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Р	Great Eastern Offshore Wind Farm — Preliminary Visual Appraisal report	05/12/2022	SS	Draft for ERM review
P1	Great Eastern Offshore Wind Farm — Preliminary Visual Appraisal report	06/02/2023	SS	Preliminary Visual Appraisal
P2	Great Eastern Offshore Wind Project — Preliminary Visual Appraisal report	16/02/2023	SS	Preliminary Visual Appraisal

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ABBREVIATIONS

Abbreviation	Title
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DTP	Department of Transport and Planning
DEM	Digital elevation model
EES	Environment Effects Statement
EIS	Environmental Impact Statement
GLVIA	Guidelines for Landscape and Visual Impact Assessment
LCA	Landscape character area
LVIA	Landscape and Visual Impact Assessment
SVIA	Seascape Visual Impact Assessment
TLVE	Theoretical limit of viewshed extent
WTGs	Wind Turbine Generators
ZTV	Zone of theoretical visibility

GLOSSARY

The following terms and their definitions have been developed by Hansen Partnership with consideration of relevant LVIA guidance documents, primarily by the Landscape Institute and Institute of Environmental Management & Assessment, Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013.

Term	Definition
Baseline assessment	The assessment of existing landscape conditions and statutory framework relevant to the area of landscape within the site study area.
Baseline studies	Work done to determine and describe the environmental conditions against which any future changes can be measured or predicted and assessed.
Digital elevation model	The representation of continuous elevation values over a topographic surface by a regular array of sampled z-values, referenced to a common datum. To be expressed as a grid or raster data set. The DEM is ground only representation and excludes vegetation such as trees and shrubs and human constructed features such as sheds and houses.
EES Scoping Requirements	Environment Effects Statement (EES) Scoping Requirements are prepared by the Department of Transport and Planning (DTP) to set out the matters to be investigated and documented in an EES.
EIS Guidelines	Environmental Impact Statement (EIS) Guidelines are prepared by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) to set out the matters to be assessed in an EIS.
EIS/EES Terms of Reference	The collective term for the EIS Guidelines and the EES Scoping Requirements specified by DCCEEW and DTP respectively.
Landscape and Visual Impact Assessment (LVIA)	A tool used to identify and assess the likely significance of the effects of change resulting from development both on the terrestrial landscape as an environmental resource in its own right and on people's views and visual amenity.
Landscape	Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.
Seascape	Seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with natural, cultural, historical and archaeological links with each other.
Landscape character	A distinct, recognisable and consistent pattern of elements that occur in the terrestrial area that make one landscape different from another, rather than better or worse.
Landscape character area	Distinct areas of landscape that are relatively homogeneous in character and share a combination of geological, hydrological, topographical, drainage, vegetative, land use and settlement layout features.
Landscape character assessment	The process of identifying and describing variation in the character of the landscape, and the unique combination of elements and features that make a defined area of land distinctive.

Landscape significance	The importance of a landscape to communities as evident either through statutory controls, preference indicators or other reliable objective data.
Landscape value	The term 'landscape value' is used interchangeably with the term 'landscape significance', and in the context of this LVIA the two terms have the same meaning.
Landscape visual sensitivity	The sensitivity of a landscape or seascape to visual impacts arising from a proposed development, determined on the basis of the value or significance of that landscape and the extent to which it is visually exposed to the proposed development.
Receptor	Individuals and/or communities who have the potential to be affected by a proposed development.
Statutory landscape significance	Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in applicable planning schemes or other documents. Can be interchangeably referred to within this LVIA as 'statutory significance'.
Theoretical limit of viewshed extent	The distance from proposed project infrastructure at which the vertical height of the proposed project infrastructure occupies a specified percentage of the vertical field of view.
Viewshed	A theoretical calculation based on 3D terrain modelling that determines areas of land that are potentially visible from a proposed project infrastructure, and conversely, determines land from which the proposed project infrastructure would be visible.
Wireframe photomontage	An accurate presentation of the proposed project infrastructure within ar existing view photomontage which is represented as a coloured outline. The image represents the location/position of the proposal as seen from the viewpoint, including behind existing landform, landscape or built elements.
Zone of theoretical visibility	The total area of land from which there are potential views of a proposed project infrastructure (i.e. land that is within the assessed Viewshed and Theoretical Extent of Visual Exposure).

1 INTRODUCTION

The purpose of this report is to provide a preliminary appraisal of the potential landscape and visual impact arising from the proposed Great Eastern Offshore Wind Project. For the purposes of this exercise, two alternative wind project configurations (or scenarios) have been considered:

- Upside scenario, comprising 179 offshore wind turbines with a maximum tip height of 245 metres above sea level;
- Downside scenario, comprising 100 offshore wind turbines with a maximum tip height of 353 metres above sea level.

1.1 PURPOSE OF THIS REPORT

As the Project is located both within Victorian and Commonwealth jurisdictions, it is being referred under the Environment Effects Act 1978 (Vic) ('EE Act') and the Environment Protection and Biodiversity Conservation Act 1999 (Cth) ('EPBC Act'). The purpose of this report is to assess the potential visual impacts associated with the Project for the purposes of informing and supporting these referrals to determine the potential for significant environmental effects. The purpose of this report is to assess whether there would be visual impacts associated with the Project to inform the EES Referral required for the Project.

This visual appraisal provides a level of information required for the purposes of an EES referral and to support an EPBC referral. The limitations of this appraisal (considered in the context of a full technical assessment) are outlined in Section 4.4 Limitations. A full impact assessment would be prepared for the purposes of an EIA.

As such, this report forms conclusions only on the visibility of the proposed offshore wind project, noting that any proposed visible object can have a visible impact.

A full impact assessment required for an EIA would provide a comprehensive assessment of landscape value and rather than concluding only on the visibility of the proposed offshore windproject, would assess the magnitude of visual impact.

1.2 APPROACH

This report documents the approach to the preliminary visual appraisal undertaken by Hansen Partnership Pty. Ltd. for the purposes of an EES Referral.

PRELIMINARY ANALYSIS AND BASELINE

Existing study area



PRELIMINARY LANDSCAPE CHARACTER & VALUES

- Character assessment
- Landscape values



PRELIMINARY SEASCAPE VISUAL APPRAISAL

- Selected view locations
- Preliminary assessment: is there a visual impact?

The report provides a preliminary outline of existing statutory designations relevant to the assessment, and an assessment of visual appraisal at five representative locations.

The report subsequently provides assessment of whether there would be a visual impact. The preliminary appraisal is grounded on best practice methodology to the extent considered appropriate for the purpose of this report. The methodology is outlined in Section 2 Methodology.

2 METHODOLOGY

2.1 Study area

The study area has been determined through Zone of theoretical visibility (ZTV) assessment, which includes:

- Viewshed mapping, and
- Determination of the Theoretical limit of viewshed extent (TLVE)

It is important to emphasise that the ZTV assessment process undertaken relies on viewshed mapping informed by topographical data only. As such, the ZTV assessment should not be relied upon as a definitive representation of the visibility (or otherwise) of the proposed project infrastructure, but rather should be used to guide the subsequent identification of representative view locations for the preparation of photomontage images, which can be relied upon as definitive representations of visibility and visual impact.

A map of the study area is provided at Figure 3.

2.2 Establishing the study area

2.2.1 Zone of theoretical visibility

2.2.1.1 Viewshed mapping

The following describes the viewshed assessment methodology used to develop the viewshed mapping. This mapping is a digitally-produced graphic representation of areas surrounding the project from which the proposed project infrastructure is potentially visible. This assessment is subsequently used to guide the selection of photomontage view locations.

It is important to emphasise that the viewshed mapping process undertaken is a 'virtual' exercise, which utilises only topographical data to generate viewshed assessment mapping. It does not take into account 'real world' obstacles such as existing or proposed buildings, vegetation and structures which obstruct or reduce views. In this regard, it presents what can be described as a 'worst case assessment', as the presence of existing buildings and vegetation almost always results in a 'real' viewshed being less extensive than a virtual viewshed, for any given point. This Preliminary Visual Appraisal does not consider wind turbines likely to be installed and operated by others within the viewshed of the Great Eastern Offshore Wind Project.

A viewshed is defined as the surface area or terrain visible from a given view location. It is also the area from which that view location or series of view locations may be seen. This is referred to as the 'intervisibility' relationship. The visibility between two points depends on the presence of on-ground obstacles, such as vegetation and buildings along the sight-line which connects the two points. Such obstacles may obstruct or reduce the reciprocal vision of the same two points.

Viewshed mapping involves the use of computer software packages to translate topographical data (i.e. contour lines) into a 3-dimensional digital terrain model. The project was modelled using DEM map data, 3DS Max & Rhino software, and 3D models of the proposed project infrastructure. This information was subsequently used to guide the identification of view locations for which photomontages were generated as a means of demonstrating the visual impact of the project, and the degree to which mitigation of visual impact is required.

2.2.1.2 Theoretical limit of viewshed extent

The study area extents are determined by the theoretical limit of viewshed extent (TLVE). This is a standard measure that determines the distance from proposed project infrastructure at which the vertical height of the proposed project infrastructure occupies a specified percentage of the vertical field of view.

'Human Factors in Design' (Dreyfuss, 1960)¹ provides guidance with respect to the field of view of the human eye, and describes a normal horizontal and vertical field of view as comprising approximately 60 degrees (horizontal) and 20 degrees (vertical).

Noting the ZTV description in the previous section, in the absence of intervening topographical features which would otherwise limit the extent of a particular viewshed, it is theoretically possible for a computer-modelled viewshed to have an infinite extent. To address this, in circumstances where topography does not provide a limit to viewshed extent, a limitation can be applied on the basis of the known characteristics of the human eye field of view. The 3D terrain model used to determine the TLVE does take into account earth curvature, and the photomontages prepared to inform the assessment also allow for curvature of the earth in the modelling which underpins their preparation.

For this LVIA, an assumption has been made that any object which occupies less than 5% of the human eye vertical field of view (equivalent to 1 degree) is unlikely to result in an unacceptably-high visual impact, due to the relatively small proportion of the total field of view it would occupy.

A 1-degree vertical angle measured from an origin point to a horizontal distance of 1 kilometres yields a height at that distance of 17m above the level of the origin point. Conversely, an object of that height, at a distance of 1 kilometres from an origin point (or viewing point) would occupy a vertical field of view not greater than 1 degree (or 5% of the vertical field of view).

Within these extents, potential sensitive receptors are identified as having a range of visual exposure ranging from 'very low' to 'very high'. This relationship can hence be applied to any structure with a vertical height and used to determine an appropriate viewshed extent.

Review of the potential cause and effect pathways for visual impacts identified that the key issues and impacts are more likely to result during the project's operation phase because of the introduction of offshore wind assets within the seascape, including views of the assets from potentially sensitive viewpoints, such as within Wilsons Promontory National Park. There is also the potential for the presence of onshore transmission assets such as substations and overhead transmission lines to result in a potential visual impact to nearby rural residents, depending on final design and siting of infrastructure.

For the purposes of this LVIA, the TLVE has been calculated for each relevant project component:

• Offshore wind project infrastructure: based on all turbine tip heights at a maximum of 353-metres above sea level, a maximum TLVE would be 21 kilometres. For turbine tip heights of 245 metres, the TLVE would be 15km.

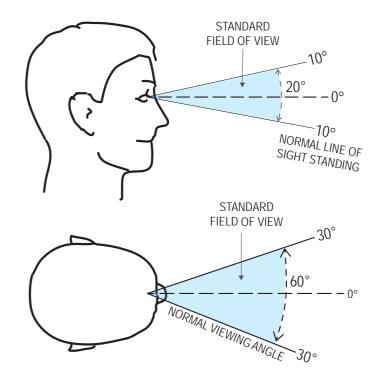


Figure 1 Field of view diagram

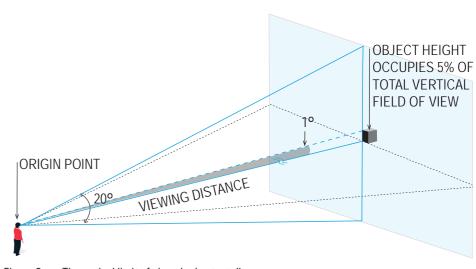
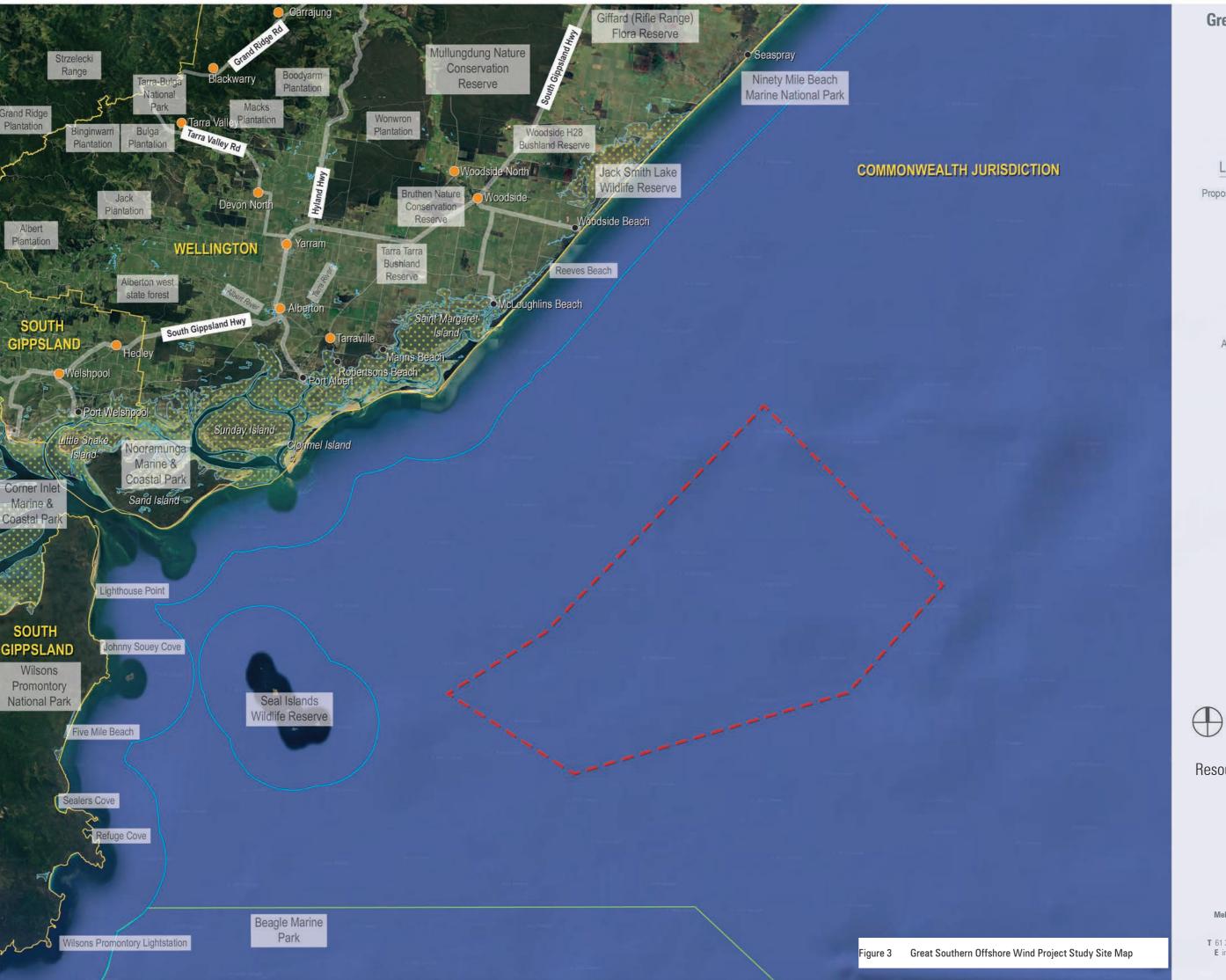


Figure 2 Theoretical limit of viewshed extent diagram

^{1 &#}x27;Human Factors in Design', Dreyfuss 1960



Great Eastern Offshore Wind Project LVIA

Study area map



Proposed turbine layout area

Municipality boundary

Major roads

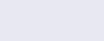
Inland settlements

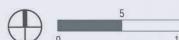
Coastal settlements

State water boundary

Australian Marine Parks

Ramsar Wetlands





Resource: Google Statellite

Project Ref: 22.295
Dwg No.: LVIA-1
Scale 1:300,000
Date: 16/02/2023
Revision: P2

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2.3 Visual appraisal method

The landscape and visual appraisal methodology is summarised in Figure 4.

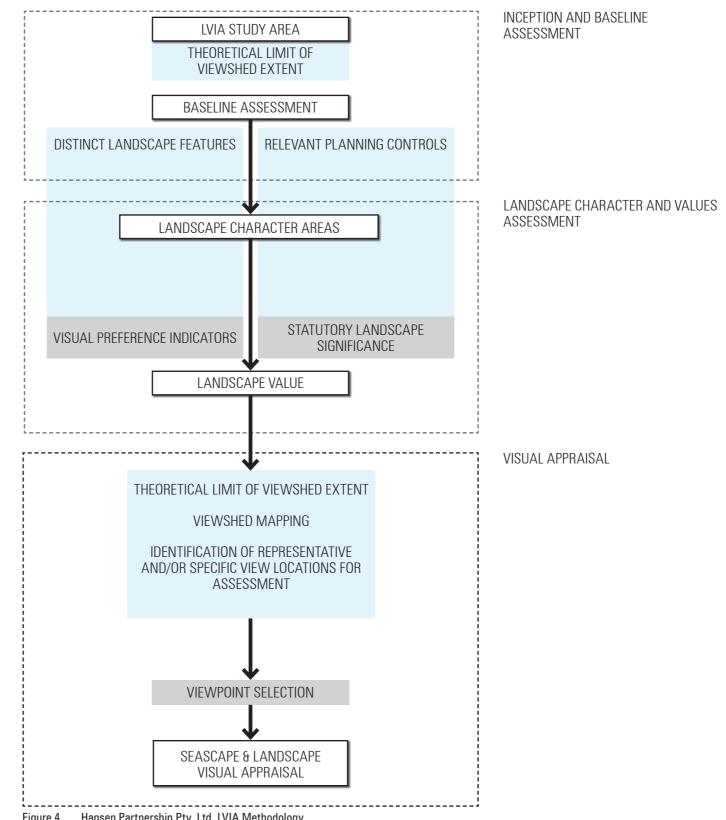


Figure 4 Hansen Partnership Pty. Ltd. LVIA Methodology

2.4 Existing conditions assessment

2.4.1 Landscape character assessment

Landscape character assessment is a key tool for understanding the overall character of the landscape in the terrestrial study extent, including distinctions between Landscape character types based on the particular combinations of elements and perceptual aspects that make each area distinctive.

For the purposes of this preliminary visual appraisal, guidance is taken primarily from the *Coastal Spaces Landscape Assessment Study (Department of Sustainability and Environment, 2006)*, a reference document common to all Victorian planning schemes including Wellington Planning Scheme and South Gippsland Planning Scheme, which identifies and describes landscape character types based on broad areas of common physical, environmental and cultural characteristics.

2.4.2 Landscape value

This section of the assessment aims to assess the existing landscape value of the study area and surrounding landscapes in an objective manner. Guidance is taken primarily from the *Coastal Spaces Landscape Assessment Study* (2006), which classifies landscapes within the study area as being of either local, regional or state significance.

For the purposes of this preliminary visual appraisal, the following assumptions are made:

- Landscapes which are identified as being or regional or state significance are considered to be of high value;
- Landscapes which are identified as being of local significance are considered to be of moderate value, and
- All other landscapes within the study area are considered to be of low value.

Guidance is also taken from the Wellington and South Gipplsand Planning Schemes, with landscapes which ar recognised by a Significant Landscape Overlay (SLO) considered to be of high value.

2.5 Visual appraisal

2.5.1 Visual exposure

The visual exposure of landscapes and seascapes within the study area is determined through viewshed mapping.

Relative levels of visual exposure to proposed project infrastructure are determined by individually mapping the viewshed extent of the proposed project structures and subsequently overlapping the individual viewsheds to develop an appreciation of the cumulative viewshed of project infrastructure.

Landscapes within the study area which fall within the viewshed of a relatively high proportion of the proposed project structures are identified as having high or very high levels of visual exposure to the project, whereas landscapes within the study area which fall within the viewshed of a relatively low proportion of the proposed project structures are identified as having low or very low levels of visual exposure to the project.

2.5.2 Viewpoint selection

For the purpose of a preliminary visual appraisal, five view locations were selected for consideration in the preliminary report on the basis that they:

- comprise of public vantage points in locations where higher concentrations of people are anticipated by virtue of their proximity to existing recreational, commercial and civic facilities: and/or
- contain public vantage points in locations with significant statutory landscape significance.

These five locations are detailed in Section 4.6 Assessment of visual appraisal from representative view locations of this report.

Community consultation would be sought at a future stage in order to identify additional view locations for a full visual impact assessment.

3 LANDSCAPE CHARACTER AND VALUES ASSESSMENT

3.1 Introduction

This section of the report focuses on describing the landscape character of the LVIA study area by identifying the main characteristics of the landscape. This assessment has adopted the *Coastal Spaces Landscape Assessment Study* landscape character descriptions.

3.2 Landscape character types

South Gippsland Coastal Plain

Landscape Character Area 1.5: Waratah Bay / Corner Inlet

This low-lying, flat Character Area covers a long stretch of varied coastline at the gateway to Wilsons Promontory. The area exhibits a strong and open rural character wedged between the dramatic topographies of the lower Strzelecki Range and Wilsons Promontory. Scenic coastal landforms and extensive views to the Promontory provide valued visual links to natural landscapes. To the north, the Strzelecki Range and Mount Hoddle form the boundary and create prominent landscape features adjoining the flat plains. Low-density development is scattered throughout, with several small lifestyle settlements on the coast and medium sized rural towns in the east.

Strzelecki Highlands

Landscape Character Area 3.2: Welshpool Hills and Mount Hoddle

This hilly Character Area stretches from Waratah Bay almost to Yarram and is part of the Strzelecki Range landform that extends inland to Warragul and west to the Bass Hills. The southern edge rises sharply from flat coastal plains, forming the topographic 'amphitheatre' setting to Corner Inlet. Mount Hoddle and the Welshpool Hills are prominent and regionally significant landforms that are highly visible backdrops to coastal and coastal hinterland areas from Yarram to Waratah Bay, while Mount Hoddle is visible as far west as Tarwin Lower and Venus Bay. While much of the Character Area has a cultural landscape quality, contributed to by a pattern of cleared land and exotic vegetation, there is a distinct absence of built elements in prominent locations, with the exception of a wind energy facility north of Toora.

Wilsons Promontory Granite Coast

The Coastal Spaces Landscape Assessment Study provides the following advise with respect to Wilsons Promontory National Park.

Character Areas have not been delineated for this landscape Character Type as it is located entirely within a National Park, and was outside the area of detailed field survey.

Gippsland Plains

Landscape Character Area 6.1: Gippsland Lakes Plains

This is a flat to gently undulating mostly pastoral Character Area adjoining the Gippsland Lakes. Large inland waterbodies including Lake King, Lake Victoria and Lake Wellington are the major landscape features, the edges of which are locations of increasing pressure for recreational uses and settlements. Very flat topography provides open and expansive views. Although there are few topographic features to break up the expansive plains, scattered vegetation and settlements create points of variation to the character.

Landscape Character Area 6.2: Ninety Mile Coast

In this Character Area, recent coastal and alluvial landforms have formed a series of narrow spits and peninsulas which separate the Bass Strait Coast at Ninety Mile Beach from the extensive inland lakes system of the Gippsland Lakes. There is an unspoilt natural character to the northern half of the Character Area, where extensive indigenous coastal vegetation dominates and the intersection of landforms and lakes creates a scenic setting to minor settlements and recreation locations. In the south, the Character Area has been substantially cleared and less dramatic landform and a low-density scattering of built development creates a uniform rural character to the coast edge.

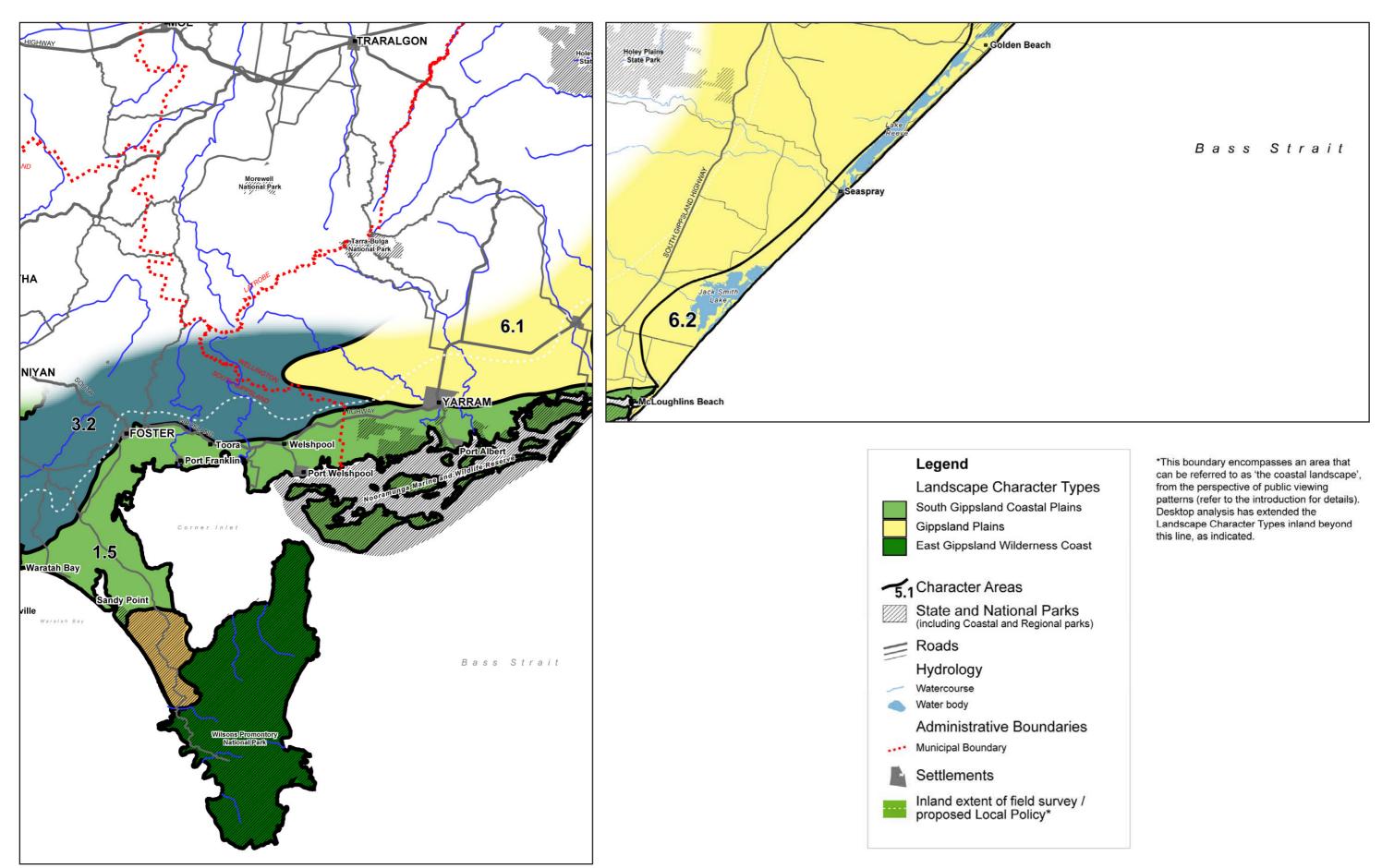


Figure 5 Coastal Spaces Landscape Assessment Study Landscape character Types and Areas: Gippsland Region (not to scale) Source: Coastal Spaces Landscape Assessment Study (Department of Sustainability and Environment, 2006)

3.3 Landscape value

3.3.1 Introduction

This section of the assessment aims to assess the existing relative landscape value of the project site and surrounding landscapes by adopting the assessment work from background documents, primarily *Coastal Spaces Landscape Assessment Study*. Consideration of relevant controls within the Wellington and South Gippsland Planning Schemes - specifically the presence of Significant Landscape Overlays - has also assisted in determining appropriate levels of landscape value.

The significance levels are:



High = state or regional significance designation in Coastal Spaces Landscape Assessment Study and/or the presence of Significant Landscape Overlays



Moderate = local significance designation in Coastal Spaces Landscape Assessment Study



Low = other landscapes within the study area

3.3.2 State Significance

3.3.2.1 Wilsons Promontory

- Potentially of National Significance in the National context
- Visually significant for its many landscape features such as white sandy beaches set in remote and secluded coves, granite boulders tumbling into the sea, rugged mountains close to the coast
- Characterised by a coverage of dense and diverse vegetation ranging from temperate rainforest to swamps and heathland, and for its mainland and wild coastal views
- Valued by the community for its almost entirely undeveloped character and the near wilderness experience it offers

Preliminary landscape value

HIGH

3.3.2.2 Nooramunga Coast & Islands

- Visually significant as a coastal area and chain of small sand islands that protect mangroves and mudflats from the wild seas of Bass Strait
- Characterised by coastal barriers, spits, sandy islands and extensive mudflats, as well as rare and endangered plant species
- Valued by the community for panoramic out-views of Wilsons Promontory, particularly from Snake Island

Preliminary landscape value

HIGH

3.3.2.3 Gippsland Lakes

- Visually significant as an unique estuarine environment with a network of lakes fringed by Ninety Mile Beach and extensive coastal dune systems
- Characterised by the prominent water features of Lakes Victoria and Wellington, and a collection of islands and small peninsulas
- Valued by the community as a recreation resource, and for the diverse array of flora and fauna

Preliminary landscape value

HIGH

3.3.3 Regional Significance

3.3.3.1 Corner Inlet Amphitheatre

- Visually significant as a collection of landscape features Mount Hoddle and the Welshpool Hills providing an amphitheatre setting for Corner Inlet and Wilsons Promontory
- Characterised by expansive views across the coastal plains to Wilsons Promontory, its looming shape dominating the scene
- Valued by the community as a bird habitat of international importance, and for its plant life and historically significant relics of Aboriginal occupation

Preliminary landscape value

HIGH

3.3.4 South Gippsland Shire Planning Scheme Significant Landscape Overlays

Significant Landscape Overlay - Schedule 3 - Corner Inlet Amphitheatre

In relation to visual and Landscape values, this schedule to the SLO recognises that Mount Hoddle and the Welshpool Hills are prominent landforms that provide an amphitheatre setting for Corner Inlet and Wilsons Promontory, with the entire landscape unit being of regional significance.

The relevant objectives of the overlay are to:

- To maintain and improve indigenous vegetation, particularly at roadsides and in riparian strips throughout the landscape.
- To protect indigenous coastal vegetation and ensure that it is the dominant feature of the landscape, particularly when viewed from the foreshore.
- To protect cultural vegetation patterns in the landscape.
- To protect locally significant views and vistas that contribute to the character of the landscape, including open views to Wilsons Promontory, the Welshpool Hills and Mt Hoddle.
- To protect the rural character and views that create a scenic 'gateway' to Wilsons Promontory (especially along Foster Promontory Road).
- To ensure that development in and around settlements does not impact on the characteristics of the landscape, including key views and viewing opportunities.
- To manage development at the coastal edge of settlements so that the intact, natural, coastal character is the dominant feature of the landscape i.e. the Corner Inlet mangrove coastal edge of Port Albert and Port Welshpool and the Waratah Bay dunal coastal edge of Waratah Bay and Sandy Point.
- To ensure buildings and structures sit within, rather than dominate the landscape.
- To ensure that long stretches of the coastal strip remain free of development of any kind.
- To reduce the visibility of buildings or structures, within the coastal strip, outside settlements
- To retain the open, rural character of the hinterland landscape.
- To minimise the visual intrusion of infrastructure and signage, particularly between settlements.
- To protect Landscape character and attributes that are consistent with the Aboriginal cultural heritage values of the area.
- To recognise, and protect, the landscape of the Corner Inlet Amphitheatre as a place of significant Aboriginal cultural heritage value.

3.3.5 Wellington Shire Planning Scheme Significant Landscape Overlays

Significant Landscape Overlay - Schedule 1 - Ninety Mile Beach

Ninety Mile Beach is protected by SLO1 on the basis of its unique combination of landscapes and the visual values. The land is protected by a series of official designations - National Park, Wildlife Reserve, and Coastal Park - that recognise its scenic values. The landscape is characterised by large swathes of indigenous vegetation including coastal heath, mangroves, and dune grasses, and there are vast ocean views along its entirety.

The relevant character objectives of this protective overlay to the proposed development are:

- To strengthen and protect indigenous coastal vegetation and ensure that it is the dominant feature of the landscape at the coastal edge.
- To ensure that development in and around existing settlements does not impact on the characteristics of the landscape, including the natural and unbuilt character along Ninety Mile Beach
- To minimise any increase in development visible above the dunes and coastal vegetation outside settlements, when viewed from the beach, foreshore or offshore.
- To avoid buildings set high on dunes or development that will be visible on the skyline.
- To minimise the visual impact of signage and infrastructure adjacent to Ninety Mile Beach or in areas of high visibility
- To protect Landscape character and attributes that are consistent with the Aboriginal cultural heritage values of the area.

3.3.6 Summary of statutory controls

None of the land identified within the Coastal Spaces Landscape Assessement Study as being of State or regional signficance is within the identified TLVE of the proposed wind project.

None of the land affected by SLO3 under the South Gippsland Planning Scheme or SLO1 under the Wellington Planning Scheme is within the TLVE of the proposed wind project.

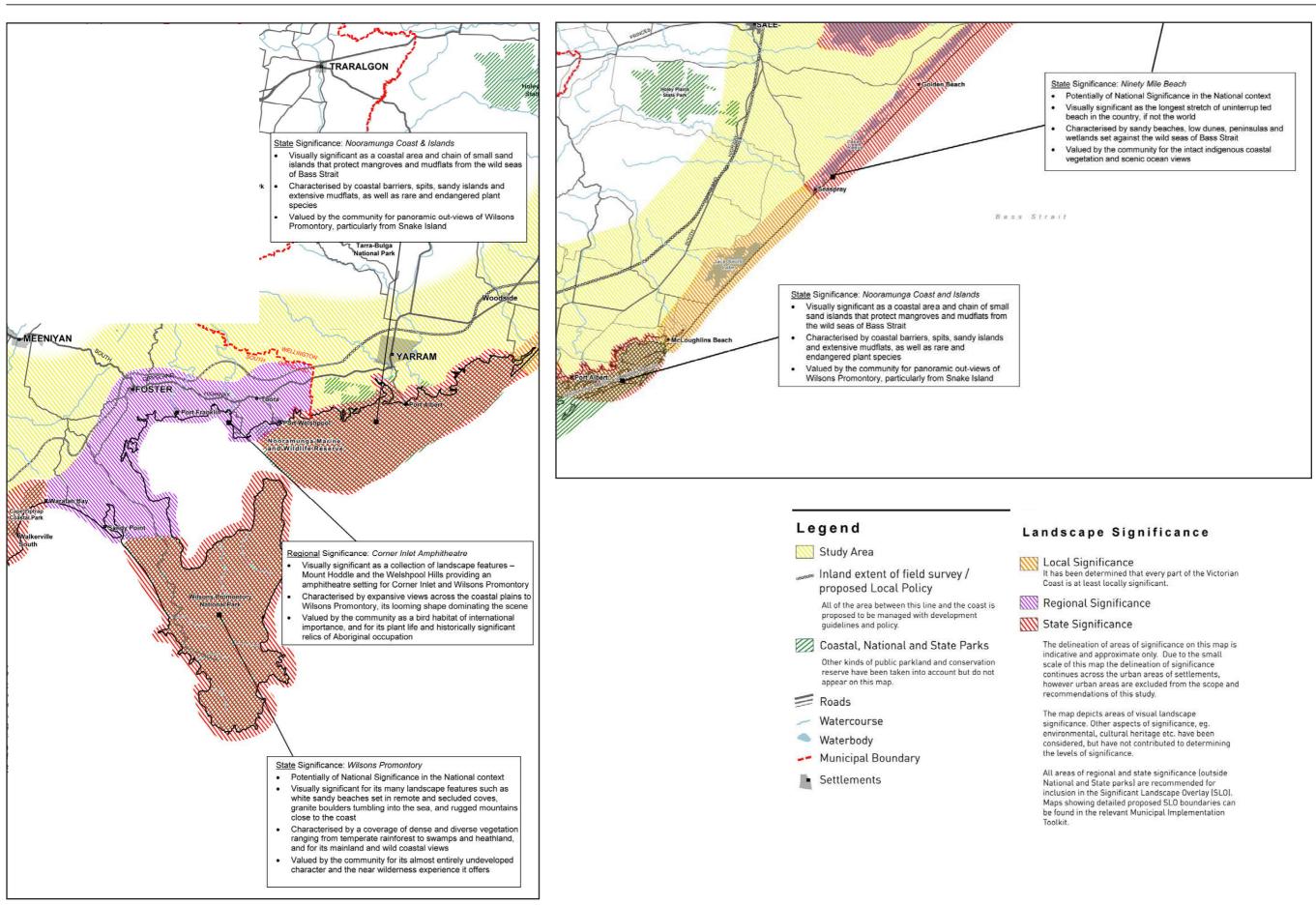


Figure 6 Coastal Spaces Landscape Assessment Study (Department of Sustainability and Environment, 2006)

4 PRELIMINARY VISUAL APPRAISAL

4.1 Introduction

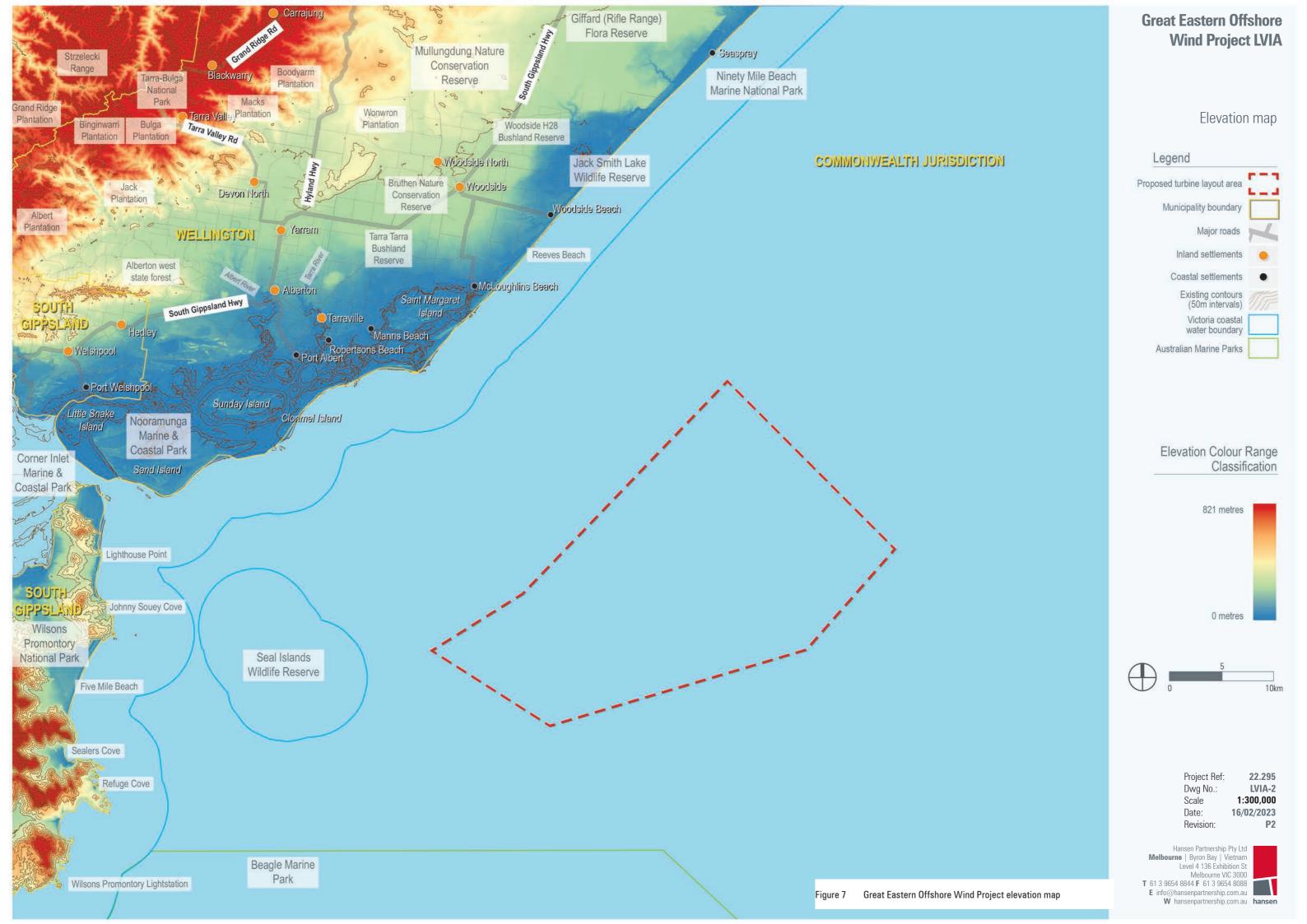
The following section has been undertaken on the basis of the methodology outlined in the previous section of this report to provide a preliminary appraisal of the potential landscape and visual impact arising from the proposed Great Eastern Offshore Wind Project. For the purposes of this exercise, two alternative wind project configurations (or scenarios) have been considered:

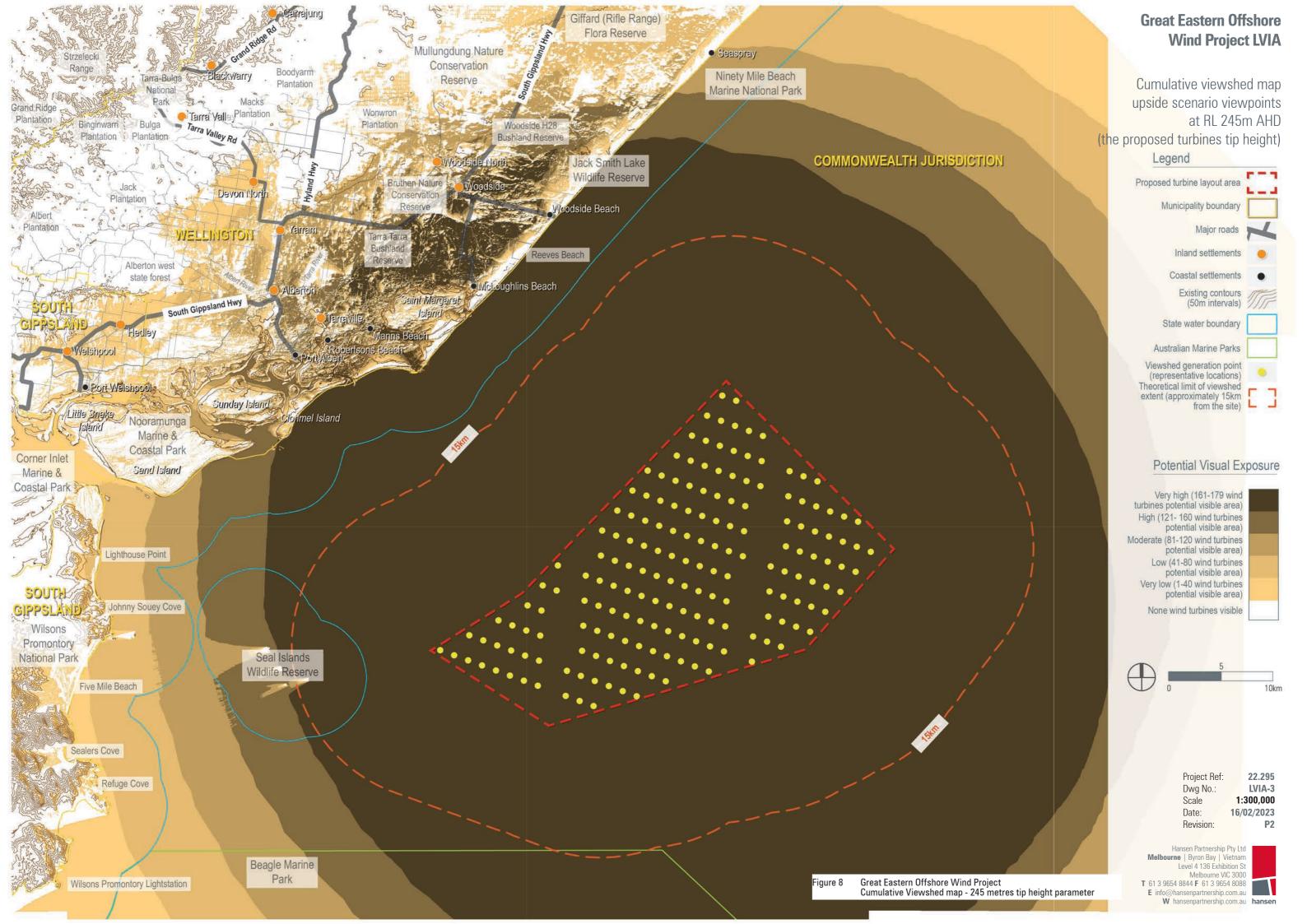
- Upside scenario, comprising 179 offshore wind turbines with a maximum tip height of 245 metres above sea level; and
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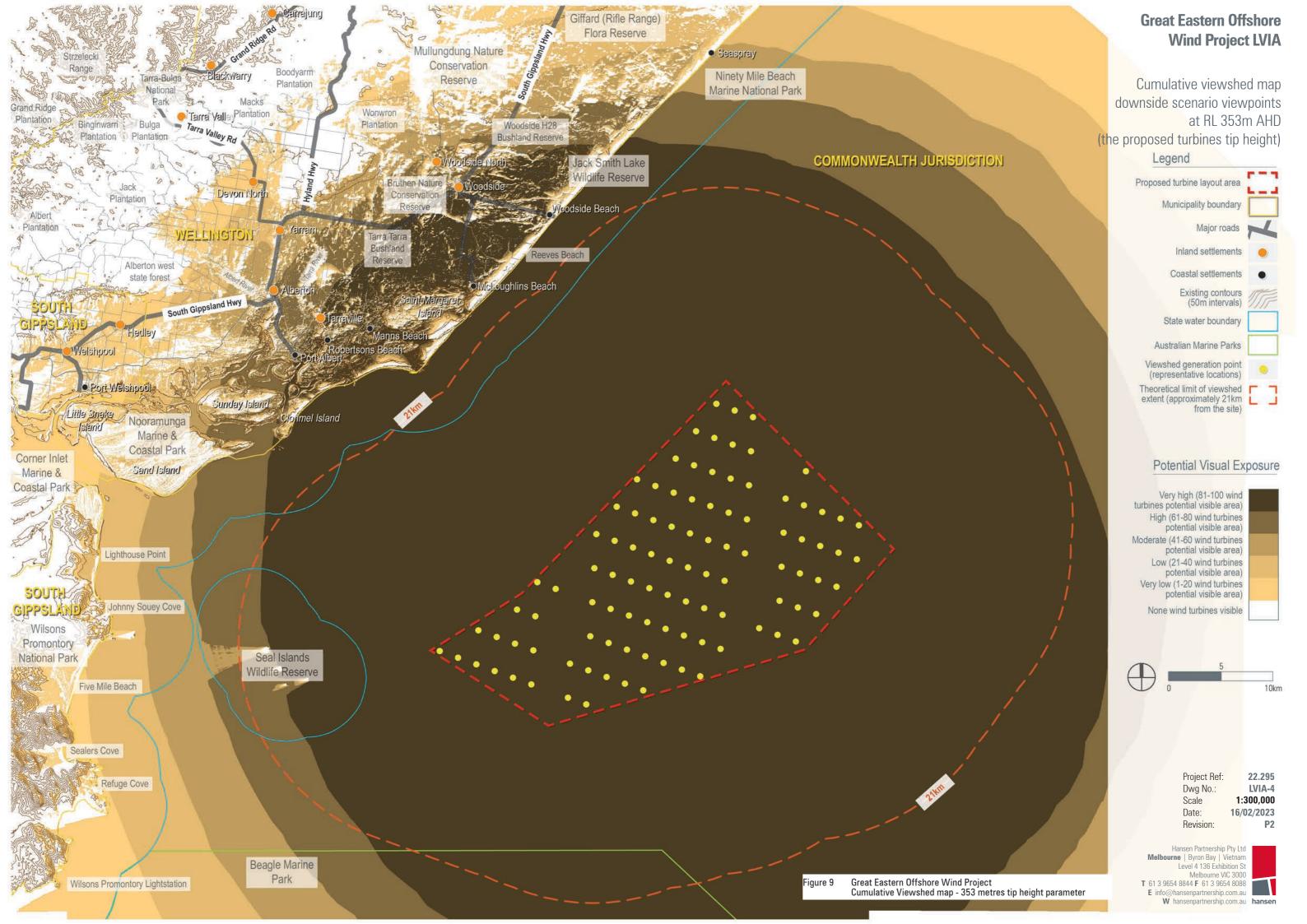
4.2 Visual exposure

Viewshed mapping - to determine the potential visual exposure of landscapes within the study area to proposed project offshore wind turbines- has been prepared in accordance with the methodology outlined in Section 2.

The results of the potential visual exposure mapping - for each of the two wind project scenarios under consideration - are provided in Figures 8-9 on the following pages.







4.3 Preliminary visual appraisal

This section of the report aims to determine whether there is a visual impact incurred due to the proposed development, through the process of undertaking the following:

- Identifying and describing the representative views from each of the five view locations considered for this preliminary appraisal: Seaspray, Woodside Beach, Port Albert, Wilsons Promontory Lightstation and Five Mile Beach; and
- Preparing an 'existing view' image for each of the five view locations, that is representative of views experienced at these locations. This is a photograph taken with a fixed 50mm camera lens with a 100 degree horizonal field of view, and a 26 degree vertical field of view.

Using these 'existing view' images as points of reference, the impacts occured will be described and the preliminary appraisal formed on this basis will conclude whether or not a visual impact would occur for each representative viewpoint.

4.4 Limitations

Due to the preliminary nature of this report, the extent of the assessment has been limited to that required for the purposes of an EES referral and to support an EPBC referral form. Therefore, the following areas of assessment which would typically be included in a full SLVIA or LVIA have not formed a part of the processes in determining preliminary appraisal:

- Landscape value has been assessed in section 2.7 through desktop review adopted from Coastal Spaces Landscape Assessment Study. Determining the Landscape value informs the extent to which a view location may be impacted upon visually by the proposed development. As such, this preliminary appraisal forms conclusions only on the presence of visual impact, rather than the magnitude of visual impact.
- The number of view locations assessed within this report is limited to five representative view locations only. Community consultation would be sought in order to determine a larger number of view locations for assessment in a full SLVIA report.
- Photomontages showing the 'proposed view' have not been prepared for this
 preliminary report. In lieu of this, the report provides descriptions of the anticipated
 visibility based on assumed heights of the WTGs (refer to section 6.3 Proposed Wind
 Turbine Generators) and the distances calculated between the proposed development
 and view location.
- Recommendations for appropriate measures to assist in ameliorating any resultant visual impact are not provided within this preliminary appraisal.

4.5 Assumptions

Proposed Wind Turbine Generators (WTGs)

The description of the visibility of the proposed WTGs is based upon the assumption there will be two alternative wind project configurations (or scenarios) have been considered:

- Upside scenario, comprising 179 offshore WTGs with a maximum tip height of 245 metres above sea level; and
- Downside scenario, comprising 100 offshore WTGs with a maximum tip height of 353 metres above sea level.

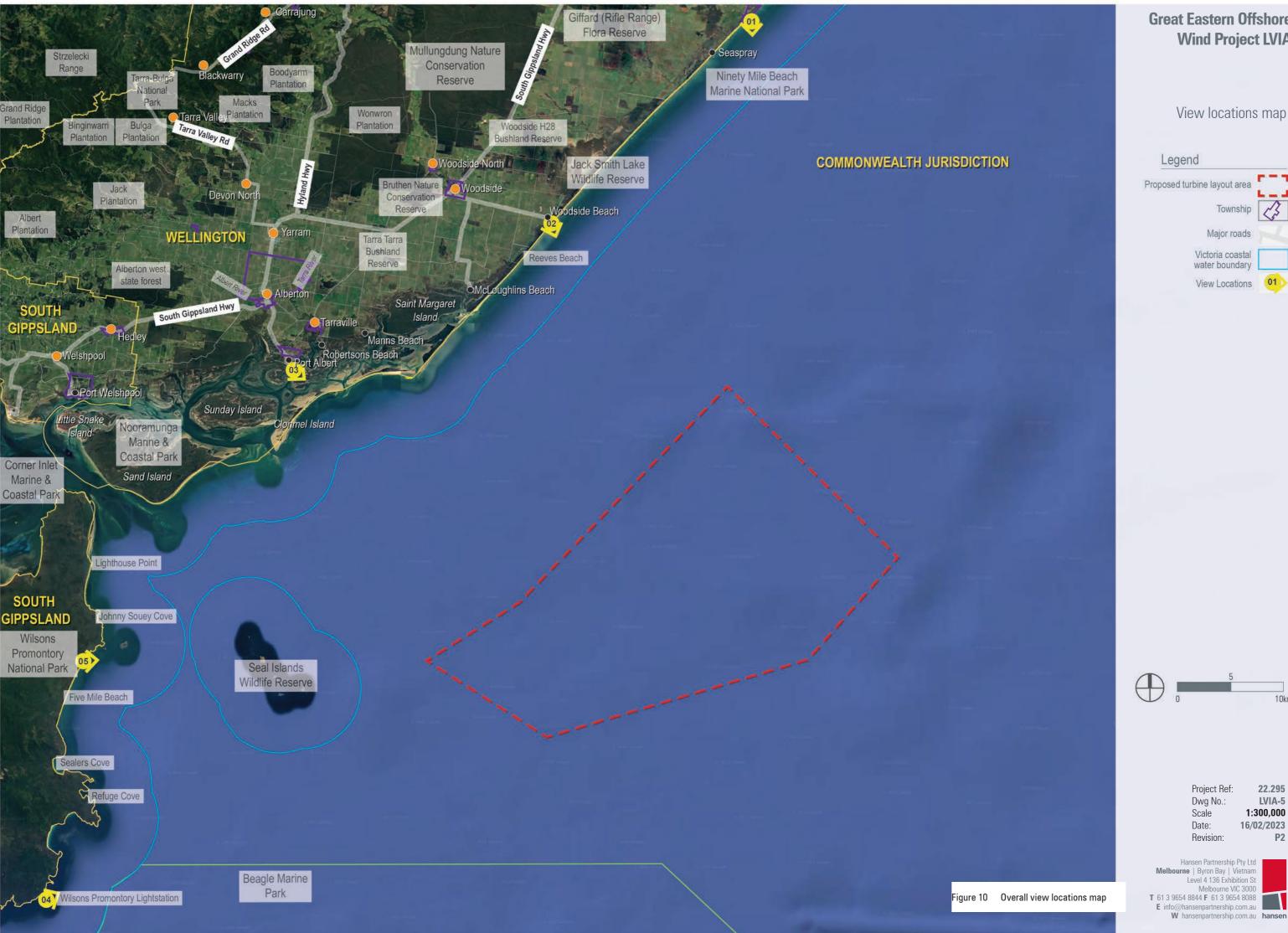
4.6 Appraisal of visual impact from representative view locations

Five representative view locations have been selected and 'existing view' images prepared for each as a basis for description of the visibility of the proposed offshore wind project. The preliminary appraisal of two representative view locations for each scenario includes:

- View location 1 located at Seaspray is 36.15 kilometres from the proposed offshore wind project.
- View location 2 located at Woodside Beach is 23.49 kilometres from the proposed offshore wind project.
- View location 3 located at Port Albert is 31.59 kilometres from the proposed offshore wind project.
- View location 4 located at Wilsons Promontory Lightstation is 43.35 kilometres from the proposed offshore wind project.
- View location 5 located at Five Mile Beach is 33.42 kilometres from the proposed offshore wind project.

The overall view locations map is provided in Figures 10 on the following pages.

A detailed description of the location, existing visual features, and visibility of the proposed offshore wind project within the existing view is provided for each of the above view locations over the following pages.



Great Eastern Offshore Wind Project LVIA

View locations map



22.295 LVIA-5 1:300,000 16/02/2023

4.6.1 View location 01: Seaspray

Location

View location 01 is at Seaspray near Seaspray Surf Life Saving Club. The view is oriented to the south towards the proposed offshore wind project project infrastructure, with the closest turbines being approximately 36.15 kilometres from the view location.

Visual features

The following description of the existing view is based upon the view shown in Figure 12: View location 1: Existing View

Existing view is a beach side township context, comprising an open vista of Bass Strait with foreground buildings and other structures visible. Coastal vegetation is present on the sand dunes from which the view is seen but is less visually-prominent than the visible structures.

Rationale for selection

The view location is within a landscape of high value, on the basis that it is within the Ninety Mile Beach and is located within a landscape of State Significance as described within the *Coastal Spaces Landscape Assessment Study*.

The view location is within the potential viewshed of the proposed project infrastructure (refer mapping at section 3.2) and is considered to be representative of views towards the proposed offshore wind project from Seaspray township.

Anticipated visibility

Turbines are likely to be visible on the horizon in a southern direction, between bearings of 165 degrees and 205 degrees. Given the turbine locations are at least 36km from the viewing point, they will likely occupy no more than 1.5% of the vertical angle of view, with the base of all turbines being beyond the horizon.

Preliminary visual appraisal:

On the basis of the anticipated visibility described above, this assessment concludes that turbines will be visible, and therefore, the proposed offshore wind project will result in a visual impact. The magnitude of this impact will be assessed through a full LVIA as part of ongoing planning and project development work.

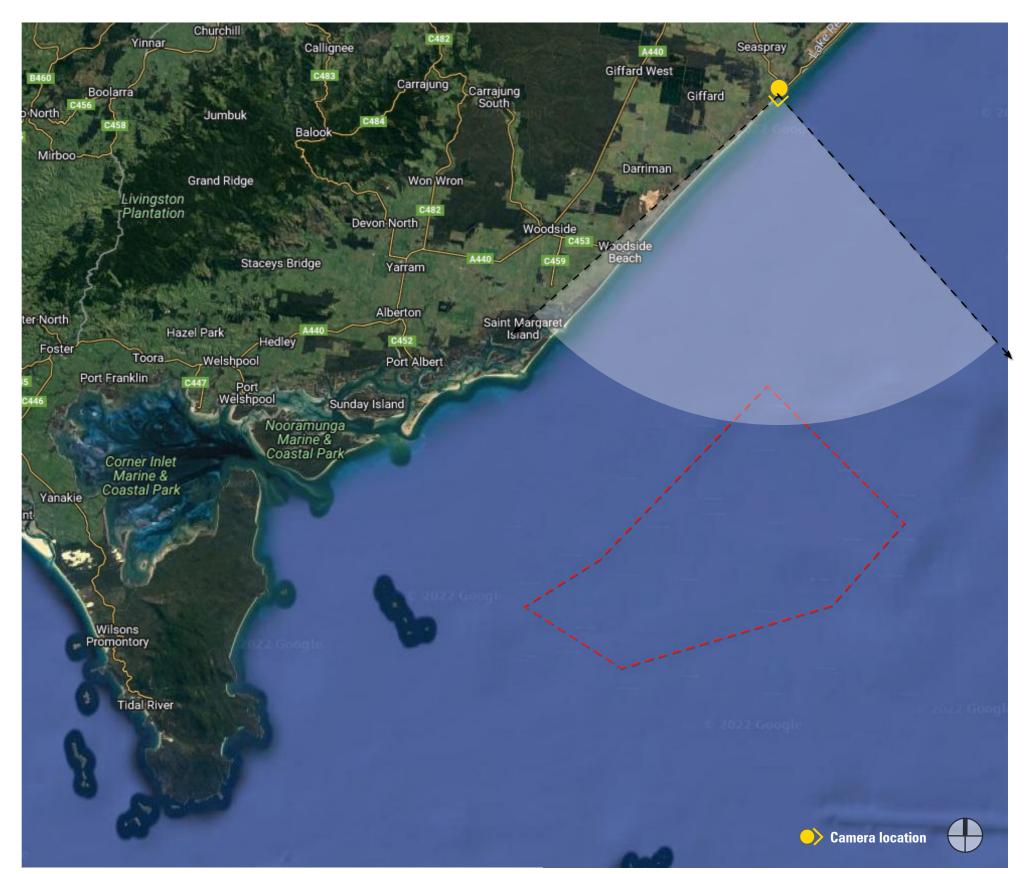
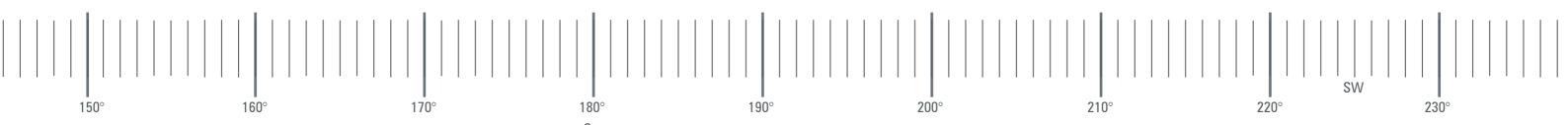


Figure 11 Seaspray preliminary visual appraisal





Figure 12 View location 01: Existing view



View Location 01 - Seaspray - Facing south towards proposed turbines.

Photomontage created by:

OZ - 3D Visualizer

Images created using:

3ds max 2023, Vray 5, autocad 2023, adobe photoshop, illustrator & indesign cc 2022

Method used to collect relevant data:

Photo locations surveyed on site by Geocomp

Consulting pty ltd on 17/11/22 Camera:

Canon EOS 5Ds Digital SLR

Camera lens: Canon EF 50mm f/1.8 USM

Photograph taken:

04.14pm on 17/11/22

View location 01:

- **e**: 516388.9210
- **n**: 5752061.5080
- **rl**: 8.0930

Approx. distance to proposed wind farm



Project ref: 2022/0295 **Dwg no.:** VIA-001 **Date:** 03/12/22 Revision: P1

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4.6.2 View location 02: Woodside Beach

Location

View location 02 is at Woodside Beach near Public Toilets Playground, Car Park, BBQ area. The view is oriented to the south towards the proposed offshore wind project project infrastructure, with the closest turbines being approximately 23.49 kilometres from the view location.

Visual features

The following description of the existing view is based upon the view shown in Figure 18: View location 2: Existing View

Existing view is a beach side context, comprising an open vista of Bass Strait with foreground coastal vegetation present on the sand dunes and ramp structure visible.

Rationale for selection

The view location is within a landscape of moderate value, on the basis that it is located within a landscape of local significance as described within the *Coastal Spaces Landscape Assessment Study*.

The view location is within the potential viewshed of the proposed project infrastructure (refer mapping at section 3.2) and is considered to be representative of views towards the proposed offshore wind project from Woodside Beach township.

Anticipated visibility

Turbines are likely to be visible on the horizon in a southern direction, between bearings of 135 degrees and 195 degrees. Given the turbine locations are at least 23km from the viewing point, they will likely occupy no more than 3% of the vertical angle of view, with the base of all turbines being beyond the horizon.

Preliminary visual appraisal:

On the basis of the anticipated visibility described above, this assessment concludes that turbines will be visible, and therefore, the proposed offshore wind project will result in a visual impact. The magnitude of this impact will be assessed through a full LVIA as part of ongoing planning and project development work.

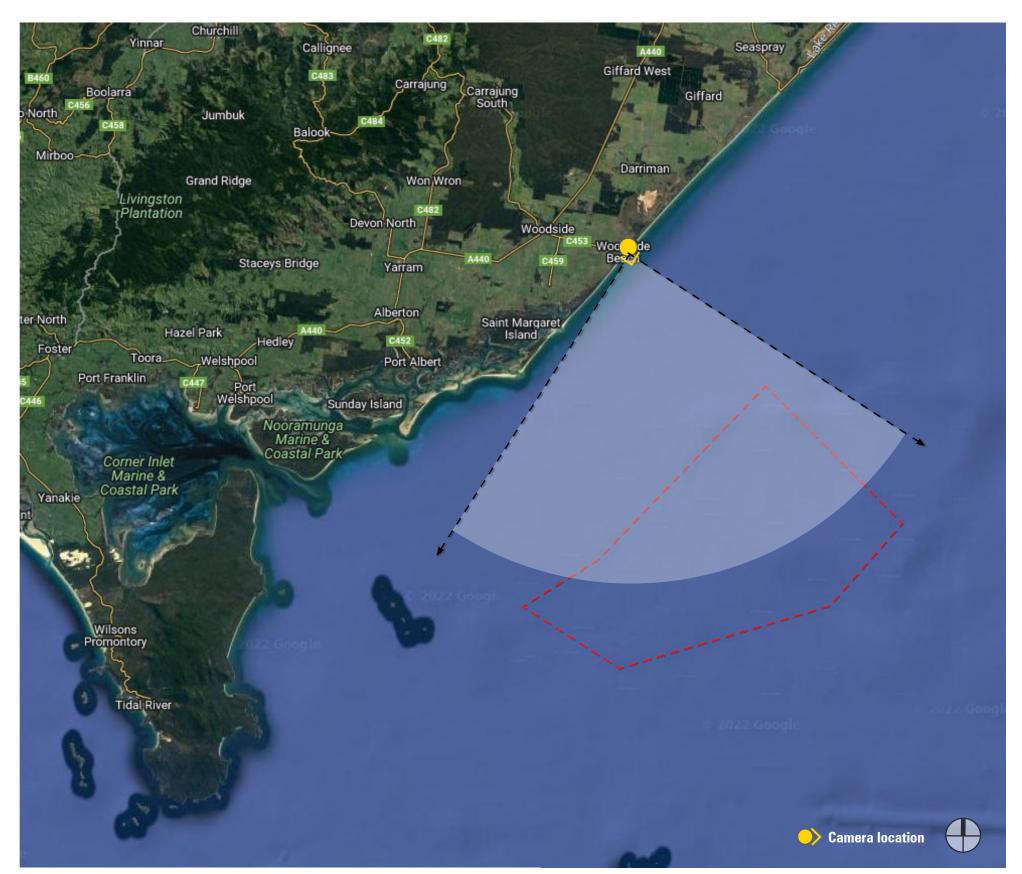


Figure 13 Woodside Beach preliminary visual appraisal





Figure 14 View location 02: Existing view



View Location 02 - Woodside Beach - Facing south towards proposed turbines.

Photomontage created by:

OZ - 3D Visualizer

Images created using:

3ds max 2023, Vray 5, autocad 2023, adobe photoshop, illustrator & indesign cc 2022

Method used to collect relevant data:

Photo locations surveyed on site by Geocomp Consulting pty ltd on 17/11/22

Canon EOS 5Ds Digital SLR

Camera:

Camera lens: Canon EF 50mm f/1.8 USM

Photograph taken:

05.20pm on 17/11/22

View location 02:

e: 498074.3620

n: 5732955.6450

rl: 6.4150

Approx. distance to proposed wind farm



Project ref: 2022/0295 **Dwg no.:** VIA-006 03/12/22 Date: Revision: P1

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4.6.3 View location 03: Port Albert

Location

View location 01 is at Port Albert near Port Albert Wharf Fish & Chips shop. The view is oriented to the south-east towards the proposed offshore wind project project infrastructure, with the closest turbines being approximately 31.59kilometres from the view location.

Visual features

The following description of the existing view is based upon the view shown in Figure 14: View location 3: Existing View

Existing view is a coastal township context, with park furniture, bollards and paving associated with a coastal promenade being visible structures. Distant vegetation on the coastal islands which separate the sheltered estuarine waters in the foreground from the open ocean beyond is visible and defines the backdrop to the view. The broad estuarine waters are a visually-dominant feature, however the open waters of Bass Strait beyond the coastal islands are not visible. A small number of marine navigation structures are visible.

Rationale for selection

The view location is within a landscape of high value, on the basis that it is within the Nooramunga Coast & Islands and is located within a landscape of State Significance as described within the *Coastal Spaces Landscape Assessment Study*.

The view location is within the potential viewshed of the proposed project infrastructure (refer mapping at section 3.2) and is considered to be representative of views towards the proposed offshore wind project from Port Albert township.

Anticipated visibility

Turbines are likely to be visible on the horizon in a south-easterly direction, between bearings of 94 degrees and 155 degrees. The turbine locations are at least 31.59km from the viewing point. Where turbines are visible, the lower parts of structures are screened from view by vegetation on the coastal islands with only the upper parts of towers and the turbine blades visible.

Preliminary visual appraisal:

On the basis of the anticipated visibility described above, this assessment concludes that turbines will be visible, and therefore, the proposed offshore wind project will result in a visual impact. The magnitude of this impact will be assessed through a full LVIA as part of ongoing planning and project development work.

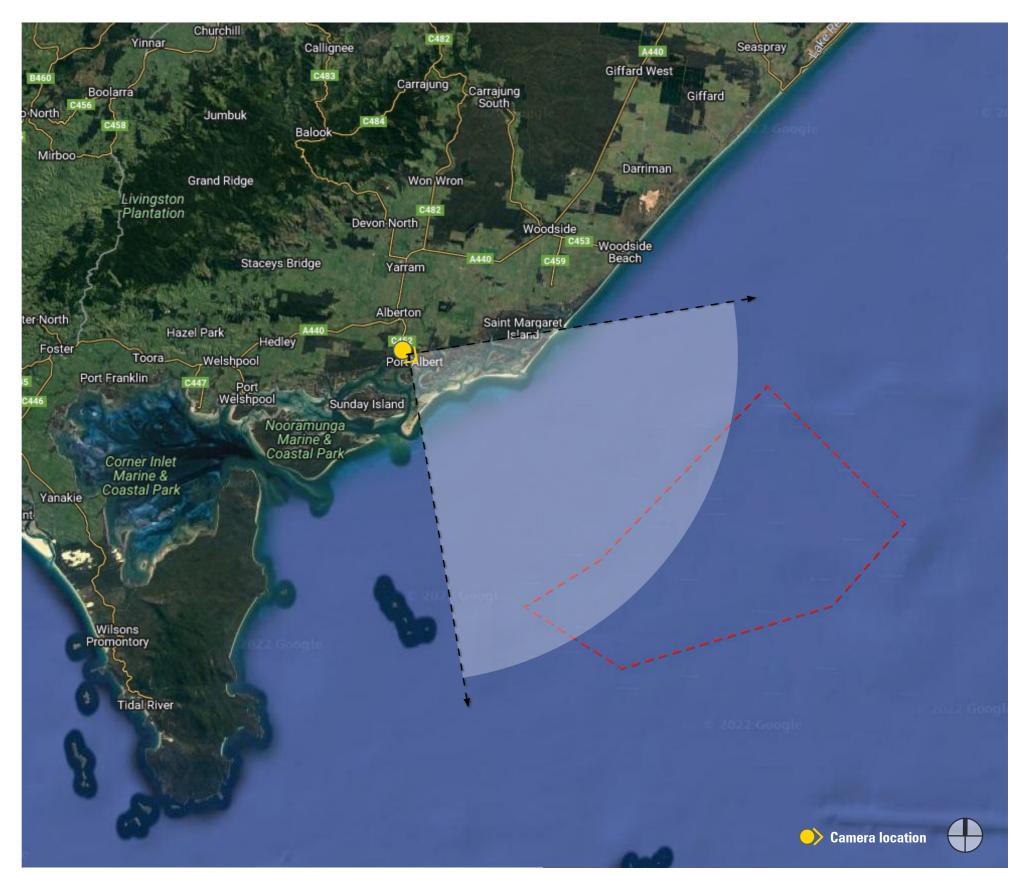


Figure 15 Port Albert preliminary visual appraisal

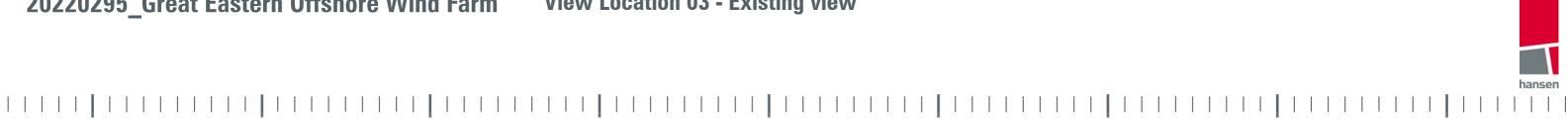
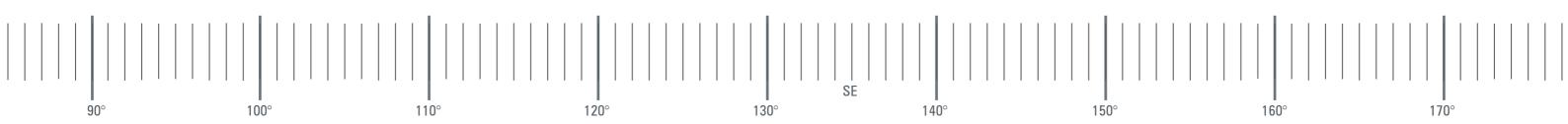




Figure 16 View location 03: Existing view



View Location 03 - Port Albert - Facing south east towards proposed turbines.

Photomontage created by:

OZ - 3D Visualizer

Images created using:

3ds max 2023, Vray 5, autocad 2023, adobe photoshop, illustrator & indesign cc 2022

Method used to collect relevant data:

Photo locations surveyed on site by Geocomp Consulting pty ltd on 17/11/22

Canon EOS 5Ds Digital SLR

Camera lens: Canon EF 50mm f/1.8 USM

Photograph taken:

06.16pm on 17/11/22

View location 03:

e: 473693.8790

n: 5719226.3620

rl: 3.4020

Approx. distance to proposed wind farm

31587m



Project ref: 2022/0295 **Dwg no.:** VIA-011 **Date:** 03/12/22 Revision: P1

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4.6.4 View location 04: Wilsons Promontory Lightstation

Location

View location 04 is at Wilsons Promontory Lightstation within Wilsons Promontory National Park. The view is oriented to the north-east towards the proposed offshore wind project project infrastructure, with the closest turbines being approximately 43.35 kilometres from the view location.

Visual features

The following description of the existing view is based upon the view shown in Figure 28: View location 4: Existing View

Existing view is a National Park context, comprising a Lightstation building, low vegetated landscape behind the stone retaining wall with a view of the open waters of Bass Strait and the Seal Islands Group visible on the horizon. Lightstation building and picnic table and facilities are visible structures in the view.

Rationale for selection

The view location is within a landscape of high value, on the basis that it is within the Wilsons Promontory and is located within a landscape of State Significance as described within the *Coastal Spaces Landscape Assessment Study*.

The view location is within the potential viewshed of the proposed project infrastructure (refer mapping at section 3.2) and is considered to be representative of views from sensitive viewpoints towards the proposed offshore wind project within the Wilderness Zone of Wilsons Promontory National Park.

Anticipated visibility

Turbines are likely to be visible on the horizon in a north-easterly direction, between bearings of 55 degrees and 73 degrees. Given the turbine locations are at least 43km from the viewing point, they will likely occupy no more than 1.5% of the vertical angle of view, with the base of all turbines being beyond the horizon.

Preliminary visual appraisal:

On the basis of the anticipated visibility described above, this assessment concludes that turbines will be visible, and therefore, the proposed offshore wind project will result in a visual impact. The magnitude of this impact will be assessed through a full LVIA as part of ongoing planning and project development work.

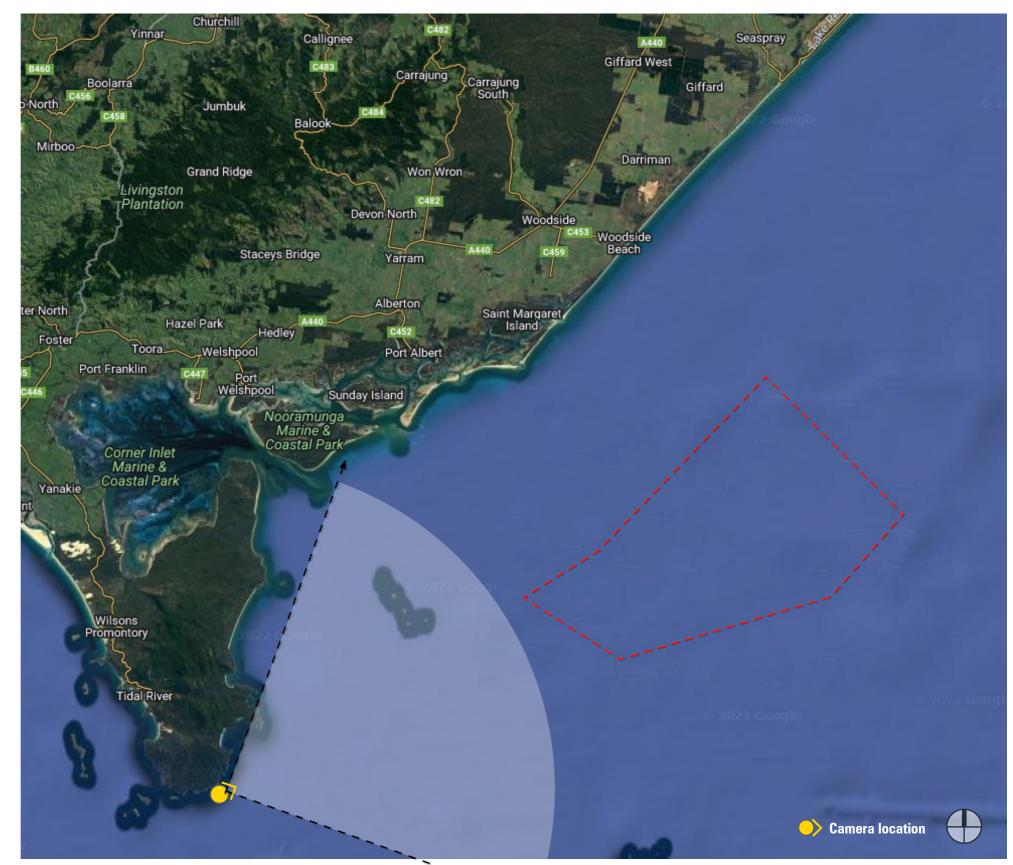
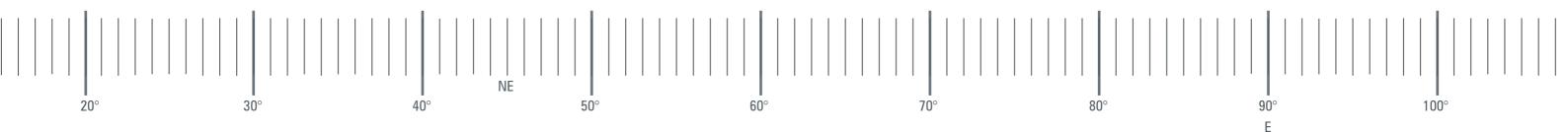


Figure 17 Wilsons Promontory Lightstation preliminary visual appraisal





Figure 18 View location 04: Existing view



View Location 04 - Wilsons Promontory Lightstation - Facing north east towards proposed turbines.

Photomontage created by:

OZ - 3D Visualizer

Images created using: 3ds max 2023, Vray 5, autocad 2023, adobe

photoshop, illustrator & indesign cc 2022 Method used to collect relevant data:

Photo locations surveyed on site by Geocomp

Consulting pty ltd on 18/11/22

Canon EOS 5Ds Digital SLR Camera lens: Canon EF 50mm f/1.8 USM

Photograph taken:

12.47pm on 18/11/22

View location 04:

e: 450248.5720

n: 5668658.8110

rl: 101.5370

Approx. distance to proposed wind farm

43345m



Project ref: 2022/0295 **Dwg no.:** VIA-016 **Date:** 03/12/22 Revision: P1

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4.6.5 View location 04: Five Mile Beach

Location

View location 05 is at Five Mile Beach within Wilsons Promontory National Park. The view is oriented to the east towards the proposed offshore wind project project infrastructure, with the closest turbines being approximately 33.42 kilometres from the view location.

Visual features

The following description of the existing view is based upon the view shown in Figure 34: View location 5: Existing View

Existing view is a National Park context, comprising a vista of the open waters of Bass Strait, beach, vegetated headland and rocky islands immediately offshore. The Seal Islands Group is visible on the horizon. No existing buildings or other structures are visible.

Rationale for selection

The view location is within a landscape of high value, on the basis that it is within the Wilsons Promontory and is located within a landscape of State Significance as described within the *Coastal Spaces Landscape Assessment Study*.

The view location is within the potential viewshed of the proposed project infrastructure (refer mapping at section 3.2) and is considered to be representative of views from sensitive viewpoints towards the proposed offshore wind project within the Wilderness Zone of Wilsons Promontory National Park.

Anticipated visibility

Turbines are likely to be visible on the horizon in a north-easterly direction, between bearings of 68 degrees and 96 degrees. Given the turbine locations are at least 33km from the viewing point, is visible on the horizon across approximately 40% of the horizontal field of view, and introduces built form into the view, with the base of all turbines being beyond the horizon.

Preliminary visual appraisal:

On the basis of the anticipated visibility described above, this assessment concludes that turbines will be visible, and therefore, the proposed offshore wind project will result in a visual impact. The magnitude of this impact will be assessed through a full LVIA as part of ongoing planning and project development work.

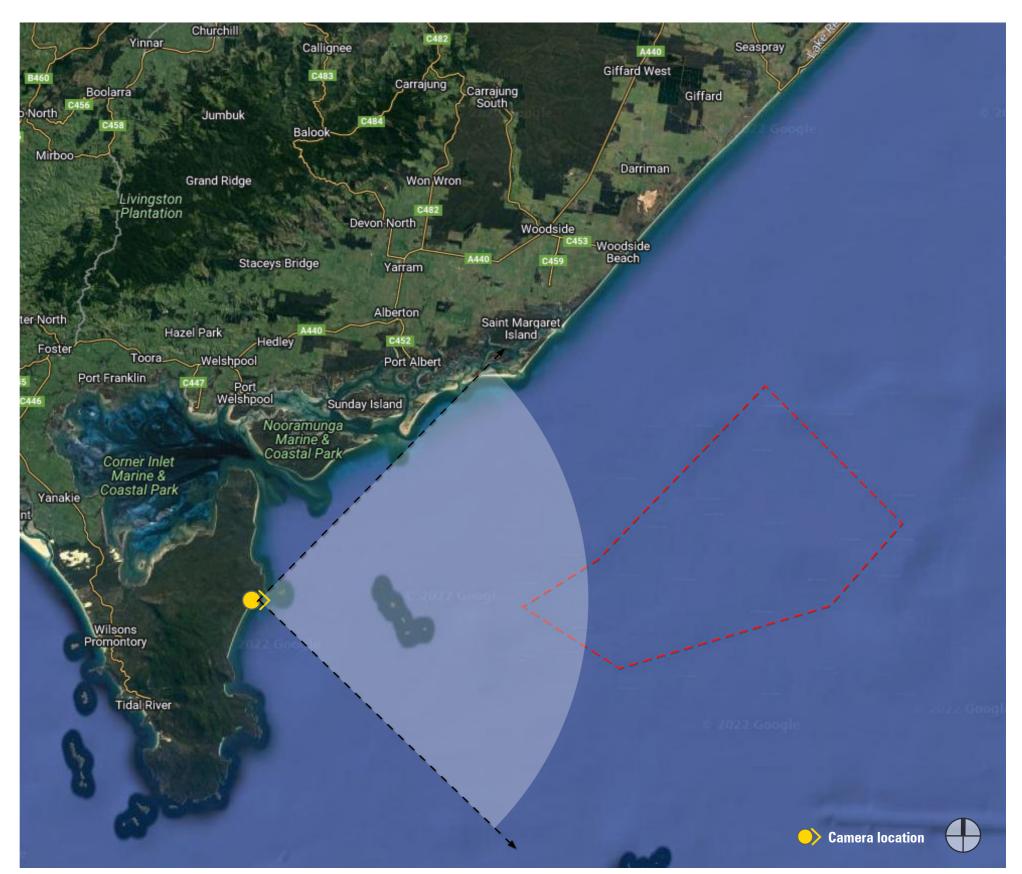


Figure 19 Five Mile Beach preliminary visual appraisal





Figure 20 View location 05: Existing view



View Location 05 - Five Mile Beach - Facing east towards proposed turbines.

Photomontage created by:

OZ - 3D Visualizer

Images created using:

3ds max 2023, Vray 5, autocad 2023, adobe photoshop, illustrator & indesign cc 2022

Method used to collect relevant data:

Photo locations surveyed on site by Geocomp Consulting pty ltd on 18/11/22

Camera:

Canon EOS 5Ds Digital SLR

Camera lens: Canon EF 50mm f/1.8 USM

Photograph taken:

04.47pm on 18/11/22

View location 05:

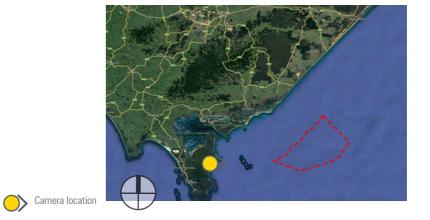
e: 453696.7170

n: 5691329.8570

rl: 6.3300

Approx. distance to proposed wind farm

33420m



 Project ref:
 2022/0295

 Dwg no.:
 VIA-021

 Date:
 03/12/22

 Revision:
 P1

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5 CONCLUSION

5.1 Visual appraisal

Five representative view locations have been assessed to determine whether or not a visual impact would occur as a result of the proposed offshore wind project. Based upon images of the existing view, the anticipated visibility has been described and informed the following summary:

- View location 1 located at Seaspray is approximately 36.15 kilometres from the proposed offshore wind project. Turbines will be visible.
- View location 2 located at Woodside Beach is approximately 23.49 kilometres from the proposed offshore wind project. Turbines will be visible.
- View location 3 located at Port Albert is approximately 31.59 kilometres from the proposed offshore wind project. Turbines will be visible.
- View location 4 located at Wilsons Promontory Lightstation is approximately 43.35 kilometres from the proposed offshore wind project. Turbines will be visible.
- View location 5 located at Five Mile Beach is approximately 33.42 kilometres from the proposed offshore wind project. Turbines will be visible.

This preliminary visual appraisal concludes that a visual impact would occur as a result of the Project, on the basis that some turbines will be visible. The magnitude of this impact will be assessed through a full LVIA and SVIA as part of ongoing planning and project development work.

