Magnitude of impact	Definition
Large	Complete or very substantial change in view dominant involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, (e.g. through removal of key elements).
Medium	Moderate change in view: which may involve partial obstruction of existing view or partial change in character and composition of baseline, (i.e. predevelopment view through the introduction of new elements or removal of existing elements). Change may be prominent but would not substantially alter scale and character of the surroundings and the wider setting. Composition of the view would alter. View character may be partially changed through the introduction of features which, though uncharacteristic, may not necessarily be visually discordant
Small	Minor change in baseline, (i.e. predevelopment view - change would be distinguishable from the surroundings whilst composition and character would be similar to the pre change circumstances).
Negligible	Very slight change in baseline, (i.e. predevelopment view - change barely distinguishable from the surroundings). Composition and character of view substantially unaltered.
None	No alteration to the existing view

1.4.7 Significance of effects

The purpose of this SLVIA is to determine, in a transparent way, the likely significant seascape, landscape and visual effects of the Proposed Development.

GLVIA3 identifies that "…… *a final judgment is made about whether or not each effect is likely to be significant. There are no hard and fast rules about what effects should be deemed 'significant' but LVIAs should always distinguish clearly between what are considered to be significant and non-significant effects"*.

Significance can only be defined in relation to each particular development and its specific location. The relationship between receptors and effects is not typically a linear one. It is for each SLVIA to determine how judgements about receptors and effects should be combined to derive significance and to explain how this conclusion has been arrived at.

The identification of significant effects would not necessarily mean that the effect is unacceptable in planning terms. What is important is that the likely effects on the landscape and visibility are transparently assessed and understood in order that the determining authority can bring a balanced, well informed judgement to bear when making the planning decision.

The significance of effects on landscape, views and visual amenity have been judged according to a six point scale: Substantial, Major, Moderate, Minor, Negligible or None as presented in Table 1.6 below, which contains a description of the significance of effect criteria.

Table 1.6: Significance Of Effect Criteria

Significance	Landscape Resource	Visual Resource
None/Nil	Where the Proposed Development would not alter the landscape character of the area.	Where the Proposed Development would retain existing views.
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.
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.
Moderate	Where proposed changes would be noticeably out of scale or at odds with the character of an area.	Where proposed changes to views would be noticeably out of scale or at odds with the existing view.
Major	Where proposed changes would be uncharacteristic and/or would significantly alter a valued aspect of (or a high quality) landscape.	Where proposed changes would be uncharacteristic and/or would significantly alter a valued view or a view of high scenic quality.
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.

The significance of the effect upon landscape, seascape and visual amenity is determined by correlating the magnitude of the impact and the sensitivity of the receptor. Where a range of significance of effect is presented in Table 1.7, the final assessment for each effect is based on calculated assessment and professional judgement.

For the purposes of this assessment, any effects with a significance level of Substantial or Major to Substantial are regarded as being significant. For those effects indicated as being of 'Moderate' or 'Moderate to Major' significance, the assessor has exercised professional judgement in determining if the effect is considered to

be significant, having regard for the specific characteristics of the development and the baseline conditions. Effects of 'Minor to Moderate' and lesser significance have been identified within the assessment, though are not considered significant.

Table 1.7: Matrix Used For The Assessment Of The Significance Of The Effect

		Magnitude of impact				
Sensitivity of		No change	Negligible	Small	Medium	Large
	Negligible	None	Negligible	Negligible to Minor	Negligible to Minor	Minor
	Low	None	Negligible to Minor	Negligible to Minor	Minor	Minor to Moderate
	Medium	None	Negligible to Minor	Minor	Moderate	Moderate to Major
	High	None	Minor	Minor to Moderate	Moderate to Major	Major to Substantial
	Very High	None	Minor	Moderate to Major	Major to Substantial	Substantial

A conclusion that an effect is 'significant' should not be taken to imply that the Proposed Development is unacceptable. Significance of effect needs to be considered with regard to the scale over which it is experienced and whether it is beneficial or adverse.

1.4.8 Visualisations

1.4.8.1 Zone of Theoretical Visibility (ZTV)

The ZTV is the area within which a proposed development is theoretically visible, and therefore where it may have an effect upon seascape and/or landscape character and visual amenity.

ZTVs have been generated for both the existing and proposed offshore platforms (refer appendix A; Figure 1 and Figure 2), by using industry standard software (Windfarm by ReSoft), to demonstrate the areas from which it may be theoretically possible to see offshore elements. The ZTVs depict theoretical visibility, which are areas within which a development may be visible and is based on a bare earth scenario. However, the Proposed Development may not actually be visible in reality due to localised screening which is not represented by the Digital Terrain Model (DTM) such as vegetation, built structures and minor topographical changes.

The ZTV associated with the offshore elements of the Proposed Development has been based on the tallest element or structure associated with each of the reconfigures platforms and is therefore representative of the tallest element of the Proposed Development.

1.4.8.2 Wirelines and photomontages

Visualisations (wirelines) of the existing platform arrangements and those proposed as part of the Proposed Development have been generated to illustrate potential visibility of the Proposed Development from selected viewpoint locations. All of the wirelines generated depict both the existing platform arrangement and the platform arrangement associated with the Proposed Development in order to illustrate potential variations in visibility from each of the selected viewpoints.

Whilst there is no specific guidance for the production of the wirelines associated with offshore platform development, the production of the wirelines and the layout of the figures has been carried out in accordance with current guidance available from NatureScot (formerly Scottish Natural Heritage (SNH)), Visual Representation of Wind Farms (H+M and Envision, 2006). For each viewpoint, 90 degree field of view wirelines are included to illustrate the existing and proposed visual baseline associated with the existing and proposed platform arrangements.

1.4.9 Data limitations

1.4.9.1 Zone of Theoretical Visibility

The ZTV's provided, have been generated using industry standard software (Windfarm by ReSoft) to demonstrate the areas from where it may theoretically be possible to see offshore elements associated with the Proposed Development.

There are limitations in this theoretical production, and these should be considered in the interpretation and use of the ZTV:

- the ZTV illustrates the 'bare ground' situation, and does not take into account the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility;
- the ZTVs are based on theoretical visibility from 2 m above ground level;
- the 60 km radius ZTVs are based on a 30 m data grid DTM; and
- the ZTVs provided do not indicate the decrease in visibility that occurs with increased distance from the offshore infrastructure. The nature of what is visible from 5 km away will differ markedly from what is visible from 20 km away, although both are indicated on the ZTVs as having the same level of visibility.

These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the offshore infrastructure may be theoretically visible.

1.5 Desktop study

Information on Seascape and Landscape Character Areas that lie within the SLVIA Study Area was collected through a detailed desktop review of existing studies and datasets. These are summarised at Table 1.8 below.

Table 1.8: Summary Of Key Desktop Reports

Title	Source	Year	Author
Seascape Character Assessment for the North West Inshore and Offshore marine plan areas	Marine Management Organisation	2018	Land Use Consultants (LUC)
Marine Character Areas	Natural Resources Wales	2022	
National Character Area Profiles	Natural England	2014	
National Landscape Character Areas (NLCA)	Natural Resources Wales	2014	
Wales Environmental Information Portal	Natural Resources Wales		

1.6 Baseline environment

Information on seascape, landscape and visual resources within the SLVIA Area was collected through a detailed desktop review of existing studies and datasets summarised in Table 1.8 above.

The baseline seascape, landscape and visual resources considered in this assessment include landscape designations, seascape character and landscape character areas identified from review of the above reports in combination with both existing theoretical visibility mapping (refer appendix 1; Figure 1) and predicted theoretical visibility associated with the Proposed Development (refer appendix 1; Figure 2).

1.6.1 Designated landscapes

Designated sites identified for the seascape, landscape and visual assessment and which fall within the SLVIA Study area identified in Table 1.9 below.

Table 1.9: Designated Landscape

Designated Landscape
National Parks
Snowdonia National Park
Areas of Outstanding Natural Beauty (AONB)
Clwyd Range and Dee Valley AONB
Anglesey AONB
Heritage Coast
Great Orme
North Anglesey Coast

Following a review of the ZTV mapping associated with the current offshore infrastructure, the Proposed Development infrastructure and the Landscape Designations identified it is considered that none of the above identified Landscape Designations are predicted to experience significant indirect effects, as areas predicted to experience effects because of the Proposed Development are shown to experience indirect effects associated with the current offshore infrastructure. Consequently, none of the above identified Designated Landscapes are considered further within this assessment.

1.6.2 Landscape character areas - Wales

Table 1.10 below lists the National Landscape Character Areas (NLCA) as defined by Natural Resources Wales which fall within the SLVIA Study area. The table also shows the relationship of the NLCAs identified to the landscape designations identified in Table 1.9 above.

Table 1.10: National Landscape Character – Wales (Wales Environmental Information Portal)

National Landscape Character Area	Designation
Snowdonia (NLCA06)	Snowdonia National Park
Conwy Valley (NLCA07)	No Designation identified
North Wales Coast (NLCA08)	Great Orme NRW Heritage Coast on western extent of NLCA
Rhos (NCLA09)	Small portions covered by Clwyd Range and Dee Valley AONB
Vale of Clwyd (NLCA11)	No Designation identified
Clwydian Range (NLCA12)	Large areas covered by Clwyd Range and Dee Valley AONB
Deeside and Wrexham (NLCA13)	No Designation identified

Following a review of the ZTV mapping associated with the current offshore infrastructure, the Proposed Development infrastructure and the Landscape Character Area mapping (appendix A; Figure 1, Figure 2 and Figure 4) it is considered that the following NLCAs will experience indirect effects associated with the Proposed Development;

- North Wales Coast (NLCA08);

- Vale of Clwyd (NLCA11); and
- Clwydian Range (NLCA12).

Remaining NLCAs are judged not to experience significant indirect effects, as areas predicted to experience indirect effects as a result of the Proposed Development are shown to experience indirect effects associated with the current offshore infrastructure. Consequently, the remaining, identified NLCAs are not considered further within this assessment.

1.6.3 Landscape character areas – England

Table 1.11 below lists the National Character Areas (NCA) as defined by Natural England which fall within the SLVIA Study area. The table also shows the relationship of the NCAs identified to the landscape designations identified in review of the NCA descriptions.

Table 1.11: National Character Areas – England (Natural England)

National Character Area	Designation
Morecambe Coast and Lune Estuary (NCA31)	This NCA includes part of the Arnside and Silverdale AONB. (1 per cent of the NCA area).
Lancashire and Amounderness Plain (NCA32)	Less than 1 per cent of the NCA (9 ha) is within the Forest of Bowland AONB
Bowland Fringe and Pendle Hill (NCA33)	Less than 1 per cent of the NCA (181 ha) falls within the Yorkshire Dales National Park.
Lancashire Valleys (NCA35)	Five per cent of the NCA lies within the Forest of Bowland AONB
Sefton Coast (NCA57)	No Designation identified
Merseyside Conurbation (NCA58)	No Designation identified
Wirral (NCA59)	No Designation identified

Following a review of the ZTV mapping associated with the current offshore infrastructure and the Proposed Development infrastructure it is considered that none of the above identified NCAs are predicted to experience significant indirect effects, as NCA areas predicted to experience indirect effects as a result of the Proposed Development are shown to experience indirect effects associated with the current offshore infrastructure. Consequently, the above NCAs are not considered further within this assessment.

1.6.4 Seascape character areas – Wales

Table 1.12 below lists the Marine Character Areas (MCA) as defined by Natural Resources Wales, which fall within the SLVIA Study area. The table also shows the relationship of the MCAs identified to the landscape designations identified in review of the NLCA descriptions.

Table 1.12: Marine Character Areas – Wales (Wales Environmental Information Portal)

Marine Character Area	Designation
Dee Estuary (Wales) (MCA 01)	All of the Dee Estuary, including Gronant Dunes and Talacre Warren, is designated as SPA, SAC, Ramsar and SSSI.
Colwyn Bay & Rhyl Flats (MCA 02)	Liverpool Bay SPA Menai Strait and Conwy Bay SAC in the west

Marine Character Area	Designation
Red Wharf & Conwy Bays (MCA 03)	SPA, SAC and SSSI designations
North Wales Open Waters (MCA 04)	No Designation identified

Following a review of the ZTV mapping associated with the current offshore infrastructure and the Proposed Development infrastructure (appendix A; Figure 1, Figure 2 and Figure 5) it is considered that all the identified MCAs will experience theoretical visibility of new infrastructure associated with the Proposed Development which is similar in extent to that experienced currently for the operational offshore infrastructure associated with existing Douglas, Hamilton Main, Hamilton North and Lennox platforms.

It is noted that the New Douglas Platform lies within the Seascape identified as MCA 04, and whilst this Seascape is not predicted to experience any increase in theoretical visibility associated with the Proposed Development, it has also been carried forward for assessment;

- North Wales Open Waters (MCA 04).

1.6.5 Seascape character areas - England

Table 1.13 below lists the Marine Character Areas (MCA) as defined by Natural England, which fall within the SLVIA Study area. The table also shows the relationship of the MCAs identified to the landscape designations identified in review of the NCA descriptions.

Table 1.13: Marine Character Areas – England (Natural England)

Marine Character Area	Designation
Walney Coastal Waters and Duddon Estuary (MCA32)	The Lake District National Park and World Heritage Site adjoins the Duddon Estuary, on the northern edge of the MCA
Morecambe Bay (MCA33)	The Lake District National Park and World Heritage Site adjoins, and slightly overlaps in several places, the river mouths on the northern edge of the MCA. Warton Sands, on the eastern side of the Bay, lies within the Arnside and Silverdale AONB, which includes the coastline between Carnforth and Milnthorpe
Blackpool Coastal Waters and Ribble Estuary (MCA 34)	No Designation identified
Inner Liverpool Bay (MCA 35)	No Designation identified
Dee and Mersey Estuaries and Coastal Waters (MCA 36)	The adjacent coastline includes the Liverpool Maritime Mercantile City World Heritage Site.
Irish Sea South (England) (MCA 38)	At its closest, this offshore MCA is around 8.5 km from the western edge of the Lake District National Park and World Heritage Site, and 5 km from the cliffs of the St Bees Heritage Coast.

Following a review of the ZTV mapping associated with the current offshore infrastructure and the Proposed Development infrastructure (appendix A; Figure 1, Figure 2 and Figure 5) it is considered that all the identified MCAs will experience theoretical visibility of new infrastructure associated with the Proposed Development which is similar to that experienced currently for the operational offshore infrastructure associated with the existing Douglas, Hamilton Main, Hamilton North and Lennox platforms.

It is noted that the existing Lennox Platform lies within the Seascape identified as MCA 34 and the existing Hamilton and Hamilton North Platforms and the New Douglas Platform lie within the Seascape identified as

MCA 38 and whilst these Seascapes are not predicted to experience any increase in theoretical visibility associated with the Proposed Development, they have been carried forward for assessment;

- Blackpool Coastal Waters and Ribble Estuary (MCA 34); and
- Irish Sea South (England) (MCA38).

1.7 Assessment of significant effects

The potential impacts associated with the construction, operational and maintenance and decommissioning phases of the Proposed Development have been assessed in the following seascape, landscape and visual impact assessment tables contained within the following sections.

In order to avoid repetition, an assessment of effects predicted to occur during the construction phase, operational and maintenance and decommissioning phases of the Proposed Development are included within the following assessments.

1.7.1 Landscape effects

As described previously the landscape baseline has been informed by the published descriptions for national landscape types documented Table 1.8 and the following assessment tables have been provided for those landscape character areas, falling within the SLVIA Study Area, which are judged to experience increased theoretical visibility of the Proposed Development, following interrogation of the ZTVs.

Table 1.14: North Wales Coast (NLCA 08)

North Wales Coast (NLCA 08)	
Sensitivity	The Proposed Development is located approximately 24 km, north from the shoreline at Prestatyn, which is located within this NLCA. Key characteristics which have informed an understanding of the susceptibility of this landscape to the Proposed Development are described as: • Carboniferous limestone hills and coastal headlands - resulting in distinctive light coloured rocky escarpments with cliffs and scree, including most prominently Great Orme's Head, with characteristic clints, grykes, stepped crags and scree slopes. • The mouth of the Vale of Clwyd – a broad flat coastal plain centred on Rhyl, including the small estuary of the River Clwyd, including a network of medium scale pastoral fields of regular pattern, with ditches and, to a lesser extent mixed, managed hedgerows, and occasionally interspersed with small stands of mixed farm woodland. • Seaside resort towns - urban development and arterial road and railway routes along coast, constricted in places by topography and rising hills. Much 19th century development with more recent suburbia. Some caravan parks and holiday camps between Llanddulas to Prestatyn coalesce settlements. • A generally manmade coastal edge – promenades, sea walls, groynes, rock armour and other forms of protecting the coastal edge run for most of the length of the coastline. • Rhuddlan Castle is strategically sited at a crossing point over the Clwyd, at what was once the eastern boundary of the Medieval kingdom of Gwynedd. • A number of historic parklands lie within the area, while the estate architecture of Gwrych Castle and wooded parkland is a locally prominent feature. • Iconic image of historic Llandudno and it's famed natural setting – between two rocky headlands, with its pier, grand sweeping promenade and Victorian building façades, arguably the finest of their type in Wales, the town is known as the 'Queen of resorts' and is known nationally for seaside holidays. • Views north from coastal areas includes visibility of the operational offshore windfarm at Rhyl Flats with further operational turbines perceived beyond This distinct coastal landscape is characterised by activity and bustle, though there are more quiet and tranquil areas, even in and amongst the sea side developments, for example, at Gronant in the east of the area, the dunes remain undeveloped. South of Prestatyn the foothills of the

North Wales Coast (NLCA 08)	
	Clwydian Hills are steep sided, from which panoramic views across the area are possible. Both the A55 Expressway and the Chester to Holyhead railway traverse the area, with much night lighting along the former, along the coastal edge, and from the towns. At Llandudno, the combination of the historic seaside resort town and its dramatic open limestone and coastal setting has created a very distinctive sense of place; the Great Orme and Little Orme reach the coastline abruptly, as bare, windswept, and highly craggy headlands. Generally, the hills and high ground that provide the backdrop for the resort towns are wooded and enclosed, but have areas of scrub and open ground, revealing limestone rock exposures. Inland, the area is hilly, rural and tranquil in complete contrast to the busy coastal edge. Rolling hills, further limestone outcrops, and a number of small valleys provide much seclusion and shelter only a short distance from the coast. This inland landscape also provides a significant buffer and transition zone with the appreciably more rural and quieter landscape of the Rhos Hills to the south. The operational limestone quarries at Llanddulas are relatively hidden from view, though the loading jetty on the coast adjacent is a prominent feature. The coastal areas are indirectly affected by operational offshore turbines associated with Rhyl Flats, which form a distinct feature on the distant horizon, offshore infrastructure associated with the existing Douglas, Hamilton Main, Hamilton North and Lennox platforms is difficult to perceive in northern views. Taking account of the above characteristics and the influence of existing manmade features within the SLVIA Study Area, the susceptibility of the landscape to the type of development proposed is judged to be medium. The overall value of the landscape is considered to be high. Based on the susceptibility and value attached to this landscape, the overall sensitivity is judged to be medium.
Magnitude of Change – Construction Phase	Sea based traffic and activities associated with the Proposed Development will not be easily perceived from within those areas predicted to experience theoretical visibility associated with the Proposed Development due to screening provided by existing, localised topographical changes, intervening built form and vegetation cover. The predicted magnitude of change associated with the construction of the offshore infrastructure is considered to be No Change to the character of the landscape.
Magnitude of Change – Operational and maintenance phase	Predicted theoretical visibility of the Proposed Development is similar in extent to that associated with the existing offshore infrastructure, and existing landscape features including vegetation cover and topographical changes reduce the visibility of coastal areas from within such locations. During the operational and maintenance phase of the Proposed Development, the Proposed Development will not be easily discernible in northern views predicted to experience visibility. The predicted magnitude of change associated with the operational and maintenance phase of the Proposed Development is considered to be No Change to the character of the landscape.
Magnitude of Change – Decommissioning phase	Sea based traffic and decommissioning activities, will be similar in nature to the construction phase activities and are considered not to be visible in northern views from areas predicted to experience theoretical visibility associated with the Proposed Development, due to intervening topographical changes and extensive vegetation cover. The predicted magnitude of change associated with the decommissioning phase is considered to be No Change.
Significance of Effect during Construction Phase	No Change
Significance of Effect during operational and maintenance phase	No Change
Significance of effect during decommissioning phase	No Change

Table 1.15: Vale of Clwyd (NLCA 11)

Vale of Clwyd (NLCA 11)	
Sensitivity	The Proposed Development is located approximately 30 km, north from the northern boundary associated with this NLCA. Key characteristics which have informed an understanding of the susceptibility of this landscape to the Proposed Development are described as: • A broad agricultural vale – located between adjacent upland areas. • Distinctive line of hills forming the eastern boundary, also forming an upland-lowland boundary, following a geological fault line. • Arable and pasture lands with well managed hedgerows. • Many hedgerow and parkland trees and some woodland blocks. • Castles and towns – reflect historic strategic importance of main three towns of Denbigh and Ruthin and ecclesiastical importance of St Asaph cathedral. This broad, fertile valley extends from Llanelidan in the south to St Asaph in the north, is bounded by the abruptly rising Clwydian Range of hills to the east, and by the gently rising landscape of Rhos Hills to the west. It is drained by the Clwyd and its tributaries, including the Clywedog, Wheeler and Elwy. The area includes the three historic towns of St Asaph, with its cathedral, and Denbigh and Ruthin, both of which are associated with castles. The area is largely rural and agricultural, whose patchwork of mixed pastures and arable fields are enclosed with mature and often well managed hedgerows. There are many hedgerow trees and in places parkland trees. Taking account of the above characteristics and the influence of existing manmade features within the SLVIA Study Area, the susceptibility of the landscape to the type of development proposed is judged to be medium. The overall value of the landscape is considered to be high. Based on the susceptibility and value attached to this landscape, the overall sensitivity is judged to be high.
Magnitude of Change – Construction Phase	Sea based traffic and activities associated with the Proposed Development will not be readily discernible from within those areas predicted to experience theoretical visibility of the Proposed Development. The predicted magnitude of change associated with the construction of the offshore infrastructure is considered to be No Change to the character of the landscape.
Magnitude of Change – Operational and maintenance phase	Theoretical visibility associated with the Proposed Development is limited in extent, with visibility predicted to be experienced on land to the south and west of St Asaph, which currently experience theoretical visibility of existing offshore infrastructure. Such areas are well vegetated, with field boundaries well defined by hedgerows, hedgerows with trees and scattered woodland planting, which screens coastal views from such locations. During the operational and maintenance phase of the Proposed Development, the Proposed Development will not be easily discernible in northern views from lands predicted to experience visibility of the Proposed Development. The predicted magnitude of change associated with the operational and maintenance phase of the Proposed Development is considered to be No Change to the character of the landscape.
Magnitude of Change – Decommissioning phase	Sea based traffic and decommissioning activities, will be similar in nature to the construction phase activities and are considered not to be perceived in northern views from areas predicted to experience theoretical visibility of the Proposed Development, due to intervening topographical changes and extensive vegetation cover. The predicted magnitude of change associated with the decommissioning phase is considered to be No Change.
Significance of Effect during Construction Phase	No Change
Significance of Effect during operational and maintenance phase	No Change

Vale of Clwyd (NLCA 11)	
Significance of effect during decommissioning phase	No Change

Table 1.16: Clwydian Range (NLCA 12)

Clwydian (NLCA 12)	
Sensitivity	The Proposed Development is located approximately 26 km, north of the northern boundary associated with this NLCA. Key characteristics which have informed an understanding of the susceptibility of this landscape to the Proposed Development are described as: • Rounded, heather clad open hills in two main groups, a northern chain rising to Model Famau (554m), a southern chain rising to Moel y Gamelin (577m). Formed by sandstones and argillaceous rocks and shales. • Narrow, minor river valleys dissect the hills. • Hedgerows and numerous hedgerow trees - improved hill sheep grazing and lowland pasture. • Quarries and mining heritage – a number of large limestone quarries in the east and slate quarries in the south near Horseshoe Pass. Extensive evidence of old mineral workings on Halkyn Mountain. • Historic parks - A number of historic parks and gardens occur within the area, notably Bryngwyn and Penbedw. The most extensive upland areas in the Clwydian Range are centred on Moel Famau at 554m altitude and Moel y Gamelin at 577m altitude. The Jubilee Tower on the summit of Moel Famau, and the Moel y Parc radio transmission mast above the Vale of Clwyd are very distinctive hilltop landmarks. The northern half of the landscape character area has been designated as an AONB. By contrast, some peripheral hills to the north (Graig Fawr), east (Halkyn Mountain, Eyrys) and south (Eglwyseg Mountain), exhibit distinctive limestone characteristics, with cliffs and rock exposures in places. The area between the two main groups of heather clad hills, the vale of Alyn between Mold and Llandegla, also exhibits landform and land cover that has been shaped by limestone exposures. The results are remarkably distinctive landscapes. Elevated parts feel more remote and upland in character than their altitude or extent alone would suggest. Nevertheless, Bryn Alyn at 408m altitude, for example, is sufficiently elevated to provide prospects of the Wirral peninsula and Merseyside beyond. In the upper vale of Alyn, lines of trees and field boundaries follow the complex lines of rock exposure, producing a very small scale, intimate, enclosed farmed landscape with small pastures and woodland. Operational single turbines present within the landscape, forming localised points of visual interest. Views northwards towards the coast often not containing visibility of seascape due to intervening landform and extensive vegetation cover. Taking account of the above characteristics and the influence of existing manmade features within the SLVIA Study Area, the susceptibility of the landscape to the type of development proposed is judged to be medium. The overall value of the landscape is considered to be high. Based on the susceptibility and value attached to this landscape, the overall sensitivity is judged to be high.
Magnitude of Change – Construction Phase	Sea based traffic and activities associated with the Proposed Development will not be visible from within those areas predicted to experience theoretical visibility associated with the Proposed Development due to the combination of intervening topographical changes and the well vegetated agricultural landscape. The predicted magnitude of change associated with the construction of the offshore infrastructure is considered to be No Change to the character of the landscape.

Clwydian (NLCA 12)	
Magnitude of Change – Operational and maintenance phase	Theoretical visibility of the Proposed Development is predicted to be experienced on land which currently experiences theoretical visibility of the existing offshore infrastructure. Areas predicted to experience theoretical visibility of the Proposed Development are generally well vegetated, with field boundaries well defined by hedgerows, hedgerows with trees and scattered woodland planting, which screens coastal views from such locations. During the operational and maintenance phase of the Proposed Development, the Proposed Development will not be discernible in northern views from lands predicted to experience visibility. The predicted magnitude of change associated with the operational and maintenance phase of the Proposed Development is considered to be No Change to the character of the landscape.
Magnitude of Change – Decommissioning phase	Sea based traffic and decommissioning activities, will be similar in nature to the construction phase activities and are considered not to be visible in northern views from those areas predicted to experience theoretical visibility of the Proposed Development, due to intervening topographical changes and extensive vegetation cover. The predicted magnitude of change associated with the decommissioning phase is considered to be No Change.
Significance of Effect during Construction Phase	No Change
Significance of Effect during operational and maintenance phase	No Change
Significance of effect during decommissioning phase	No Change

1.7.2 Seascape effects

As described previously the seascape baseline has been informed by the published description of the seascape character types (Marine Character Areas) documented Table 1.8 and the following assessment tables have been provided for those character areas, falling within the SLVIA Study Area, which are judged to experience increased theoretical visibility of the Proposed Development, following interrogation of the ZTVs.

Table 1.17: North Wales Open Waters (MCA 04)

North Wales Open Waters (MCA 04)	
Sensitivity	The existing Douglas Platform is located within the north-eastern portion of this extensive offshore seascape. The new Douglas platform, proposed as part of the Proposed Development will also be located within the same portion of the seascape. Remaining portions of the Proposed Development are not located within this seascape and are considered to have an indirect effect only. Key characteristics which have informed an understanding of the susceptibility of this seascape to the development proposed are described as: • Includes a significant proportion within the Liverpool Bay SPA and Menai Strait and Conwy Bay SAC. • Dominant maritime character is one of transit: recreational vessels entering or leaving the Menai Strait/Conwy Bay, or commercial vessels passing east and west to and from the Mersey and Dee. • Large fishing boats target demersal fish and scallops offshore with smaller potting boats seen closer to the coast. • Gwynt y Môr offshore wind farm dominates the east of the MCA, and to the north – access is restricted around the Douglas Oil Field (marked by a series of lit buoys and shipping lanes depicted on marine charts).

North Wales Open Waters (MCA 04)	
	• Commercial shipping seen offshore, including large vessels waiting for Liverpool Pilots to guide them safely into port. • Recreational boats are a feature particularly in the south east of the MCA during the warmer months. • The landward view changes considerably throughout the MCA, with rocky headlands, islets and large bays found to the west and the large shallow opening of Conwy Bay to the east, with a backdrop of the mountains of Snowdonia. This Marine Character Area (MCA) covers the outer inshore waters of North Wales, coinciding broadly with the coastline stretching from the outer fringes of the Dee Estuary in the east to north-west Anglesey in the west. Part of the Liverpool Bay SPA is found in this MCA, and a small area of the Menai Strait and Conwy Bay SAC is also found in the south of the MCA. This MCA has a strong industrial character; a dredging area for marine aggregates is located in the east of the MCA, and there is also a dumping ground for dredged spoil which has been used since 1874. Douglas Oil field is located in the north eastern corner of the MCA, with further installations characterising the neighbouring waters in England. The overriding influence on this seascape is from the numerous offshore wind turbines. North Hoyle Wind Farm is found in the south east of the MCA and was the first major offshore installation in Wales, completed in 2003. Gwynt y Môr offshore wind farm was completed at the end of 2014 and is located 18 km from the shore, dominating the eastern half of this MCA. There is strong intervisibility between the moving turbines and those of adjacent Rhyl Flats wind farm to the south. The cumulative effects of the wind farms, along with the presence of large commercial ships, tankers and the Douglas Oil Field, combine to produce a strongly industrial character with much development related movement. Taking account of the above characteristics and the influence of existing manmade features within the SLVIA Study Area, the susceptibility of the seascape to the type of development proposed is judged to be low. The overall value of the seascape is considered to be medium. Based on the susceptibility and value attached to this seascape, the overall sensitivity is judged to be Medium.
Magnitude of Change – Construction Phase	Sea based traffic and activities associated with the Proposed Development will be difficult to discerns from coastal areas further south, though may be read more easily within the MCA. Given the existing shipping movements within the MCA, such activities will be perceived as part of the existing operations and offshore shipping movements currently experienced within the MCA. The predicted magnitude of change associated with the Proposed Development is considered to be negligible.
Magnitude of Change – Operational and maintenance phase	Theoretical visibility associated with the existing Douglas, Hamilton Main, Hamilton North and Lennox platforms is extensive across this seascape area. Theoretical visibility associated with the New Douglas Platform reduces the area of MCA predicted to experience visibility of offshore infrastructure, particularly within western portions of the MCA when compared against the visibility pattern associated with the existing offshore infrastructure. It is considered that the Proposed Development will not be readily discernible from coastal areas further south due to intervening distances and the presence of existing manmade infrastructure which includes offshore platforms and turbines. The predicted magnitude of change associated with the operational and maintenance phase of the Proposed Development is considered to be negligible.
Magnitude of Change – Decommissioning phase	Sea based traffic and decommissioning associated with the Proposed Development would have a short term, direct effect upon the seascape, similar to that predicted to occur during the construction phase though will result in the removal of the offshore platform infrastructure. The predicted magnitude of change associated with the decommissioning phase is considered to be negligible, as operational turbines present within the seascape will remain as the dominant feature.
Significance of Effect during Construction Phase	Negligible to minor, direct, short term duration and considered not to be significant.
Significance of Effect during operational and maintenance phase	Negligible to minor, direct long term, reversible and considered not to be significant.

North Wales Open Waters (MCA 04)	
Significance of effect during decommissioning phase	Negligible to minor, direct, short term duration and considered not to be significant.

Table 1.18: Blackpool Coastal Waters and Ribble Estuary (MCA 34)

Blackpool Coastal Waters and Ribble Estuary (MCA 34)	
Sensitivity	The Proposed Development offshore infrastructure associated with the Lennox platform is located within this MCA and is considered to have a direct effect. Remaining offshore infrastructure associated with the existing Douglas, Hamilton Main and Hamilton North lie within adjacent MCA's and are considered to have an indirect effect only. It is noted however that the operational infrastructure associated with the Lennox platform forms a distinct element within the MCA. Key characteristics which have informed an understanding of the susceptibility of this seascape to the development proposed are described as: • Frequent storm surges, combining with high tides to cause flooding. Manmade barriers protect most of the coast, and sand bars, salt marsh and dunes also provide a natural defence. • Along the Sefton Coast the landscape is dominated by sand dunes, stretching over 17 km long. Around Formby and Ainsdale the dunes reach over 20m high, forming dominant features. • Large intertidal areas are internationally designated for their importance for migratory wildfowl, wading birds and sea birds. • The extensive Liverpool Bay SPA includes all of this coast and supports common scoter and red throated diver. • The Lennox Oil and Gas Field, one of five interlinked sites currently operational in Liverpool Bay, is located in the south western part of the MCA. • In addition to urban and beach based tourism the coast is popular for bird watching, with a number of national and local nature reserves providing facilities for visitors. Recreational angling is also an attraction. • There are a number of prominent landmarks on the developed areas of coast, such as Blackpool's tower, pier and rollercoaster. • From the coast there are long views to the mountains of North Wales and the Lake District, and from the Sefton Coast shipping lanes, wind turbines and oil and gas infrastructure are visible. This MCA is a shallow, coastal area which encompasses the Fylde Coast to the north, terminating at the southern edge of Lune Deep, and the Sefton Coast as far as Formby Point to the south. Between these two coasts the Ribble Estuary, between Lytham St Anne's and Southport, cuts inland to Preston. The northern boundary of the MCA follows the edge of the Shell Flat on the south side of the Lune Deep, which is within MCA 32. The western boundary of the MCA follows, approximately, the 20 m bathymetry line that marks a transition to the open waters of the Irish Sea. To the south, the boundary follows Taylor's Bank, which defines the Mersey Channel, and then the shallower water of Jordan's Spit to separate the busier waters of MCA 35. Taking account of the above characteristics and the influence of existing manmade features within the SLVIA Study Area, the susceptibility of the seascape to the type of development proposed is judged to be medium. The overall value of the seascape is considered to be medium. Based on the susceptibility and value attached to this seascape, the overall sensitivity is judged to be Medium.
Magnitude of Change – Construction Phase	Sea based traffic and activities associated with the Proposed Development will be difficult to discerns from coastal areas, though may be read more easily within the MCA. Given the existing shipping movements within the MCA, such activities will be perceived as part of the existing operations and offshore shipping movements currently experienced within the MCA.

Blackpool Coastal Waters and Ribble Estuary (MCA 34)	
	The predicted magnitude of change associated with the Proposed Development is considered to be negligible.
Magnitude of Change – Operational and maintenance phase	Theoretical visibility associated with the operational Lennox platform is extensive across this seascape area. Theoretical visibility associated with the Proposed Development, does not increase areas of the MCA predicted to experience visibility and it is considered that the existing visibility associated with the operational Lennox platform will not alter because of the Proposed Development. The predicted magnitude of change associated with the operational and maintenance phase of the Proposed Development is considered to be No Change.
Magnitude of Change – Decommissioning phase	Sea based traffic and decommissioning associated with the Proposed Development would have a short term, direct effect upon the seascape, similar to that predicted to occur during the construction phase though will result in the removal of the offshore platform infrastructure. The predicted magnitude of change associated with the decommissioning phase is considered to be negligible.
Significance of Effect during Construction Phase	Negligible to minor, direct, short term duration and considered not to be significant.
Significance of Effect during operational and maintenance phase	No Change
Significance of effect during decommissioning phase	Negligible to minor, direct, short term duration and considered not to be significant.

Table 1.19: Irish Sea South (England) (MCA 38)

Irish Sea South (England) (MCA 38)	
Sensitivity	The Proposed Development offshore infrastructure associated with the existing Douglas, Hamilton Main and Hamilton North are located within this MCA and are considered to have a direct effect. The Proposed Development platform Lennox is located within the adjacent MCA and considered to have an indirect effect only. It is noted however that the operational infrastructure associated with the existing Douglas, Hamilton Main and Hamilton North form a distinct element within the MCA. Key characteristics which have informed an understanding of the susceptibility of this seascape to the development proposed are described as: • A series of offshore oil and gas platforms. In the north the Morecambe, Calder and Millom fields supply gas via pipelines to Barrow-in-Furness. • The Hamilton and Douglas fields in the south deliver their gas to Point of Ayr in North Wales, while oil from these fields is transferred to tankers. • Dredging for aggregates is carried on in the north in the shallow. • Walney Offshore Wind Farm extends west into this area from MCA 40, close to the North Morecambe gas platforms. • Several key shipping routes cross this sea, adding to the busy nature of the waters. These routes include the approaches to the major ports of Fleetwood and the Mersey. • A large number of ‘medium use’ recreational sailing routes criss-cross the MCA, linking all the harbours on the English, Welsh and Isle of Man coasts. • Lighting from the offshore platforms and wind turbines influences night time seaward views. • The coast is relatively distant from this MCA, and the nearest areas are low lying, meaning that there are low levels of intervisibility with the land. Under clear conditions, there is intervisibility with the hills of the Lake District National Park and the Isle of Man. The southern part of the Irish Sea is a busy area, with multiple offshore activities including fishing, main shipping routes, oil and gas extraction and dredging. Offshore wind farms extend into the north-west of the MCA. These activities also influence the night time

Irish Sea South (England) (MCA 38)	
	character with lighting on the main offshore platforms and wind turbines across the area. The sea is shallow, generally less than 40m deep, and is sheltered with low tidal flows. Due to the intensity of human activity, there is limited nature conservation interest, though the mud and sand in the less disturbed north of the area provides key subtidal habitats. The offshore area is distant from low lying coasts and is not widely visible except from the ferry routes which link England with Ireland and the Isle of Man, although it is overlooked in distant views from the Lake District fells. At its closest, this offshore MCA is around 14km from the south-western edge of the Lake District National Park and World Heritage Site. Taking account of the above characteristics and the influence of existing manmade features within the SLVIA Study Area, the susceptibility of the seascape to the type of development proposed is judged to be low. The overall value of the seascape is considered to be medium. Based on the susceptibility and value attached to this seascape, the overall sensitivity is judged to be Medium.
Magnitude of Change – Construction Phase	Sea based traffic and activities associated with the Proposed Development will be difficult to discerns from coastal areas further south, though may be read more easily within the MCA. Given the existing shipping movements within the MCA, such activities will be perceived as part of the existing operations and offshore shipping movements currently experienced within the MCA. The predicted magnitude of change associated with the Proposed Development is considered to be negligible.
Magnitude of Change – Operational and maintenance phase	Theoretical visibility associated with the existing Douglas, Hamilton Main, Hamilton North and Lennox platforms is extensive across this seascape area. Theoretical visibility associated with the Proposed Development, does not increase the area of the MCA predicted to experience visibility of offshore infrastructure. The Proposed Development will not be readily discernible from within coastal area of the MCA predicted to experience theoretical visibility due to intervening distances and the presence of existing manmade infrastructure which includes offshore platforms and turbines. The predicted magnitude of change associated with the operational and maintenance phase of the Proposed Development No Change.
Magnitude of Change – Decommissioning phase	Sea based traffic and decommissioning associated with the Proposed Development would have a short term, direct effect upon the seascape, similar to that predicted to occur during the construction phase though will result in the removal of the offshore platform infrastructure. The predicted magnitude of change associated with the decommissioning phase is considered to be negligible, as operational turbines present within the seascape will remain as the dominant feature.
Significance of Effect during Construction Phase	Negligible to minor, direct, short term duration and considered not to be significant.
Significance of Effect during operational and maintenance phase	No Change
Significance of effect during decommissioning phase	Negligible to minor, direct, short term duration and considered not to be significant.

Table 1.20 below summarises the predicted significance of seascape and landscape effect for each of the previously assessed seascape and landscape areas.

Table 1.20: Summary of Predicted Seascape/Landscape Effects

Seascape/Landscape Character Area	Predicted Construction Phase Effects	Predicted Operational and Maintenance Phase Effects	Predicted Decommissioning Phase Effects
North Wales Coast (Landscape)	No Change	No Change	No Change
Vale of Clwyd (Landscape)	No Change	No Change	No Change
Clwydian Range (Landscape)	No Change	No Change	No Change
North Wales Open Waters (Seascape)	Negligible to minor, direct, short term duration and considered not to be significant	Negligible to minor, direct long term, reversible and considered not to be significant.	Negligible to minor, direct, short term duration and considered not to be significant
Blackpool Coastal Waters and Ribble Estuary (Seascape)	Negligible to minor, direct, short term duration and considered not to be significant	No Change	Negligible to minor, direct, short term duration and considered not to be significant
Irish Sea South (England) Seascape	Negligible to minor, direct, short term duration and considered not to be significant	No Change	Negligible to minor, direct, short term duration and considered not to be significant

1.7.3 Visual effects

A series of representative wirelines from 4 viewpoint locations have been provided to illustrate the existing visual context associated with the existing offshore platforms with further wirelines provided to illustrate the theoretical visual context associated with the Proposed Development. The wirelines produced have been used as an aid to the visual impact assessment.

Viewpoints selected as part of the visual impact assessment were selected to meet the following criteria;

- a balance of viewpoints from where the main direction of view is towards the Proposed Development;
- a range of views towards the Proposed Development from within the SLVIA Study Area; and
- locations of interest (e.g. recreational areas, local roads, settlements, protected views, and prospects).

An assessment of construction phase, operational and maintenance phase and decommissioning phase impacts are included within each of the following viewpoint assessment tables.

Table 1.21: Viewpoint 1 – Rhos on Sea (West Promenade)

Viewpoint 1 – Rhos on Sea (West Promenade)			
Grid Ref	284364, 379871	**Existing View Figure Number**	appendix A; Figure 6
Direction of View	North-east	**Approx. Distance to Proposed Development**	27.2 km
Description of existing view and potential receptors	Views from the West Promenade at Rhos on Sea are generally expansive and panoramic in nature. The western coastline of England is visible to the right of the view, forming distant horizons, whilst the built form of Rhyl forms a distinct element at closer distance to the right of the view. Views from the promenade are dominated by the beach and associated protective elements (groynes) within the foreground whilst the existing offshore wind turbines associated with the operational developments at Rhyl Flats and Gwynt y Môr form distinct visible element of the view, with turbines viewed above the horizon. Existing platforms associated with Douglas, Hamilton Main, Hamilton North and Lennox are not readily visible in views from this location. Views from the western promenade are available to recreational, residential and tourist receptors at Rhos on Sea.		
Sensitivity	Rhos on Sea does not fall within any identified landscape designations, though it is considered that the overall value of the view available is judged to be high. Recreational and residential receptors at this location are judged to be of a high susceptibility to change in their views, whilst transient receptors on adjacent road link (West Promenade) are judged to be of a medium susceptibility to change. Taking into account the receptor susceptibility and the value of the view the sensitivity is judged to be high.		
Magnitude of Change – Construction Phase	During the construction phase, operations and shipping movements associated with the Proposed Development will be perceived as minor, additional sea traffic movements in north-eastern views, though such movements will for the larger part of their journey be viewed against distant horizons formed by the English Coastline. Construction operations associated with the formation the new Douglas Platform will not be perceived in available views. Magnitude of change during construction is assessed as being No Change as additional shipping movements and construction operations will not be easily perceived in the wider view to the north-east.		
Magnitude of Change – Operational and maintenance phase	The Proposed Development will not be perceived within north-eastern views, as a distinct element of the view, as operational turbines at Rhyl Flats and Gwynt y Môr form the main points of visual interest. The magnitude of visual impact during the operational phase of the Proposed Development is judged to be No Change as the Proposed Development will not be easily discernible.		
Magnitude of Change – Decommissioning phase	The worst case scenario for the decommissioning phase will be when all offshore infrastructure is removed, with additional shipping movements and activities predicted to be visible within the view. Magnitude of change during decommissioning is assessed as No Change as infrastructure associated with the Proposed Development is not perceived in the view, and additional shipping movements will be difficult to perceive within existing movements.		
Significance of Visual Effect during Construction Phase	No Change		
Significance of Visual Effect during Operational Phase	No Change		
Significance of Effect during Decommissioning Phase	No Change		

Table 1.22: Viewpoint 2 – Prestatyn (Marine Drive)

Viewpoint 2 – Prestatyn (Marine Drive)			
Grid Ref	302018, 382420	**Existing View Figure Number**	appendix A; Figure 7
Direction of View	North-east	**Approx. Distance to Proposed Development**	25.4 km
Description of existing view and potential receptors	Northern views from Marine Drive, Rhyl are expansive and panoramic in nature and are primarily open sea views. Views from Marine Drive are over the beach and associated protective elements (groynes) and coastal protection within the foreground whilst existing offshore wind turbines associated with the operational developments at North Hoyle and Gwynt y Môr form the primary visible element of the view, with turbines viewed above and across extensive portions of the horizon visible in northern views. Existing platforms associated with the operational Douglas, Hamilton Main, Hamilton North and Lennox are not perceived in views from this location. Views from this location are available to recreational, residential and tourist receptors.		
Sensitivity	The viewpoint is not located within any identified landscape designations, though it is considered that the overall value of the view available is judged to be high. Recreational and residential receptors at this location are judged to be of a high susceptibility to change in their views, whilst transient receptors on the adjacent road link (Marine Drive) are judged to be of a medium susceptibility to change. Considering the receptor susceptibility and the value of the view the sensitivity is judged to be high.		
Magnitude of Change – Construction Phase	During the construction phase, operations and shipping movements associated with the Proposed Development will be perceived as minor, additional sea traffic movements in northern and north-eastern views. Construction operations associated with the formation the new Douglas Platform, to the north, will not be perceived in views due to intervening offshore infrastructure. Magnitude of change during construction is assessed as being No Change as additional shipping movements and construction operations will not be perceived in the wider view to the north.		
Magnitude of Change – Operational and maintenance phase	The Proposed Development will not be perceived within north-eastern views, as a distinct element of the view, as intervening operational turbines form the main points of visual interest. The magnitude of visual impact during the operational phase of the Proposed Development is judged to be No Change as the Proposed Development will not be easily discernible.		
Magnitude of Change – Decommissioning phase	The worst case scenario for the decommissioning phase will be when all offshore infrastructure is removed, with additional shipping movements and activities predicted to be visible within the view. Magnitude of change during decommissioning is assessed as No Change as infrastructure associated with the Proposed Development is not perceived in the view, and additional shipping movements will be perceived as a negligible addition to existing sea traffic movements.		
Significance of Visual Effect during Construction Phase	No Change		
Significance of Visual Effect during Operational Phase	No Change		
Significance of Effect during Decommissioning Phase	No Change		

Table 1.23: Viewpoint 3 – Formby Beach

Viewpoint 3 – Formby Beach			
Grid Ref	372026, 406264	**Existing View Figure Number**	appendix A; Figure 8
Direction of View	West	**Approx. Distance to Proposed Development**	10.5 km
Description of existing view and potential receptors	Views from Formby Beach are open, expansive, and panoramic in nature, with the main focus across the extensive beach area, which forms the foreground and midground, with open sea views forming the main element of the distant portion of the view. To the south-west, distant horizons are formed by the northern coastline of Wales, which forms the backdrop to visible operational turbines. The operational turbines, associated with Gwynt y Môr are seen above the distant horizons formed by the north Wales coastline to the south-west. North-western views from this location also includes visibility of the operational Lennox, Hamilton, Hamilton North and Douglas offshore platforms which form minor points of interest on the horizon, though depending upon weather conditions are not often easily perceived. The view also contains visibility of shipping movements, associated with large shipping vessels and ferries approaching Liverpool Bay, which are generally viewed in front of the operational turbines and other offshore infrastructure. Views from this location are available to recreational and tourist receptors.		
Sensitivity	The viewpoint is not located within any identified landscape designations, though it is considered that the overall value of the view available is judged to be high. Recreational and tourist receptors at this location are judged to be of a high susceptibility to change in their views. Considering the receptor susceptibility and the value of the view the sensitivity is judged to be high.		
Magnitude of Change – Construction Phase	During the construction phase, operations and shipping movements associated with the Proposed Development will be perceived as minor, additional sea traffic movements in western views. Construction operations associated with the formation the new Douglas Platform, will not be easily perceived as separate operations in views, with operational turbines remaining as the main point of visual focus. Magnitude of change during construction is assessed as being No Change as additional shipping movements and construction operations will not be readily perceived in the wider view.		
Magnitude of Change – Operational and maintenance phase	The Proposed Development will be perceived within western views, though will not be seen as a change to the existing baseline view as infrastructure being utilised for the Proposed Development will be retained. Existing operational turbines visible in the view from this location, will remain as the main point of visual interest in available view, particularly to the south-west. The magnitude of visual impact during the operational phase of the Proposed Development is judged to be No Change as offshore elements associated with the Proposed Development, currently existing within the views available.		
Magnitude of Change – Decommissioning phase	The worst case scenario for the decommissioning phase will be when all offshore infrastructure is removed, with additional shipping movements and activities predicted to be visible within the view. Magnitude of change during decommissioning is assessed as Negligible as infrastructure associated with the Proposed Development, whilst not a major component of the view, will be removed.		
Significance of Visual Effect during Construction Phase	No Change		
Significance of Visual Effect during Operational Phase	No Change		
Significance of Effect during Decommissioning Phase	Minor, long term beneficial as visible elements of the Proposed Development are removed from the view.		

Table 1.24: Viewpoint 4 – Lytham St Annes (North Beach)

Viewpoint 4 – Lytham St Annes (North Beach)			
Grid Ref	332128, 428134	**Existing View Figure Number**	appendix A; Figure 9
Direction of View	South-west	**Approx. Distance to Proposed Development**	15.9 km
Description of existing view and potential receptors	Views from St Annes Beach are open, expansive, and panoramic in nature, with the main focus across the extensive beach, which forms the foreground and mid ground, with open sea views forming the distant portion of the view. To the south-west, distant horizons are formed by the northern coastline of Wales. The operational turbines, associated with Gwynt y Môr are generally difficult to perceive, due to distance and weather conditions. North-western views from this location includes visibility of the operational Lennox, Hamilton, Hamilton North and existing Douglas offshore platforms which are perceived as minor points of visual interest on the distant horizon, though depending upon weather conditions are not often easily perceived. The view also contains visibility of shipping movements, associated with large shipping vessels approaching Liverpool Bay Views from this location are available to recreational and tourist receptors.		
Sensitivity	The viewpoint is not located within any identified landscape designations, though it is considered that the overall value of the view available is judged to be high. Recreational and tourist receptors at this location are judged to be of a high susceptibility to change in their views. Considering the receptor susceptibility and the value of the view the sensitivity is judged to be high.		
Magnitude of Change – Construction Phase	During the construction phase, operations and shipping movements associated with the Proposed Development will be perceived as minor, additional sea traffic movements in views. Construction operations associated with the formation the new Douglas Platform, will not be perceived as separate operations in views. Magnitude of change during construction is assessed as being No Change as additional shipping movements and construction operations will not be readily perceived in the wider view.		
Magnitude of Change – Operational and maintenance phase	The Proposed Development will be perceived, at distance as a minor element of available views, though will not be seen as a change to the existing baseline view as infrastructure being utilised for the Proposed Development will be retained. The magnitude of visual impact during the operational phase of the Proposed Development is judged to be No Change as offshore elements associated with the Proposed Development, currently existing within the views available.		
Magnitude of Change – Decommissioning phase	The worst case scenario for the decommissioning phase will be when all offshore infrastructure is removed, with additional shipping movements and activities predicted to be visible within the view. Magnitude of change during decommissioning is assessed as Negligible as infrastructure associated with the Proposed Development, whilst not a major component of the view, will be removed.		
Significance of Visual Effect during Construction Phase	No Change		
Significance of Visual Effect during Operational Phase	No Change		
Significance of Effect during Decommissioning Phase	Minor, long term beneficial as visible elements of the Proposed Development are removed from the view.		

Table 1.25 below summarises the predicted significance of visual effect from each of the previously assessed viewpoints.

Table 1.25: Summary of predicted visual effects for selected viewpoints

Viewpoint	Predicted Construction Phase Effects	Predicted Operational and Maintenance Phase Effects	Predicted Decommissioning Phase Effects
Rhos on Sea (West Promenade)	No Change	No Change	No Change
Prestatyn (Marine Drive)	No Change	No Change	No Change
Formby Beach	No Change	No Change	Minor, long term beneficial as visible elements of the Proposed Development are removed from the view.
Lytham St Annes (North Beach)	No Change	No Change	Minor, long term beneficial as visible elements of the Proposed Development are removed from the view.

1.8 Summary

A Seascape, Landscape and Visual Impact Assessment has been completed for the Proposed Development using methods derived from best practice guidance.

The baseline environment for seascape, landscape and visual characteristics with the SLVIA Study Area was collected through a combination of detailed desktop review of existing studies and datasets alongside the preparation and generation of ZTV mapping for both the existing offshore platform infrastructure and the proposed operational offshore infrastructure associated with the Proposed Development.

It is noted that the ZTV mapping depicts theoretical visibility that identifies areas from which the existing offshore infrastructure and the Proposed Development may be visible and is based on a bare earth scenario. However, it is noted that the Proposed Development may not actually be visible from all areas identified due to localised screening produced by roadside vegetation, field boundary vegetation, woodland areas, built form and localised changes in topography, which are not represented by the DTM.

All of the identified Landscape Character Areas and SCAs within the SLVIA Study Area have been assessed for construction, operational, and decommissioning phase effects as a consequence of the Proposed Development.

The seascape and landscape assessment concludes that no significant indirect effects are predicted for any of the Landscape Character Areas identified within the SLVIA Study Area as a consequence of the Proposed Development. Similarly, no significant effects are predicted to occur within any of the SCAs identified as identified SCAs contain existing offshore infrastructure associated with the existing platforms, and no significant alterations to the seascape are predicted to occur as a consequence of the Proposed Development. No significant effects were predicted on any protected landscapes identified within the SLVIA Study Area.

The level of visual impact experienced by a viewer depends on their sensitivity and viewing opportunity, and the weather conditions at the time. The SLVIA has concluded that no significant visual impacts are predicted as a consequence of the Proposed Development. Existing views from each of the assessed viewpoints contain either existing visibility of offshore platforms as a minor element of the view, or views where existing offshore platforms are not easily discernible. As existing offshore platform infrastructure is to be repurposed as part of

the Proposed Development, it is considered that no change to the existing visual baseline views will be experienced.

Having considered all of the issues, the conclusion reached in the SLVIA is that in seascape, landscape, and visual terms, it is considered that the Proposed Development can be accommodated without significant effects on seascape, landscape character, and visual amenity.

This conclusion is based on several findings namely; the existing offshore platforms at Hamilton, Hamilton North, and Lennox will be repurposed, with no perceived alterations to visibility patterns currently experienced from receptors in existing Seascape or Landscape Character areas. The New Douglas Platform, where visible within the seascape, will be perceived as a minor alteration to the existing seascape baseline and as such these alterations may be perceived as a negligible change. Overall, it is considered that the Proposed Development fits with the characteristics of the existing seascape and no significant effects are predicted to occur.

1.9 References

Council of Europe Landscape Convention, European Landscape Convention and Reference Documents (July 2000).

Guidelines for Landscape and Visual Impact Assessment: Third Edition (2013) Landscape Institute and Institute for Environmental Management and Assessment (referred to as GLVIA 3).

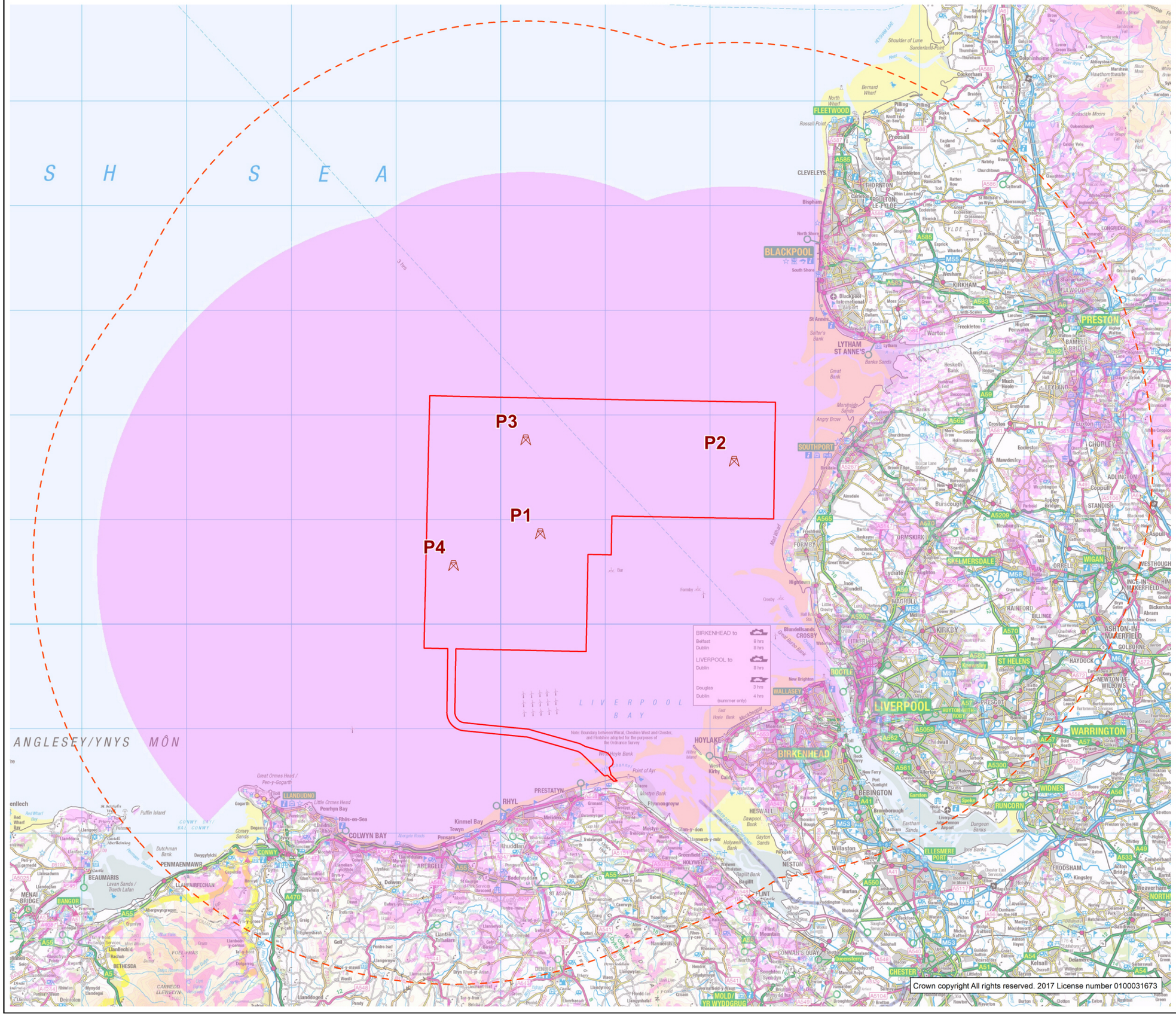
NatureScot (formerly Scottish Natural Heritage (SNH)), Visual Representation of Wind Farms Guidance (SNH, February 2017, Version 2.2).

NatureScot (formerly SNH), Offshore Renewables – Guidance on assessing the impact on coastal landscape and seascape, Guidance for Scoping an Environmental Statement.

NatureScot (formerly SNH), Visual Representation of Wind Farms (H+M and Envision, 2006).

Appendix A

[Supporting Graphics]



Legend

- Development Area
- 60 km buffer
- Existing Platform
- Visibility Existing Platforms

PLATFORM DETAILS

ID	NAME	EAST	NORTH	HEIGHT
P1	HAMILTON	303778	408690	33.5 m
P2	LENNOX-A	322303	415621	35.7 m
P3	HAMILTON N	302389	417664	33.5 m
P4	DOUGLAS	295501	405664	66.6 m

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Project: CCS Hynet

Title: Existing Platforms ZTV
(Zone of Theoretical Visibility)

Fig No: 1.0

Status: Issued Date: 17/07/23

Drawn: PM Ckd: SA

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Projection: ED 1950 UTM Zone 30N
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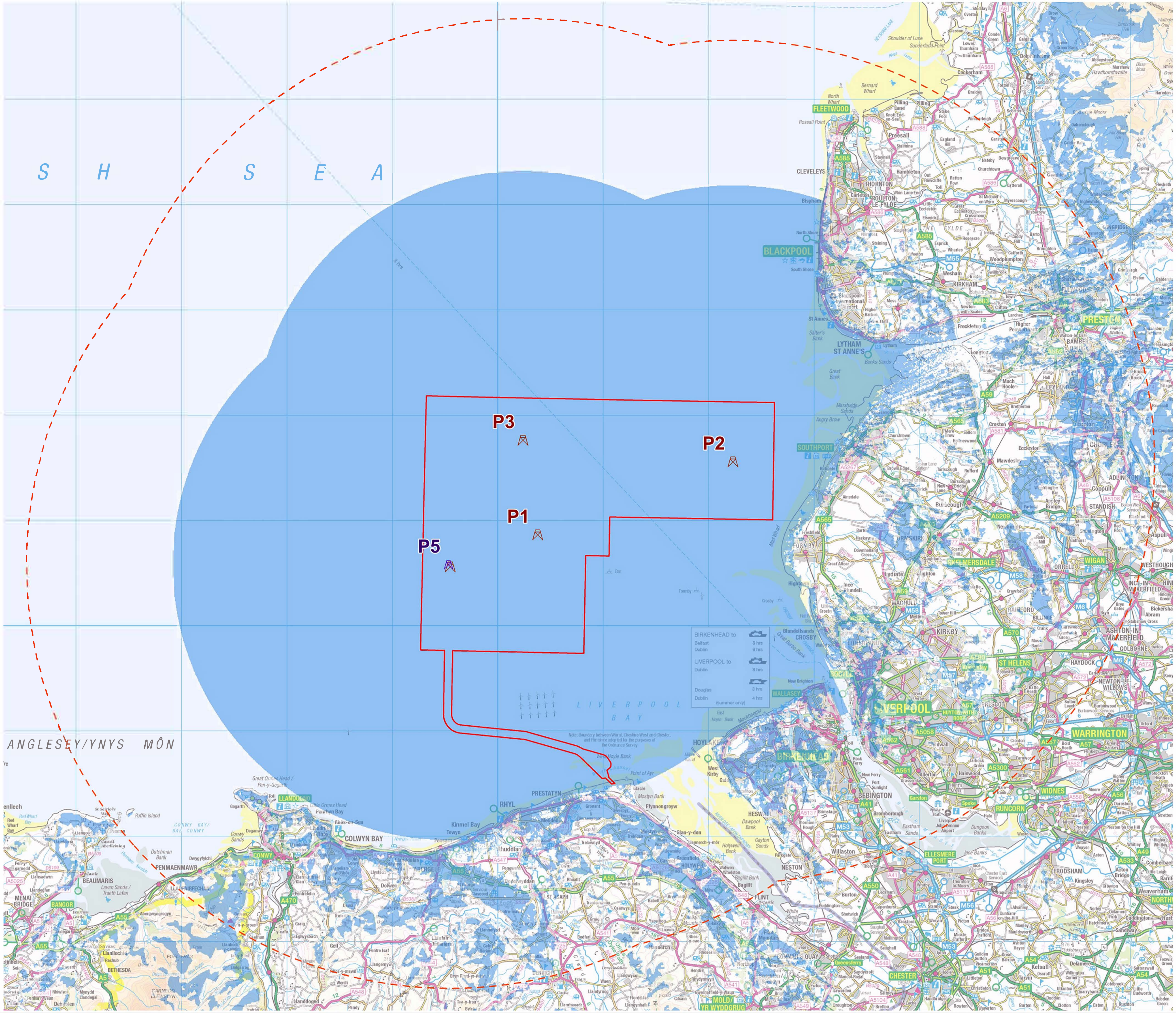
Scale 1: 350,000 @ A3



Legend

- Development Area
- 60 km buffer
- Existing Platform
- Proposed Platform
- Visibility Proposed Platforms

PLATFORM DETAILS

ID	NAME	EAST	NORTH	HEIGHT
P1	HAMILTON	303778	408690	33.5 m
P2	LENNOX-A	322303	415621	35.7 m
P3	HAMILTON N	302389	417664	33.5 m
P5	NEW DOUGLAS PLATFORM	292332	405856	35.5 m

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Title: Proposed Platform ZTV
(Zone of Theoretical Visibility)

Fig No: 2.0

Status: Issued Date: 17/07/23

Drawn: PM Ckd: SA

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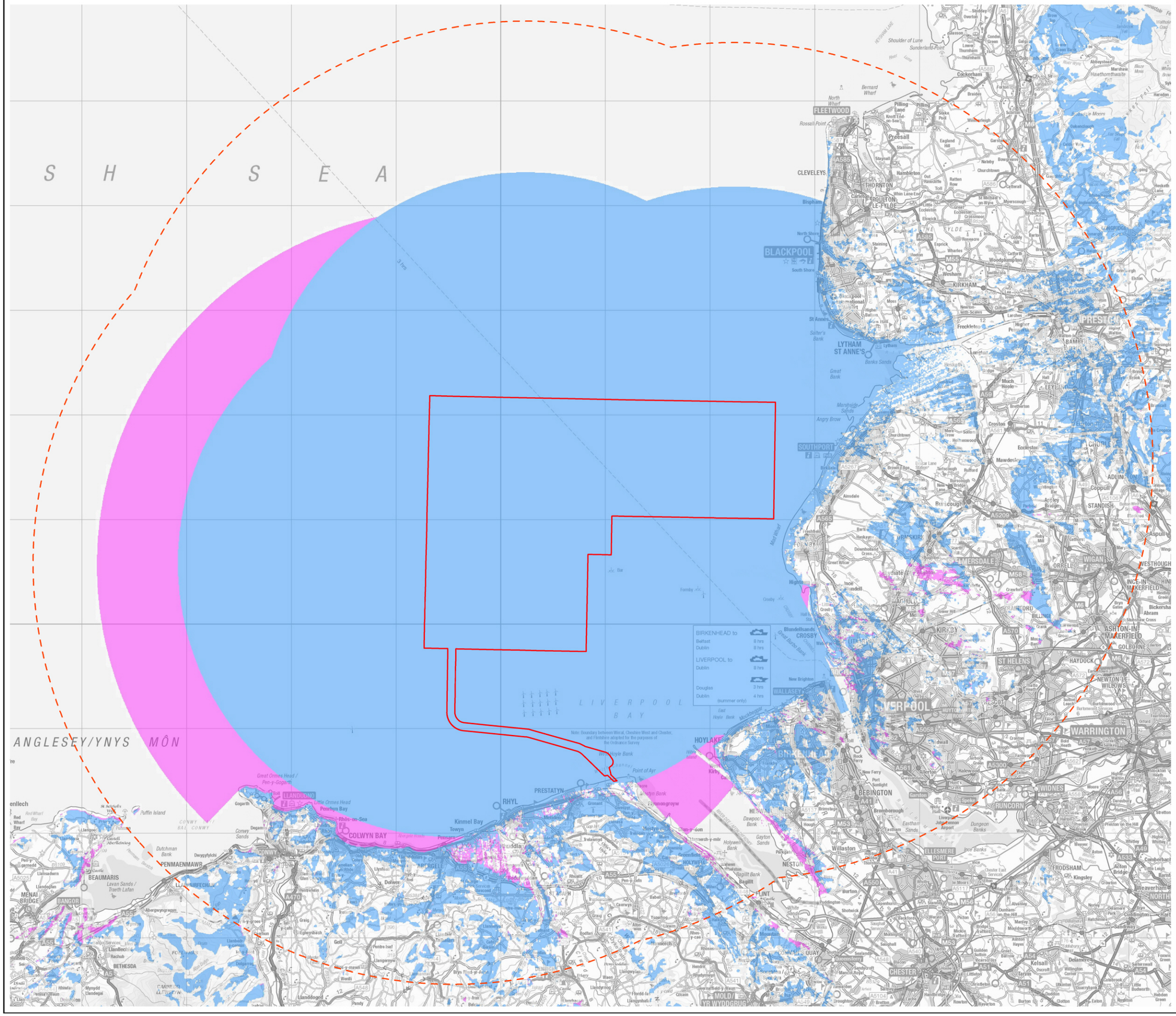

Legend

- Development Area
- 40 km buffer

VISIBILITY COMPARISON

- Visibility Existing Layout only
- Visibility Proposed Layout only

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Title: Visibility Comparison ZTV

Fig No: 3.0

Status: Issued Date: 17/07/23

Drawn: PM Ckd: SA

N

Projection: ED 1950 UTM Zone 30N
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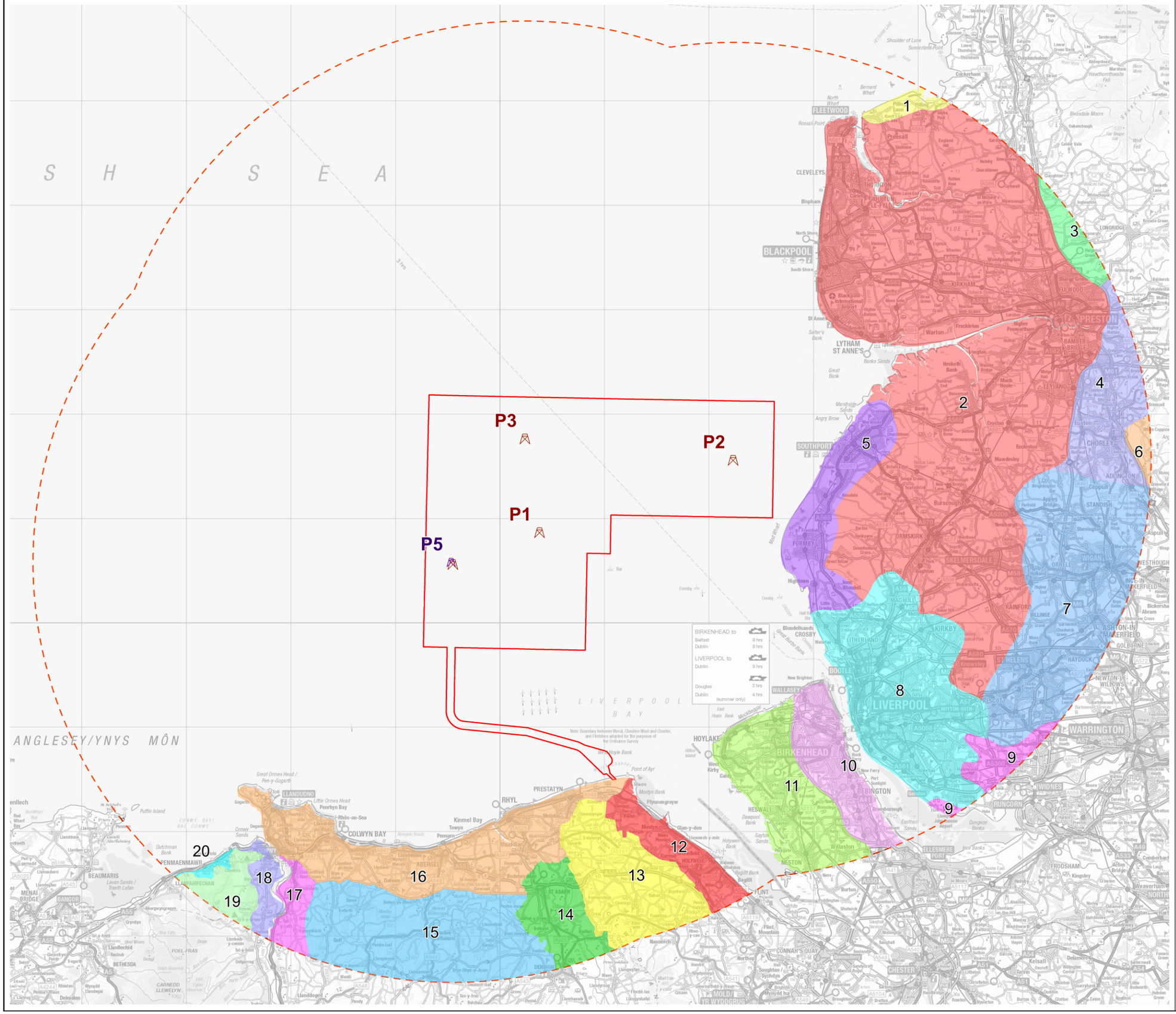

Legend

- Development Area
- 60 km buffer
- Proposed Platform
- Existing Platform

ID	LCA DESCRIPTION
1	Morecambe Coast and Lune Estuary
2	Lancashire and Amounderness Plain
3	Bowland Fringe and Pendle Hill
4	Lancashire Valleys
5	Sefton Coast
6	Southern Pennines
7	Lancashire Coal Measures
8	Merseyside Conurbation E
9	Mersey Valley
10	Merseyside Conurbation W
11	Wirral
12	Deeside and Wrexham
13	Clwydian Range
14	Vale of Clwyd
15	Rhos Hills
16	Colwyn and Northern Coastline
17	Conway Valley E
18	Conway Valley W
19	Snowdonia
20	Arfon

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Project: CCS Hynet

Title: Landscape Character Areas

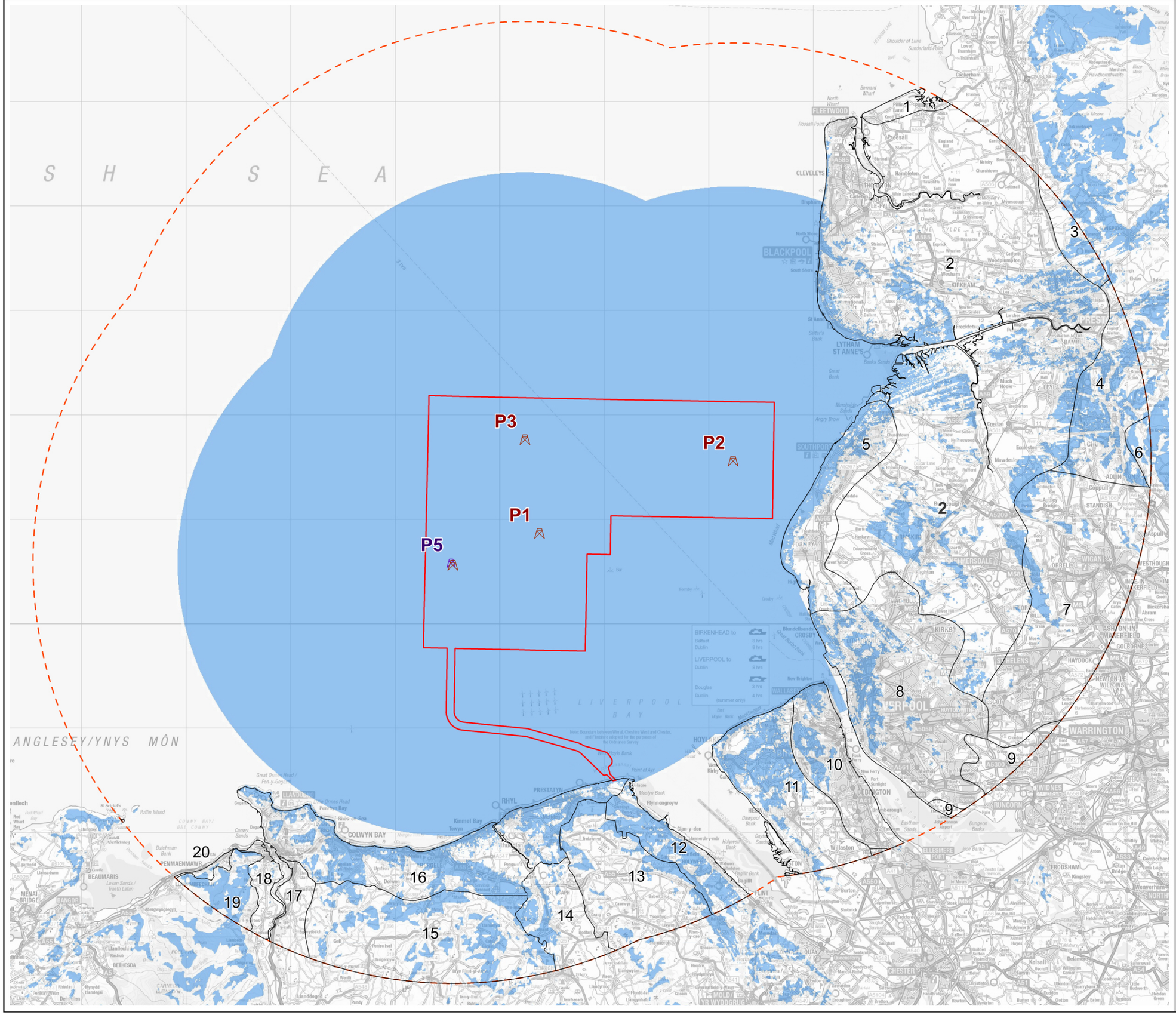
Fig No: 4.0

Status: Issued Date: 04/07/23

Drawn: PM Ckd: SA

N

Projection: ED 1950 UTM Zone 30N
EPSG Code: 23030
Scale 1: 350,000 @ A3



Legend

- Development Area
- 60 km buffer
- Existing Platform
- Proposed Platform
- Visibility Proposed Platforms

ID	LCA DESCRIPTION
1	Morecambe Coast and Lune Estuary
2	Lancashire and Amounderness Plain
3	Bowland Fringe and Pendle Hill
4	Lancashire Valleys
5	Sefton Coast
6	Southern Pennines
7	Lancashire Coal Measures
8	Merseyside Conurbation E
9	Mersey Valley
10	Merseyside Conurbation W
11	Wirral
12	Deeside and Wrexham
13	Clwydian Range
14	Vale of Clwyd
15	Rhos Hills
16	Colwyn and Northern Coastline
17	Conway Valley E
18	Conway Valley W
19	Snowdonia
20	Arfon

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Title: LCA Borders with ZTV

Fig No: 4.1

Status: Issued Date: 17/07/23

Drawn: PM Ckd: SA

N

Projection: ED 1950 UTM Zone 30N
EPSG Code: 23030
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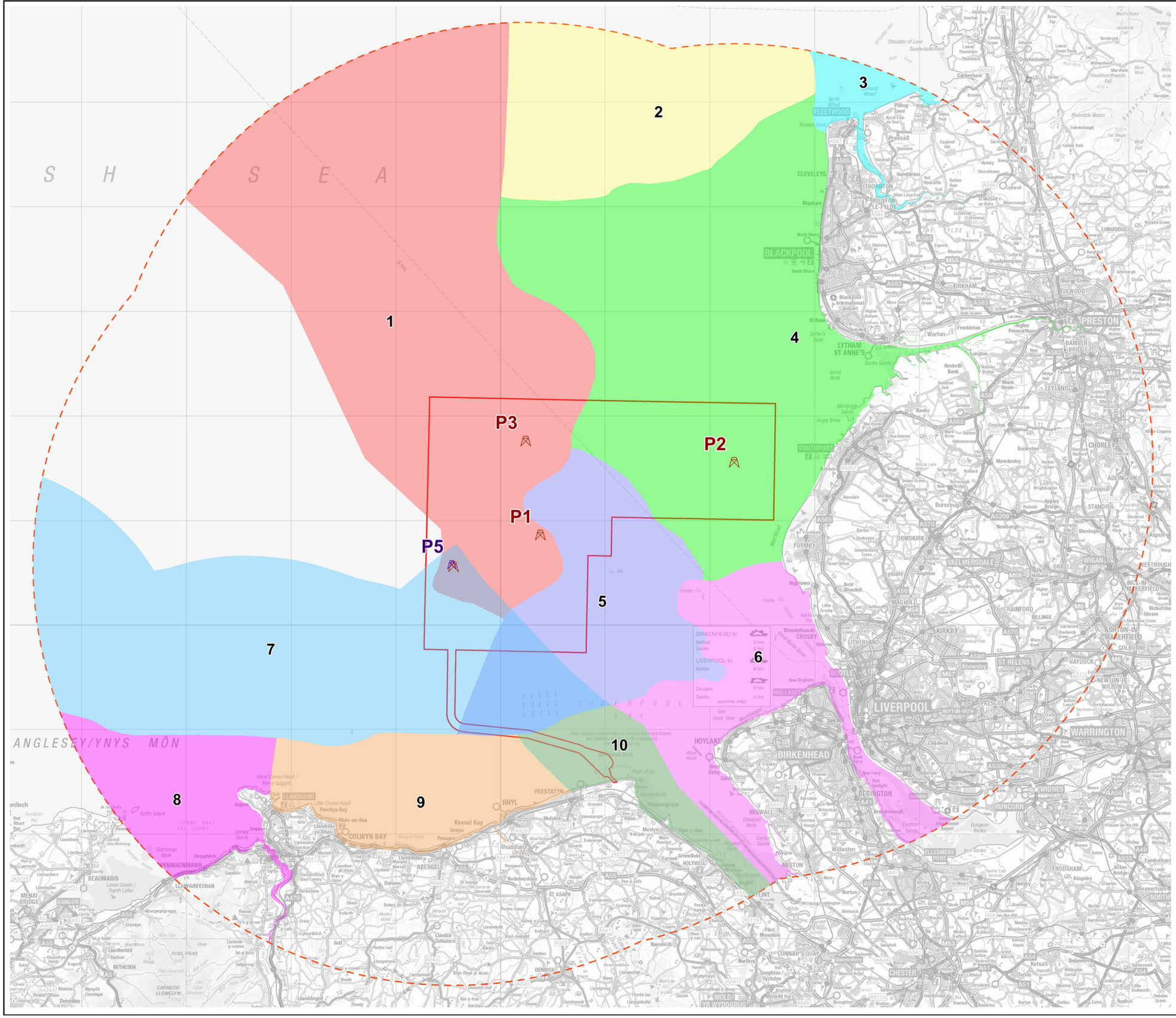

Legend

- Development Area
- 60 km buffer
- Existing Platform
- Proposed Platform

ID	SCA DESCRIPTION
1	Irish Sea South (England)
2	Walney Coastal Waters and Duddon Estuary
3	Morecambe Bay
4	Blackpool Coastal Waters and Ribble Estuary
5	Inner Liverpool Bay
6	Dee and Mersey Estuaries and Coastal Waters
7	North Wales Open Waters
8	Red Wharf and Conwy Bays
9	Colwyn Bay and Rhyl Flats
10	Dee Estuary (Wales)

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Title: Seascape Character Areas

Fig No: 5.0

Status: Issued Date: 04/07/23

Drawn: PM Ckd: SA

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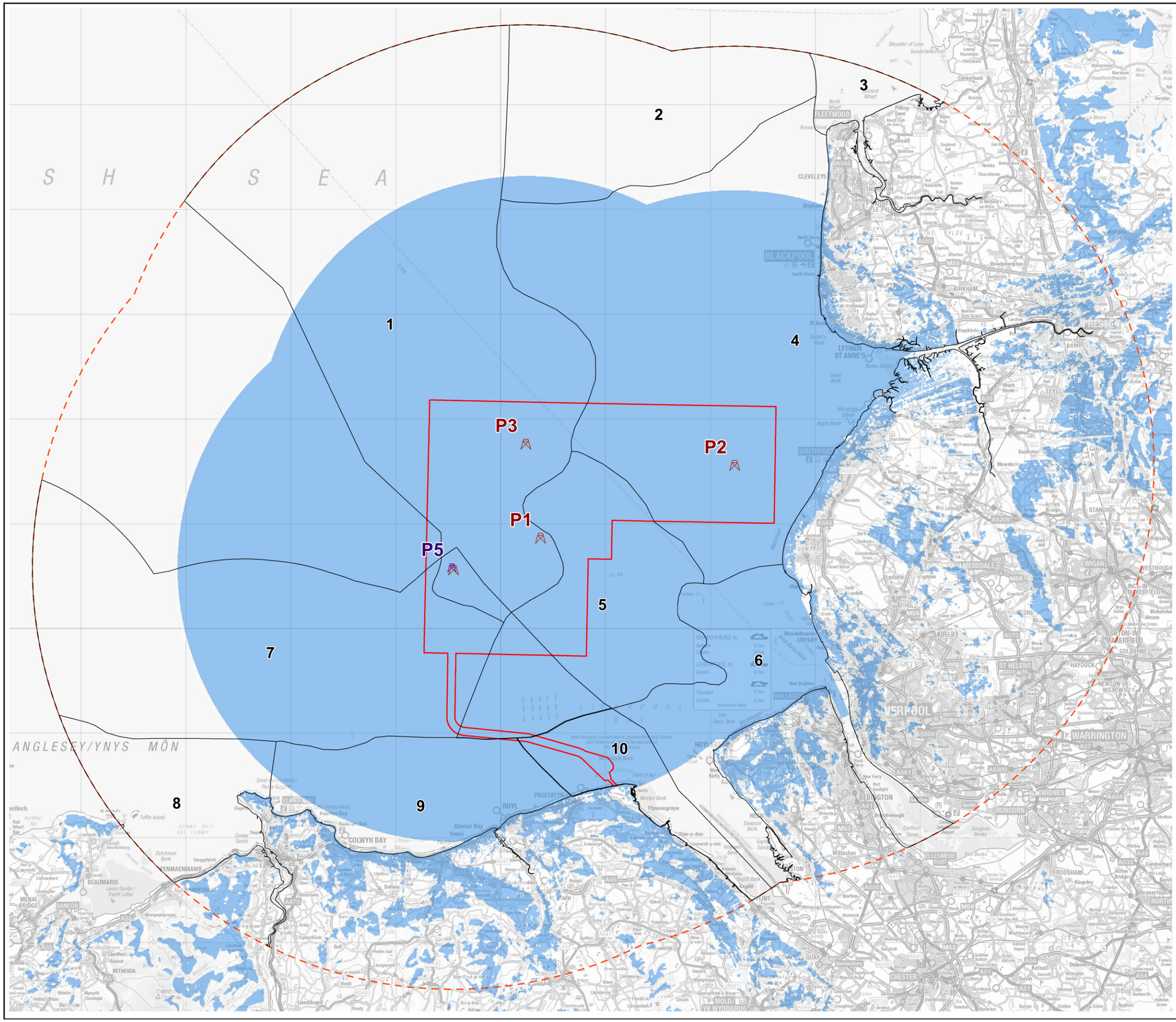

Legend

- Development Area
- 60 km buffer
- Existing Platform
- Proposed Platform
- Visibility Poposed Platforms

ID	SCA DESCRIPTION
1	Irish Sea South (England)
2	Walney Coastal Waters and Duddon Estuary
3	Morecambe Bay
4	Blackpool Coastal Waters and Ribble Estuary
5	Inner Liverpool Bay
6	Dee and Mersey Estuaries and Coastal Waters
7	North Wales Open Waters
8	Red Wharf and Conwy Bays
9	Colwyn Bay and Rhyl Flats
10	Dee Estuary (Wales)

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Project: CCS Hynet

Title: SCA Borders with ZTV

Fig No: 5.1

Status: Issued Date: 17/07/23

Drawn: PM Ckd: SA

N

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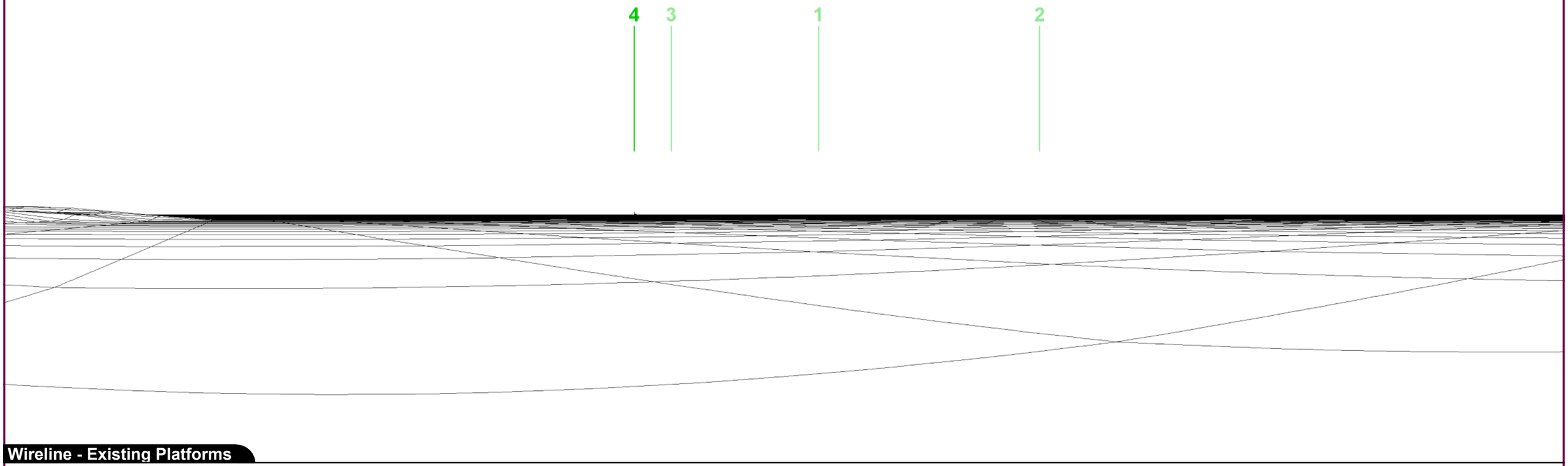
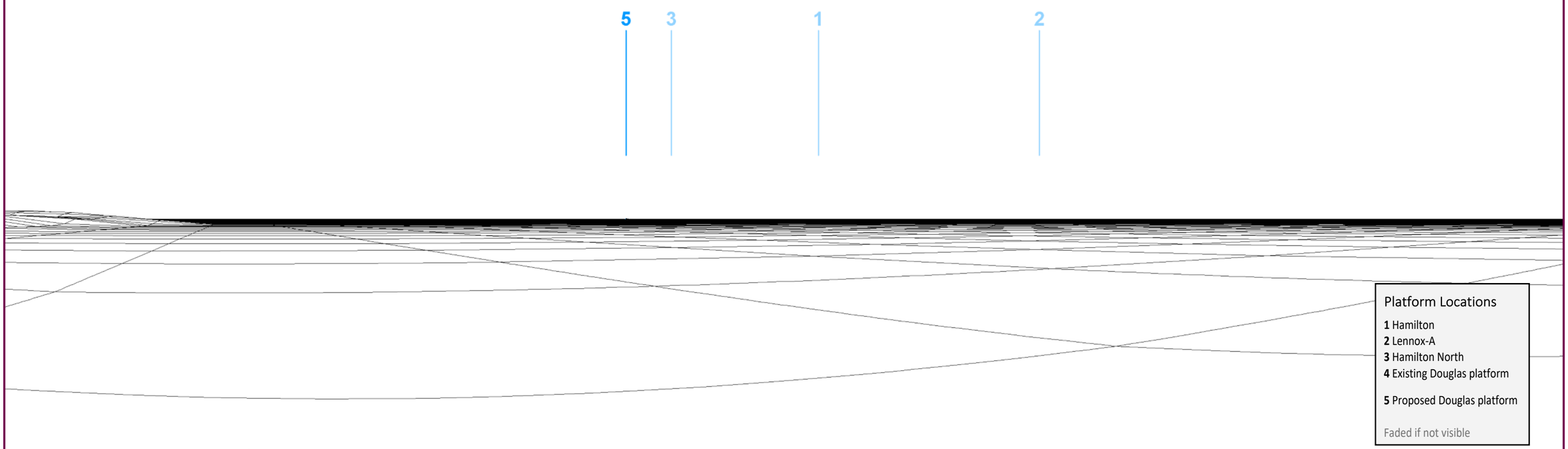
WIRELINE ANALYSIS

CCS Hynet

July 2023



Wireline - Existing Platforms



Wireline - Proposed Platforms

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Date	25:06:23 09.30	Northing	379871		Projection: British Grid	Checked:	SA	
View height	1.65 m AGL	Direction	32°		Data Source: RPS 2023	Job Ref:	NI 2759	
Field of View	90°	Distance	27,180 m		Status: Issued	Date:	June 2023	

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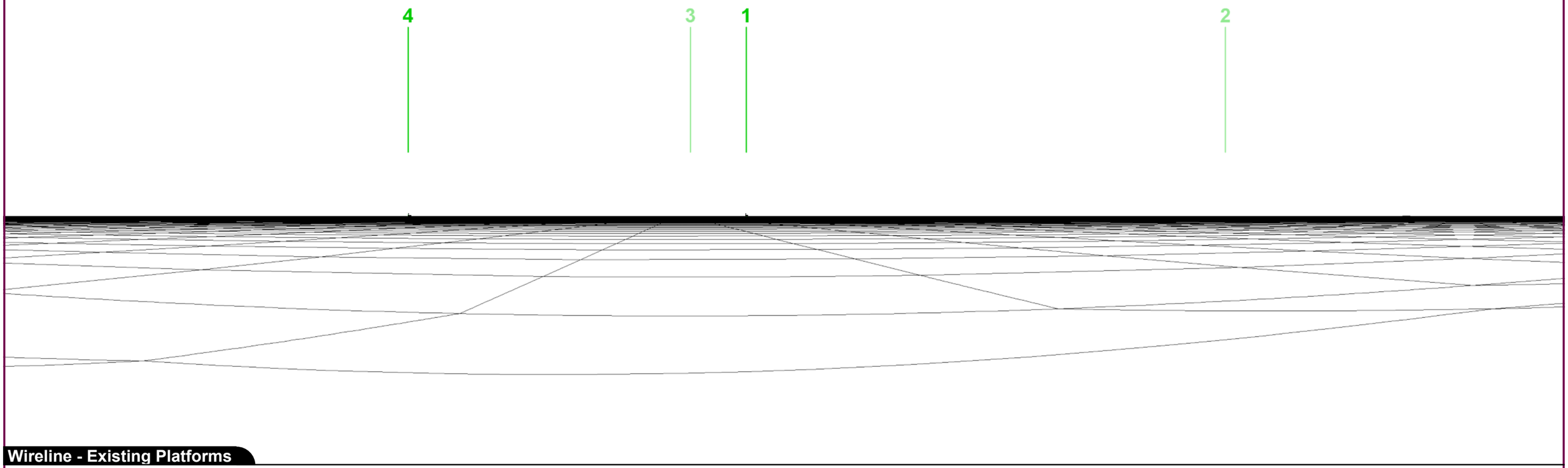
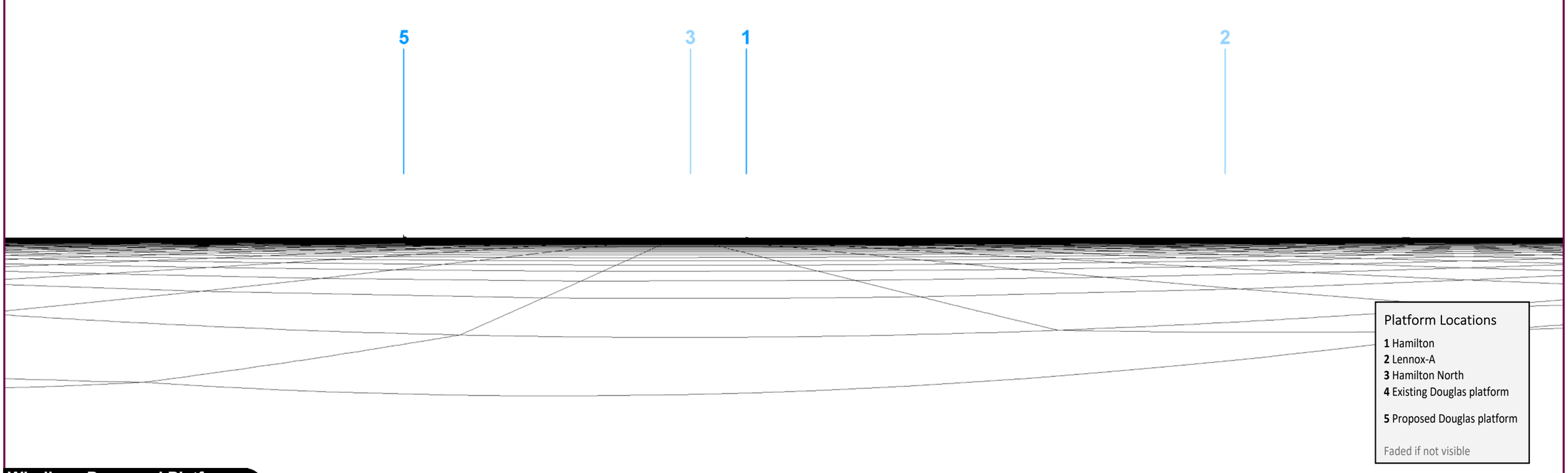


Wireline - Existing Platforms



Wireline - Proposed Platforms

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View height	1.65 m AGL	Direction	6°		Data Source: RPS 2023	Job Ref:	NI 2759	
Field of View	90°	Distance	25,360 m		Status: Issued	Date:	June 2023	

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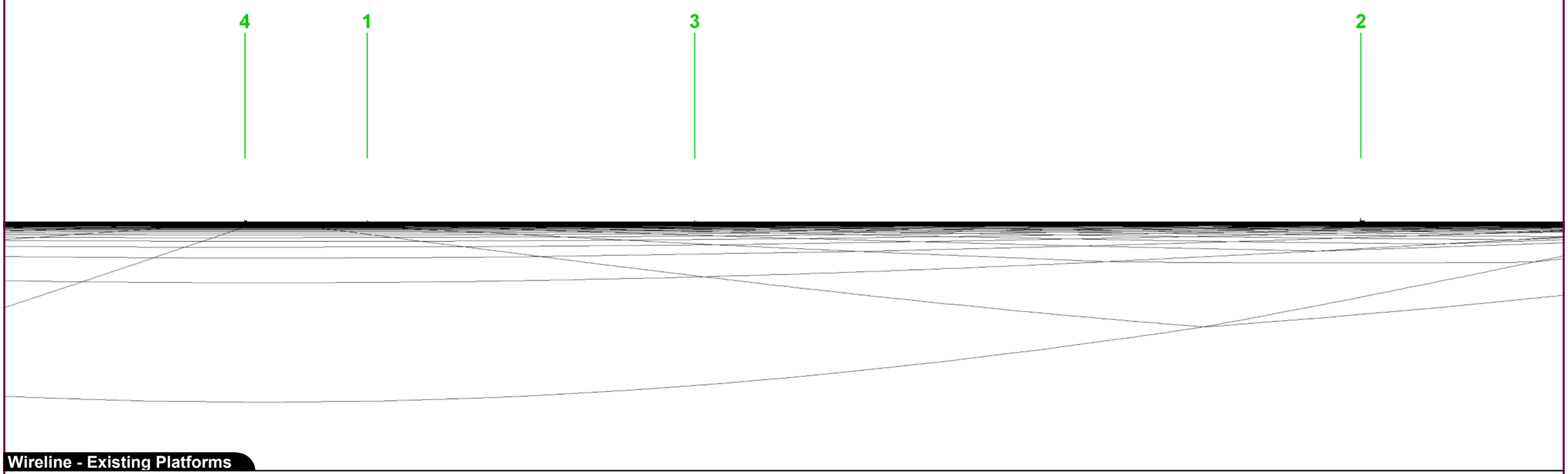
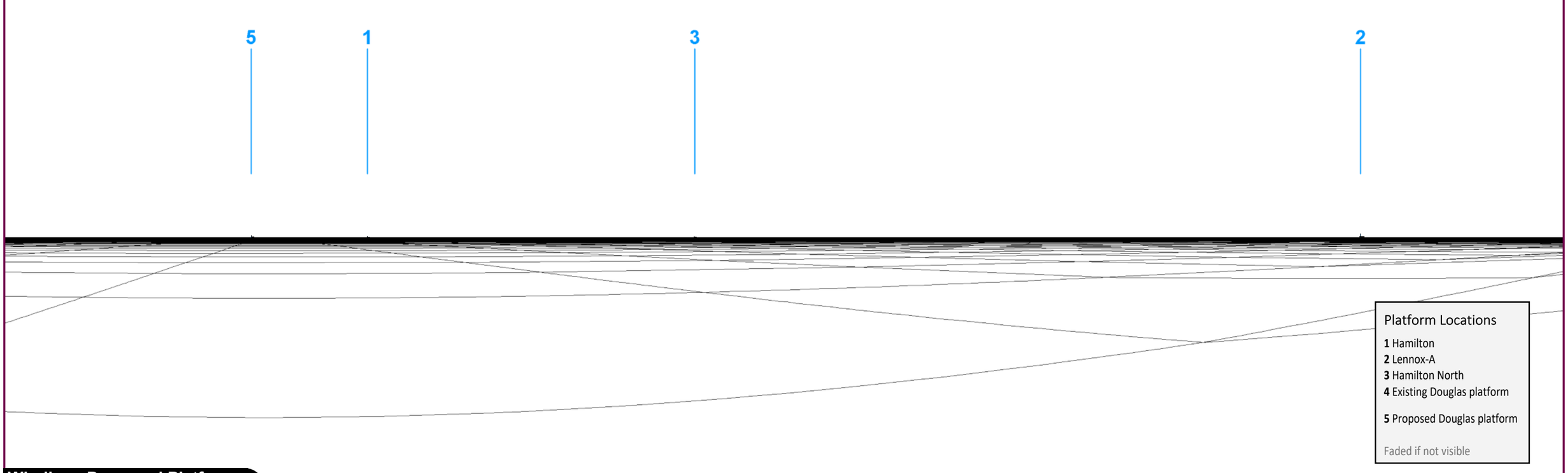


Wireline - Existing Platforms



Wireline - Proposed Platforms

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View height	1.65 m AGL	Direction	300°		Data Source: RPS 2023	Job Ref:	NI 2759	
Field of View	90°	Distance	10,481 m		Status: Issued	Date:	June 2023	

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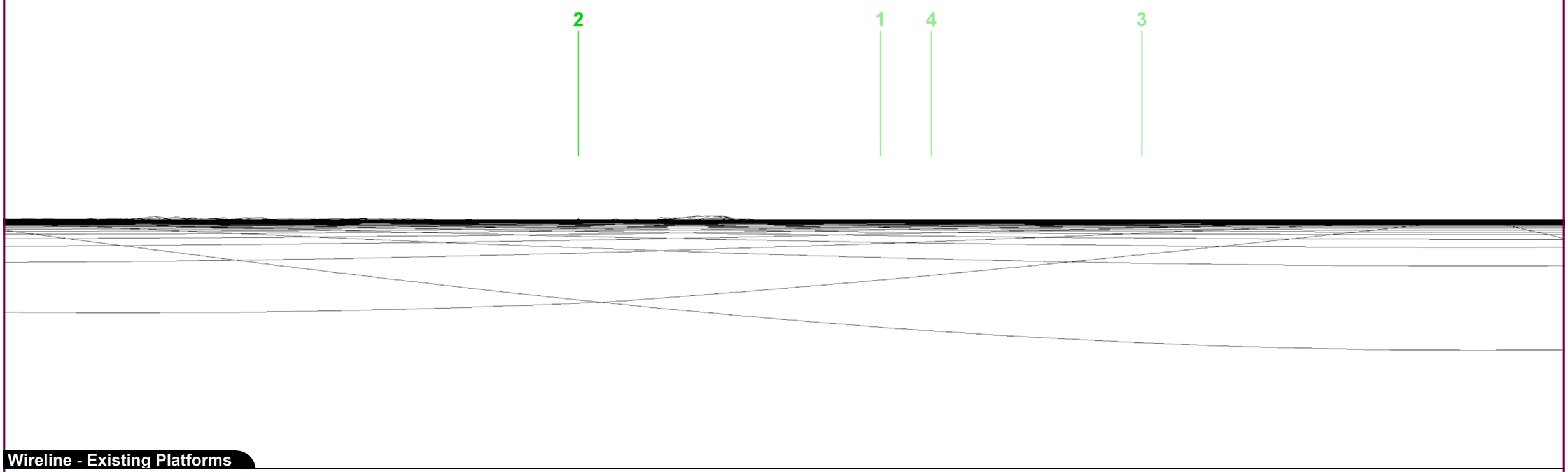
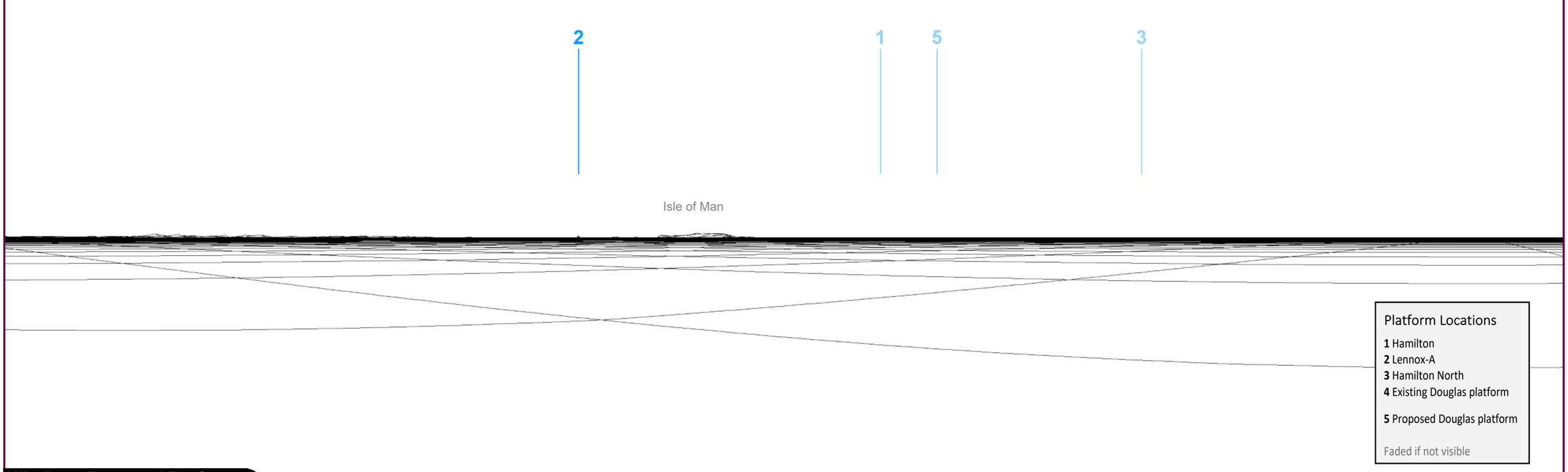


Wireline - Existing Platforms



Wireline - Proposed Platforms

Camera	NA	Easting	332128	Title: VP04 Lytham St Anne's (North Beach)	Figure No. 9	Drawn by:	PM	Project: CCS Hynet
Date	25:06:23 09.30	Northing	428134		Projection: British Grid	Checked:	SA	
View height	1.65 m AGL	Direction	230°		Data Source: RPS 2023	Job Ref:	NI 2759	
Field of View	90°	Distance	15,909 m		Status: Issued	Date:	June 2023	

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