






# Yathroo Wind Farm

## Landscape and Visual Impact Assessment

01 July 2025

## Document Register

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LatStudios acknowledge the Traditional Custodians of the lands and waters where we work, including the Yued Noongar People who are the Traditional Custodians of Country within this LVIA Study Area.

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## Table of Contents

Document Register .....	i
Table of Tables.....	iv
Table of Figures.....	v
(IN APPENDICES).....	v
Glossary .....	viii
Executive Summary .....	1
1. Introduction.....	6
1.1. Project location .....	6
1.2. Project description.....	6
2. Scope of assessment.....	8
2.1. Definition of LVIA Study Area.....	8
2.2. Approach to the LVIA .....	8
3. Methodology.....	10
3.1. Relevant guidelines and standards .....	10
3.2. Influence of community perception on LVIA methodology .....	10
3.3. Desktop analysis .....	13
3.4. Preparation of visibility analysis mapping (VAM / ZTV).....	13
3.5. Field survey.....	14
3.6. Identification of potential project impacts .....	15
3.7. Landscape impact assessment methodology.....	15
3.8. Visual impact assessment methodology.....	19
3.9. Lighting assessment.....	23
3.10. Cumulative landscape and visual impact assessment.....	24
4. Potential Project impacts .....	25
4.1. Key sources of potential impact .....	25
5. Legislative context and standards .....	31
5.1. National.....	31
5.2. State .....	32
5.3. Regional.....	35
5.4. Local.....	36
5.5. Summary of local planning context.....	39
6. Existing environment .....	40

Yathroo Wind Farm  
Landscape and Visual Impact Assessment

6.1.	Regional landscape context.....	40
6.2.	Regional landscape character.....	48
6.3.	Site description.....	50
7.	Landscape assessment.....	52
7.1.	Landscape character baseline.....	52
7.2.	Landscape character assessment.....	53
7.3.	Summary of landscape impact assessment.....	60
8.	Visual assessment.....	62
8.1.	Visibility Analysis Mapping (VAM).....	62
8.2.	Visual audiences and viewpoint selection.....	63
8.3.	Viewpoint assessment.....	71
8.4.	Summary of visual impact assessment.....	102
9.	Construction and decommissioning assessment.....	104
9.1.	Construction / installation impacts.....	104
9.2.	Decommissioning impacts.....	104
10.	Cumulative assessment.....	106
10.1.	Projects considered in cumulative assessment.....	106
10.2.	Cumulative landscape and visual impact assessment.....	107
11.	Mitigation measures.....	109
12.	Residual impacts.....	112
13.	Conclusions and recommendations.....	113
13.1.	Landscape impact assessment.....	114
13.2.	Visual impact assessment.....	114
13.3.	Conclusions.....	116
14.	References.....	119
	Appendix 1: GIS figures.....	Appendix 1 - 1
	Appendix 2: Viewpoints and visualisations.....	Appendix 2 - 1
	Appendix 3: Policy and guidance review.....	Appendix 3 - 1

## Table of Tables

TABLE 1: TURBINE SPECIFICATIONS.....	7
TABLE 2: LVIA APPROACH .....	8
TABLE 3: DEFINING LANDSCAPE SENSITIVITY .....	16
TABLE 4: DEFINING MAGNITUDE OF CHANGE TO LANDSCAPE CHARACTER.....	17
TABLE 5: DETERMINING LEVEL OF EFFECT ON LANDSCAPE VALUES.....	18
TABLE 6: DEFINING VIEWPOINT SENSITIVITY .....	20
TABLE 7: DEFINING MAGNITUDE OF CHANGE TO VISUAL AMENITY.....	21
TABLE 8: DETERMINING LEVEL OF EFFECT ON VISUAL AMENITY .....	22
TABLE 9: CUMULATIVE IMPACT ASSESSMENT METHODOLOGY .....	24
TABLE 10: POTENTIAL IMPACTS DURING CONSTRUCTION PHASE .....	25
TABLE 11: POTENTIAL IMPACTS DURING OPERATIONAL PHASE .....	29
TABLE 12: TOWNS AND SETTLEMENTS WITHIN LVIA STUDY AREA .....	40
TABLE 14: IBRA REGIONS AND SUBREGION DESCRIPTIONS .....	43
TABLE 15: SOIL LANDSCAPE MAPPING ZONES AS WITHIN THE STUDY AREA.....	46
TABLE 16: LANDFORM, VEGETATION AND WATERFORM FEATURES OF HIGH SCENIC QUALITY WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA .....	48
TABLE 17: LANDSCAPE CHARACTER TYPES AND AREAS .....	52
TABLE 18: SUMMARY DESCRIPTION OF LCT A.....	53
TABLE 19: SUMMARY DESCRIPTION OF LCT I .....	58
TABLE 20: SUMMARY OF LANDSCAPE IMPACT ASSESSMENT .....	60
TABLE 21: REPRESENTATIVE VIEWPOINTS SELECTION .....	64
TABLE 22: LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 1 .....	71
TABLE 23: SUMMARY OF VISUAL IMPACT ASSESSMENT .....	102
TABLE 24: PROJECTS FOR CONSIDERATION IN CUMULATIVE IMPACT ASSESSMENT.....	106
TABLE 25: INHERENT MITIGATION MEASURES TO MINIMISE LANDSCAPE AND VISUAL EFFECTS .....	110
TABLE 26: ADDITIONAL RECOMMENDATIONS TO MINIMISE LANDSCAPE AND VISUAL EFFECTS AND SUPPORT THE APPRECIATION OF VISUAL VALUES WITHIN THE PROJECT AREA.....	111
TABLE A3-1: REVIEW OF NATIONAL GUIDANCE RELEVANT TO LVIA .....	1
TABLE A3-2: REVIEW OF STATE LEGISLATION, POLICY AND GUIDANCE RELEVANT TO LVIA .....	3
TABLE A3-3: REVIEW OF KEY REGIONAL POLICY AND GUIDANCE RELEVANT TO LVIA .....	11
TABLE A3-4: REVIEW OF KEY LOCAL POLICY AND GUIDANCE RELEVANT TO LVIA .....	13

## Table of Figures

(IN APPENDICES)

FIGURE 1: REGIONAL CONTEXT .....	1
FIGURE 2: PROJECT SITE .....	1
FIGURE 3: LVIA PROJECT STUDY AREA.....	1
FIGURE 4: LANDSCAPE PLANNING DESIGNATIONS .....	1
FIGURE 5: LANDFORM AND HYDROLOGY CONTEXT.....	1
FIGURE 6: LANDSCAPE CHARACTER TYPES.....	1
FIGURE 7: KEY VISUAL RECEPTORS, REPRESENTATIVE VIEWPOINT LOCATIONS AND TOURIST DRIVES .....	1
FIGURE 8: BLADE TIP VAM ASSESSMENT – ZONE OF THEORETICAL VISIBILITY .....	1
FIGURE 9: BLADE TIP VAM ASSESSMENT – NUMBER OF VISIBLE TURBINES .....	1
FIGURE 10: HUB HEIGHT VAM ASSESSMENT – ZONE OF THEORETICAL VISIBILITY .....	1
FIGURE 11: HUB HEIGHT VAM ASSESSMENT – NUMBER OF VISIBLE TURBINES .....	1
FIGURE 12: CUMULATIVE IMPACT ASSESSMENT .....	1
FIGURE 13 VIEWPOINT 1: NORTHEASTERLY VIEW FROM THE BRAND HIGHWAY, MIMEGARRA – EXISTING VIEW AND VISUALISATION (~150° HFOV) .....	1
FIGURE 14 VIEWPOINT 1: NORTHEASTERLY VIEW FROM THE BRAND HIGHWAY, MIMEGARRA – EXISTING VIEW (~75° HFOV) – 1 OF 2 .....	1
FIGURE 15 VIEWPOINT 1: NORTHEASTERLY VIEW FROM THE BRAND HIGHWAY, MIMEGARRA – VISUALISATION (~75° HFOV) – 1 OF 2 .....	1
FIGURE 16 VIEWPOINT 1: NORTHEASTERLY VIEW FROM THE BRAND HIGHWAY, MIMEGARRA – EXISTING VIEW (~75° HFOV) – 2 OF 2 .....	1
FIGURE 17 VIEWPOINT 1: NORTHEASTERLY VIEW FROM THE BRAND HIGHWAY, MIMEGARRA – VISUALISATION (~75° HFOV) – 2 OF 2 .....	1
FIGURE 18 VIEWPOINT 2: SOUTHEASTERLY VIEW FROM THE BRAND HIGHWAY, YATHROO – EXISTING VIEW (~125° AND ~75° HFOV).....	1
FIGURE 19 VIEWPOINT 3A: SOUTHEASTERLY VIEW FROM YANDIN LOOKOUT CARPARK, DANDARAGAN – EXISTING VIEW (~125° AND ~75° HFOV).....	1
FIGURE 20 VIEWPOINT 3B: SOUTHWESTERLY VIEW FROM YANDIN LOOKOUT, DANDARAGAN – EXISTING VIEW (~225° AND ~75° HFOV).....	1
FIGURE 21 VIEWPOINT 4: SOUTHEASTERLY VIEW FROM DANDARAGAN ROAD NEAR YATHROO HOMESTEAD, YATHROO – EXISTING VIEW AND VISUALISATION (~150°) .....	1
FIGURE 22 VIEWPOINT 4: SOUTHEASTERLY VIEW FROM DANDARAGAN ROAD NEAR YATHROO HOMESTEAD, YATHROO – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 1 OF 2 .....	1
FIGURE 23 VIEWPOINT 4: SOUTHEASTERLY VIEW FROM DANDARAGAN ROAD NEAR YATHROO HOMESTEAD, YATHROO – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 2 OF 2 .....	1

FIGURE 24 VIEWPOINT 5A: SOUTHERLY VIEW FROM STOCKYARD ROAD NEAR INTERSECTION WITH DANDARAGAN ROAD, YATHROO – EXISTING VIEW (~200° AND ~75° HFOV).....	1
FIGURE 25 VIEWPOINT 5B: NORTHERLY VIEW FROM STOCKYARD ROAD NEAR INTERSECTION WITH DANDARAGAN ROAD, YATHROO – EXISTING VIEW (~200° AND ~75° HFOV).....	1
FIGURE 26 VIEWPOINT 6: NORTHERLY VIEW FROM DANDARAGAN ROAD NEAR INTERSECTION WITH WAYLER WAYLER ROAD, YATHROO – EXISTING VIEW (~200° AND ~75° HFOV).....	1
FIGURE 27 VIEWPOINT 7: NORTHERLY VIEW FROM DANDARAGAN ROAD BETWEEN GILLINGARA ROAD AND ROWES ROAD, YATHROO – EXISTING VIEW AND VISUALISATION (~185° HFOV).....	1
FIGURE 28 VIEWPOINT 7: NORTHERLY VIEW FROM DANDARAGAN ROAD BETWEEN GILLINGARA ROAD AND ROWES ROAD, YATHROO – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 1 OF 3.....	1
FIGURE 29 VIEWPOINT 7: NORTHERLY VIEW FROM DANDARAGAN ROAD BETWEEN GILLINGARA ROAD AND ROWES ROAD, YATHROO – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 2 OF 3.....	1
FIGURE 30 VIEWPOINT 7: NORTHERLY VIEW FROM DANDARAGAN ROAD BETWEEN GILLINGARA ROAD AND ROWES ROAD, YATHROO – EXISTING VIEW (~75° HFOV) – 3 OF 3.....	2
FIGURE 31 VIEWPOINT 7: NORTHERLY VIEW FROM DANDARAGAN ROAD BETWEEN GILLINGARA ROAD AND ROWES ROAD, YATHROO – VISUALISATION (~75° HFOV) – 3 OF 3.....	2
FIGURE 32 VIEWPOINT 8: WESTERLY VIEW FROM ROWES ROAD NEAR INTERSECTION OF SCENIC DRIVE, YATHROO – EXISTING VIEW AND VISUALISATION (~200° HFOV).....	2
FIGURE 33 VIEWPOINT 8: WESTERLY VIEW FROM ROWES ROAD NEAR INTERSECTION OF SCENIC DRIVE, YATHROO – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 1 OF 2.....	2
FIGURE 34 VIEWPOINT 8: WESTERLY VIEW FROM ROWES ROAD NEAR INTERSECTION OF SCENIC DRIVE, YATHROO – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 2 OF 2.....	2
FIGURE 35 VIEWPOINT 9A: SOUTHERLY VIEW FROM DANDARAGAN COMMUNITY RECREATION CENTRE, DANDARAGAN – EXISTING VIEW AND VISUALISATION (~100° HFOV).....	2
FIGURE 36 VIEWPOINT 9A: SOUTHERLY VIEW FROM DANDARAGAN COMMUNITY RECREATION CENTRE, DANDARAGAN – EXISTING VIEW AND VISUALISATION (~75° HFOV) – 1 OF 1.....	2
FIGURE 37 VIEWPOINT 9B: SOUTHERLY VIEW FROM END OF CAMM ROAD, DANDARAGAN – EXISTING VIEW (~100° AND ~75° HFOV).....	2
FIGURE 38 VIEWPOINT 9C: SOUTHERLY VIEW FROM DANDARAGAN ROAD, DANDARAGAN – EXISTING VIEW (~100° AND ~75° HFOV).....	2
FIGURE 39 VIEWPOINT 10: SOUTHWESTERLY VIEW FROM ROWES ROAD, DANDARAGAN – EXISTING VIEW (~100° AND ~75° HFOV).....	2
FIGURE 40 VIEWPOINT 11: NORTHWESTERLY VIEW FROM BOUNDARY ROAD, YATHROO – EXISTING VIEW (~100° AND ~75° HFOV).....	2
FIGURE 41 VIEWPOINT 12: NORTHWESTERLY VIEW FROM MOGUMBER ROAD WEST, RED GULLY – EXISTING VIEW (~100° AND ~75° HFOV).....	2
FIGURE 42 VIEWPOINT 13: NORTHEASTERLY VIEW FROM ORANGE SPRINGS ROAD, MOORE RIVER – EXISTING VIEW NATIONAL PARK (~100° AND ~75° HFOV).....	2
FIGURE 43 VIEWPOINT 14A: EASTERLY VIEW FROM INDIAN OCEAN DRIVE ROADSIDE REST AREA, NILGEN – EXISTING VIEW (~100° AND ~75° HFOV).....	2

FIGURE 44 VIEWPOINT 14B: EASTERLY VIEW FROM NILGEN WILDFLOWER WALK NEAR NILGEN LOOKOUT,  
NILGEN – EXISTING VIEW (~100° AND ~75° HFOV)..... 2

FIGURE 45 VIEWPOINT 15: EASTERLY VIEW FROM CALLISTEMON LOOP WITHIN OCEAN FARMS, NILGEN –  
EXISTING VIEW (~100° AND ~75° HFOV)..... 2

FIGURE 46 VIEWPOINT 16: WESTERLY VIEW FROM BARBERTON WEST ROAD NEAR INTERSECTION OF  
BINDOON-MOORA ROAD, BARBERTON – EXISTING VIEW (~100° AND ~75° HFOV) ..... 2

## Glossary

### Acronyms and key terms

AADT	Annual Average Daily Traffic
ABS	Australian Bureau of Statistics
AHD	Australian Height Datum
AILA	Australian Institute of Landscape Architects
AS/NZS 4282:2023	Australian Standard / New Zealand Standard 4282:2023 Control of the Obtrusive Effects of Outdoor Lighting
BESS	Battery Energy Storage System
CALM	Department of Conservation and Land Management
Client	Umwelt Australia Pty Ltd
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCCEEW	Department of Climate Change Environment Energy and Water
DEM	Digital elevation model
DIWA	Directory of Important Wetlands in Australia
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
DSLR	Digital Single Lens Reflex
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EPBC Act	<i>Environmental Protection and Biodiversity Act 1999 (Cth)</i>
ERIN	Queensland Government Environmental Resources Information Network
GPS	Global Positioning System
GNLVA	Guidance Note for Landscape and Visual Assessment
ha	Hectares
HFoV	Horizontal Field of View
IBRA	Interim Biogeographic Regionalisation for Australia
km	Kilometre
kV	Kilovolt
LCA	Landscape Character Area (a geographically discrete area of a nominated LCT)
LCT	Landscape Character Type
LGA	Local Government Area
LVIA	Landscape and Visual Impact Assessment
LVIA Study Area	Study Area; comprising land within the potential viewshed of and forming the wider landscape context of the Project area as shown on <b>Figure 3</b>

Yathroo Wind Farm  
Landscape and Visual Impact Assessment

<b>m</b>	Metres
<b>m AHD</b>	Metres relating to Australian Height Datum
<b>MNES</b>	Matters of national environmental significance
<b>MSES</b>	Matters of state environmental significance
<b>OHTL</b>	Overhead transmission line
<b>Project</b>	Yathroo Wind Farm as shown on <b>Figure 2</b>
<b>Proponent</b>	Neoen Australia Pty Ltd (Neoen)
<b>Site</b>	Land within the Project area as shown on <b>Figure 2</b>
<b>SL</b>	Suburb and locality
<b>SLZ</b>	Soil landscape zone
<b>SNH</b>	Scottish Natural Heritage
<b>SPP 2050</b>	State Planning Policy 2050
<b>SPP 2.0</b>	State Planning Policy 2.0 –Environment and Natural Resource Policy
<b>SPP 2.5</b>	State Planning Policy 2.5 – Rural Planning
<b>TEC</b>	Threatened ecological community
<b>UCL</b>	Urban centre and locality
<b>VAM</b>	Visual Analysis Map
<b>WA</b>	Western Australia
<b>WAPC</b>	Western Australian Planning Commission
<b>WTG</b>	Wind Turbine Generator (wind turbine)
<b>ZTV</b>	Zone of Theoretical Visibility (see explanation for VAM)

## Glossary of Assessment Terms

<b>Amenity</b>	The pleasantness of a place as conveyed by desirable attributes including visual, noise, odour etc.
<b>Breakaway</b>	A landform found on the edge of a plateau or plateau remnant, where a relatively flat lateritic upland ends abruptly in a low scarp above a debris slope (Department of Primary Industries and Regional Development (DPIRD), 2010)
<b>Character</b>	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, and often conveys a distinctive sense of place. This term does not imply a level of value or importance.
<b>Effect</b>	The landscape or visual outcome of a proposed change. It may be the combined result of sensitivity together with the magnitude of the change.
<b>Height of a wind turbine</b>	The maximum height reached by the tip of the turbine blades at their highest point above ground level.
<b>Hub height</b>	The height of a wind turbine means the height of the hub measured from ground level (i.e., the height of the wind turbine without blades).
<b>Interim Biogeographic Regionalisation for Australia (IBRA)</b>	The biogeographic regionalisation of Australia developed by the Australian Government's (then known as) Department of Sustainability, Environment, Water, Population and Communities and represents a landscape-based approach to classifying the land surface of Australia.
<b>Impact</b>	The categorisation of effects. Legislative context should be considered in defining impacts and their significance.
<b>Landscape</b>	Landscape is an all-encompassing term that refers to areas of the earth's surface at various scales. It includes those landscapes that are: urban, rural, and natural; combining bio-physical elements with the cultural overlay of human use and values.
<b>Magnitude of change</b>	The extent of change that will be experienced by receptors. This change can be adverse or beneficial. Factors that could be considered in assessing magnitude are: the proportion of the view / landscape affected; extent of the area over which the change occurs; the size and scale of the change; the rate and duration of the change; and the level of contrast and compatibility.
<b>Mast</b>	The tower on which the wind turbine sits
<b>Mitigation</b>	Measures to avoid, reduce and manage identified potential adverse impacts.
<b>Offset</b>	Measures to compensate for potential adverse impacts that cannot be otherwise mitigated.
<b>Receptor</b>	A place, route, viewer audience or interest group which may require assessment.

<b>Regolith</b>	All material including the soil from bedrock to the surface (DPIRD, 2010)
<b>Sensitivity</b>	Susceptibility of a landscape or receptor to change without losing valued attributes.
<b>Scenic amenity</b>	A measure of the relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public (Department of Natural Resources, 2001).
<b>Values</b>	Any aspect of landscape or views people consider to be important. Landscape and visual values may be reflected in local, state or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed.
<b>View</b>	Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.
<b>Viewpoint</b>	The specific part of a wider view obtained from a viewpoint used for assessment purposes (typically up to around 75° but can be wider or narrower as required).
<b>Viewshed</b>	Areas visible from a particular location (may be modelled or field-validated).
<b>Visual audience</b>	Groups of visual receptors with common attributes and sensitivities to changes in views (e.g., residents, golfers, road travellers, walkers, shoppers, beach goers, farmers, recreational users).
<b>Visual absorption capacity</b>	Potential for a landscape or scene to absorb a particular change without a noticeable loss of valued attributes.
<b>Visual amenity</b>	The attractiveness of a scene or view.
<b>Visual representation</b>	Graphic representation of a proposal in context showing its likely appearance and scale.
<b>Wind monitoring tower</b>	A mast that incorporates wind speed and direction measuring and recording equipment.
<b>Wind turbine (or WTG)</b>	A machine or generator that uses wind force to generate electricity and includes the blades of the machine or generator.
<b>Zone of Theoretical Visibility Map (ZTV)</b>	A map illustrating areas of land with views to a particular feature. This may be modelled or field-validated, and assumptions must be stated. A digitally modelled analysis is usually based on a digital terrain model and may also incorporate the screening effect of vegetation and built form. Other approximately equivalent terms include Zone of Visual Influence, Visual Analysis Map (VAM), Potential Visibility Zone and Visual Envelope.
<b>Photomontages/ Visualisations</b>	A visual representation of a proposal from a particular receptor viewpoint, on a photographic base. The methodology for the preparation of any photomontage and its accuracy should be defined.

## Executive Summary

Neoen Australia Pty Ltd (Neoen) is proposing a new wind farm within the Shire of Dandaragan Local Government Area (LGA) in Western Australia, referred to as the Yathroo Wind Farm (the Project). LatStudios Pty Ltd (LatStudios) has been engaged by Umwelt (Australia) Pty Ltd (Umwelt) on behalf of Neoen to undertake a Landscape and Visual Impact Assessment (LVIA) for this Project. The Project is located in a rural area located to the south of the small rural town of Dandaragan.

This LVIA has been prepared with reference to accepted guidelines and best practice techniques from Australia and elsewhere, and detailed guidance contained in:

- *Visual Landscape Planning in WA: A Manual for Evaluation, Assessment, Siting and Design* (WAPC, 2007)
- *Position Statement: Renewable energy facilities* (WAPC, 2020)
- *Planning Bulletin No. 67 - Guidelines for Wind Farm Development* (superseded) (WAPC, 2004)
- *Indian Ocean Drive Planning Guideline* (WAPC, 2014).

The LVIA has also included consideration of the impacts of the wind farm on landscape values identified in relevant local planning strategies, planning schemes and strategic documents, particularly for the Shire of Dandaragan within which the Site is located. Overall local planning documents are supportive of renewable energy development, as well as the protection and enhancement of the diverse, unique and picturesque landscapes that occur within the LVIA Study Area (considered to be a 30 km offset from the Project site boundary) that are valued by residents and tourists alike.

The Project will impact areas zoned for 'Rural' uses. The key objective of the rural zone is "to provide for a range of rural activities such as broadacre and diversified farming so as to retain the rural character and amenity of the locality, in such a way as to prevent land degradation and further loss of biodiversity." The *Shire of Dandaragan Local Planning Scheme No. 7* does not list a wind farm or renewable energy facility as a land use in the Scheme and therefore, the Project is subject to planning assessment and public consultation by the Shire of Dandaragan to determine if the Project is compatible with the objective of the Rural zone.

The capacity of a landscape to accommodate wind farm development depends on the degree of impact the development will have on the existing character of the landscape; and the extent to which this impact can be modified and reduced by design. Consideration of landscape character types (LCTs) and scenic landscape values identified in State, regional and local planning and *Reading the Remote: Landscape Characters of Western Australia* (Department of Conservation and Land Management (CALM), 1994) has been made to define LCTs and associated Landscape Character Areas (LCAs) and provide a framework for measuring the impact of the Project on landscape values within the LVIA Study Area.

The landscape character assessment has defined nine LCTs within the LVIA Study Area. The landscape impact assessment has concluded that only two LCTs are anticipated to be directly impacted by the Project with the Project resulting in a direct:

- **Moderate, not significant** impact on localised parts of LCT A (*LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands*) due to the significant

influence of wind turbines on localised parts of this broad-scale landscape, noting that this LCT already supports existing wind farm infrastructure.

- **Minor, not significant** impact on highly localised parts of LCT I (*LCA 19: Caren Caren Brook*) within the Site to accommodate access tracks.

The Project will not have a direct impact on any areas identified as having high scenic amenity value and no direct significant impacts have been identified on other LCTs within the LVIA Study Area as they are not located within the project footprint. Any impacts on these areas would be indirect.

The Visual Analysis Map (VAM) produced for the Project demonstrates the influence of topography on visibility and identifies areas from which the wind farm wind turbines would be visible. For the purposes of this assessment, the potential visibility of ancillary infrastructure elements was not modelled within the VAM, as the location of these elements was not known. In addition, it is considered that compared to the scale of the wind turbines, the visibility of these Project components would be less (due to their smaller scale) and typically limited to more localised views in the vicinity of the Site.

The potential for views within 30 km of the Site was considered and sixteen viewpoints were selected to represent the views of identified receptors including:

- Residents living in and visitors to the rural town of Dandaragan located 10.4 km from the nearest wind turbine associated with the Project, who currently experience moderately close views toward the existing Yandin Wind Farm.
- Residents living in the Ocean Farms rural living estate in the locality of Nilgen
- Residents living on rural properties within and surrounding the Site
- Farmers and other people working in the rural landscape around the Site
- Recreational users accessing scenic lookouts such as Yandin Lookout and Nilgen Lookout and undertaking walking trails such as the Nilgen Wildflower Walk.
- Motorists (including tourists) using key roads within the LVIA Study Area including Indian Ocean Drive, Brand Highway, which are both State strategic scenic routes, and Dandaragan Road, which supports the promoted Dandaragan Way scenic drive
- Motorists travelling on other roads in the LVIA Study Area including Stockyard Road, Rows Road, Boundary Road, Mogumber Road West, Orange Springs Road and Barberton Road West (considered representative of Bindoon-Moora Road).

It is noted that no representative viewpoints were included from Lancelin, Moora, Regans Ford, Cataby or Koojan as it is not considered that views toward the Project are likely from these locations due to the distance of these locations from the Project and the presence of intervening topography and vegetation.

With regards to visual impacts, it is considered that the proposed up to 261m high wind turbines will be visible throughout large parts of the LVIA Study Area, due to their scale and the gently undulating and typically open visual character of the Site where the wind farm is proposed.

The visual impact assessment has concluded that there would be:

- **Moderate to Major, Significant**, impact on passing motorists on a short 2.0 km section of the Brand Highway where it passes through the Site and where very close (< 1.0 km) views toward two (2) wind turbines are possible (Viewpoint 1) and

more distant views toward the blade tips of an additional six (6) wind turbines are also possible. While this is considered to represent a significant impact based on the LVIA method, this impact is highly localised and does not represent other impacts on other parts of the Brand Highway, which are discussed in Viewpoint 2 and considered to be **not significant**. It is also acknowledged that close views toward existing wind turbines associated with the Yandin Wind Farm are already visible from nearby sections of the Brand Highway, with wind turbines associated with the Yandin Wind Farm located 2 km from the highway at their nearest point. Therefore, while this represents a localised and dominant change to this viewpoint and short section of the Brand Highway, similar views to existing wind farm developments can already be experienced in proximity to this location.

All other visual impacts are considered to be **not significant**, including:

- **Moderate, Not Significant**, impacts on:
  - Other more distant views from the Brand Highway (Viewpoint 2)
  - Views from Yandin Lookout and the adjacent carpark area (Viewpoint 3A and 3B)
  - Views from local roads that traverse or area located in close proximity to the Site including Stockyard Road (Viewpoint 5A and 5B), other parts of Dandaragan Road (Viewpoint 4, Viewpoint 6 and Viewpoint 7) and Rowes Road (Viewpoint 8)
  - Views from the Dandaragan Community Recreation Centre (Viewpoint 9A)
  - Views from Indian Ocean Drive and associated rest areas, including panoramic views experienced from the Nilgen area (Viewpoint 14A)
  - Views from Nilgen Lookout and the Nilgen Wildflower Walk (Viewpoint 14B).
- **Minor to moderate, Not Significant**, impacts on:
  - Views from other areas within the rural settlement of Dandaragan (Viewpoint 9B and 9C)
  - Views from other local roads including Rowes Road (Viewpoint 10), Mogumber Road (viewpoint 12) and Orange Springs Road (Viewpoint 13), which facilitate low to moderate volumes of traffic
  - Rural residents within Ocean Farms estate (Viewpoint 15).
- **Minor, Not Significant**, impacts on:
  - Very distant views experienced from Boundary Road (Viewpoint 11) and Barberton West Road, which is representative of similar anticipated impacts on Bindoon-Moora Road (Viewpoint 16).

The visual assessment has therefore identified that significant effects are only anticipated for only one of the selected sixteen representative viewpoints. This relates to close-range views experienced by passing motorists travelling along the section of the Brand Highway located within the Site. However, it is acknowledged that close views toward wind turbines are already experienced from these road routes and that there are numerous existing wind farm developments within the LVIA Study Area. As such, it is considered that wind infrastructure is a relatively common component of this already modified landscape.

No significant impacts on views from settlements, the Indian Ocean Drive or other key recreation and tourism facilities within the LVIA Study Area have been identified. However, it is acknowledged that the town of Dandaragan, which is already impacted by

the Yandin Wind Farm, will experience moderately distant views toward the Project that will be evident in the background of views to the south from the town.

It is also important to note that while there will be a moderate change to the character of the Site and a significant change to views experienced along the Brand Highway and Dandaragan Road, viewers will respond in different ways to the change. Landscape appreciation is relative, and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences. Some viewers may view the change as positive (creating a point of interest, including for local tourist drives) or neutral, whereas others will consider the change to be a negative impact.

Due to the presence of existing and numerous proposed wind farms and solar farms in the LVIA Study Area and broader region, there is the potential for cumulative impacts. The potential for significant combined, successive and sequential cumulative impacts is considered to be likely, with significant cumulative effects most likely to be experienced from the Brand Highway where close views toward wind turbines associated with numerous projects will be possible for several kilometres. There is also the potential for the landscape to appear more intensively developed, particularly as experienced in sequential views when driving around the wider Project Area, which may further affect the perception of the rural character of the region which has already been modified by wind developments. It is also noted that the planning schemes reviewed are supportive of renewable energy provided impacts on sensitive landscapes and visual values are considered and managed.

The Project has been designed to minimise and mitigate impacts on landscape character, scenic amenity and landscape values to the greatest extent possible through careful siting of wind farm infrastructure. However, it is acknowledged that the siting of wind farms in elevated locations responds to the operational requirement to maximise capturing the wind resource and, therefore, visually prominent locations are largely unavoidable.

Mitigation of identified impacts has been considered. It is acknowledged that completely screening views of 261 m high wind turbines is not generally possible, even if this were to be a desirable outcome. However, opportunities to enhance the integration of the wind farm into the landscape have been identified and described. Guidance contained in the *Indian Ocean Drive Planning Guideline Supplementary information - suitable species for roadside vegetation screening* (Department of Planning, 2014) should be considered in locations where roadside vegetation screening is considered appropriate to assist in integrating the Project into the landscape setting.

In conclusion, wind turbines associated with the Project will be clearly visible against the backdrop of low rolling hills in some views within the LVIA Study Area and will introduce additional wind infrastructure in this area, which has already been modified by other wind farm developments. The key issues identified in this LVIA are the localised changes in the character of the landscape within the Site boundaries and visual impacts upon receptors including individual rural properties and road users nearest the Project. Impacts are especially evident within around 2.5 km of the nearest wind turbine, where the wind turbines would have the greatest influence on the visual character of the landscape. This is particularly critical where views toward the Project will result in a significant visual impact, which relates to two representative viewpoint locations that provide very close views toward the Project from the Brand Highway and Dandaragan Road (Dandaragan Way). However, it is acknowledged that wind turbines are already visible from these road routes and that renewable energy development is an emerging and highly visible component of

the character of this region. Therefore, while these identified impacts are significant due to the degree of change in these locations, it may be considered that the introduction of additional highly visible wind turbines may not negatively impact the character and amenity of the locality as wind turbines are already a relatively common feature of this area.

## 1. Introduction

Neoen Australia Pty Ltd (Neoen) is developing the Yathroo Wind Farm (the Project) within the Shire of Dandaragan Local Government Area (LGA) in Western Australia (refer **Figure 1**). LatStudios has been engaged by Umwelt (Australia) Pty Ltd (Umwelt) to undertake a Landscape and Visual Impact Assessment (LVIA) to support the environmental approval of the Project.

The purpose of the LVIA is to provide an assessment of the anticipated landscape and visual effects of the Project during construction, operation and decommissioning / rehabilitation phases on the Site and its wider landscape context. The LVIA:

- identifies and describes any relevant designations, policy and supplementary planning guidance.
- describes the general character of the Site and its wider landscape context.
- includes a Landscape Character Assessment that describes the character of the Site and its wider landscape context.
- determines the relevant visual catchments of the proposed wind farm and the potential for effects from representative views/visual receptors, including local houses, roads, public areas and more distant catchment areas.
- provides a baseline against which it is possible to assess the key risks associated with the development, including the appropriateness of the Site and wind turbine height.
- suggests potential opportunities to reduce or mitigate any potential adverse effects identified relating to the wind turbine height and siting.

### 1.1. Project location

The Project area (the Site) encompasses 15,617 hectares (ha) across 128 land parcels (153 including easements) within the locality of Yathroo within the Shire of Dandaragan LGA as shown in **Figure 2**. T

The small rural town of Dandaragan and the rural locality of Regans Ford are located 5.3 km north and 6.3 km south of the Site, respectively.

### 1.2. Project description

The Project, as assessed in this LVIA, comprises:

- Up to 65 Wind Turbine Generators (WTGs) at a total height of up to 261 metres (m).
- Battery Energy Storage System (BESS) with a capacity of 400 MW
- Overhead Transmission Line (OHTL) comprising a 330kV Single Circuit Poles or Towers.
- Up to two 33/330kV switching substations, one of which will be located in a central part of the project area and one of which will be located next to the BESS facility in the western part of the Site to the west of the Brand Highway. This is anticipated to have a gantry: up to 20 m (up to 20 m height for the beam and up to 27 m at the top of the gantry, lightning protection masts up to 30m, along with office building of up to 4 m, transformer of up to around 10 m and Bus of 10 m.

- Western Power terminal. This is also anticipated to have a gantry: up to 20 m (up to 20 m height for the beam and up to 27 m at the top of the gantry, which will be the highest point) and lightning protection masts up to 30m. Other equipment will include HV switching and metering equipment and western Power relay equipment that will be housed in control buildings. A communication tower may be required of a height up to 65m.

There is also potential for additional site works and areas of disturbance, including sourcing some construction materials and compounds onsite.

The proposed wind turbines specifications are described in **Table 1**.

**Table 1: Turbine Specifications**

Feature	Statistic
Number of turbines	Up to 65
Tip height*	Up to 261 m above ground level
Height to hub*	Up to 170 m above ground level
Rotor diameter*	Up to 182 m
Colour/finish	Light grey or white with a semi-matt finish
Turbine capacity rating	Up to 7.8 MW (6 – 7.8 MW range)

*Note: The actual output of the wind farm will depend on the number, size and type of turbine chosen during the detailed design phase. The maximum specifications listed in the table provide flexibility for any innovation in turbine design between now and the time of detailed design and construction.*

## 2. Scope of assessment

### 2.1. Definition of LVIA Study Area

For the purposes of this assessment, the Project encompasses all land within the Site illustrated on **Figure 2**. However, visual effects can extend well beyond the boundary of the Site due to the large size of the turbines, and because views are potentially available from distant vantage points. Therefore, an LVIA study area (Study Area) has been established for the LVIA as shown on **Figure 3**.

The Study Area aims to identify the area within which the Project may potentially influence landscape and/or visual receptors. This extends up to approximately 30 km beyond the Site boundary. It is considered unlikely that any visual receptors located beyond the boundary of the 30 km Study Area will be able to obtain clear views of the Project with potential for significant adverse impacts.

### 2.2. Approach to the LVIA

Landscape impacts include physical changes to the fabric of the landscape, as well as perceptual changes in the character of the landscape. They can also include impacts on areas designated for their scenic or landscape qualities at a national, regional or local level, for example national parks or important recreation areas. Visual impacts relate to changes in views and the appearance of a wind farm (including ancillary infrastructure) in those views. The approach to this LVIA is set out in **Table 2**.

*Table 2: LVIA Approach*

Baseline Assessment	
Stage 1	<b>Review of landscape and visual legislative context:</b> A review of any landscape or scenic amenity designations applying to the Site and/or wider LVIA Study Area at national, state, regional or local level; including local planning designations. Designations are considered in relation to the requirements of relevant guidelines.
Stage 2	<b>Desktop landscape assessment:</b> A review of available information describing the landscape characteristics of the LVIA Study Area.
Stage 3	<b>Desktop visual assessment:</b> Identification of potential key visual receptor audiences (viewers) such as private residences, roads (including any nominated scenic routes), public parks and recreation areas (including any nominated scenic lookouts and recreation trails) and other properties including farmland etc. The assessment is also informed by Google Earth, National Map, Landgate, PlanWA and other desk-based mapping tools.
Stage 4	<b>Field survey:</b> Field survey (during April 2025) to confirm baseline findings and obtain photographs of representative viewpoints in the field, including images to use as a base for the preparation of photomontages.
Preparation of the LVIA	
Stage 5	<b>Definition, description and illustration of the landscape and visual baseline:</b> Including Landscape Character Assessment and landscape and visual sensitivity.

Yathroo Wind Farm  
Landscape and Visual Impact Assessment

<b>Stage 6</b>	<b>Mapping and supporting illustrations:</b> Preparation of mapping to support the LVIA (including VAM) analyses that form the basis of an estimate of the maximum likely extent of visibility based on the wind turbine layout) and compilation of illustrative photomontages/visualisations from selected viewpoints.
<b>Stage 7</b>	<b>Assessment of magnitude of change:</b> Identification of the magnitude of change of the landscape resource during the construction, operation, and decommissioning phase.
<b>Stage 8</b>	<b>Significance assessment:</b> Evaluation of the significance of the proposed change on the landscape and visual resource.
<b>Stage 9</b>	<b>Cumulative assessment:</b> Evaluation of the potential impact of the Project in combination with other infrastructure projects that are located or proposed close to the Project.
<b>Stage 10</b>	<b>Mitigation potential:</b> This stage comprises a consideration of the opportunity to minimise and mitigate project impacts.
<b>Stage 11</b>	<b>Residual assessment:</b> Consideration of impacts of the project assuming all recommended mitigation is implemented.

## 3. Methodology

### 3.1. Relevant guidelines and standards

The LVIA method has been developed with reference to accepted guidelines from Australia and elsewhere, particularly including:

- *Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design* (Western Australian Planning Commission (WAPC), 2007)
- *Guidance Note for Landscape and Visual Assessment* (Australian Institute of Landscape Architects (AILA) Queensland, 2018)
- *The Guidelines for Landscape and Visual Impact Assessment, Third Edition* (The Landscape Institute and the Institute of Environmental Management and Assessment, UK, 2013) and previous Second Edition (2002).

Relevant guidance notes and documentation, specific to wind farms, from Western Australia, nationwide and overseas, which have been considered to inform this LVIA include:

- *Position Statement: Renewable energy facilities* (WAPC, 2020)
- *Planning Bulletin No. 67 - Guidelines for Wind Farm Development* (rescinded in 2020) (WAPC, 2004) (refer Appendix 3 for details)
- *Best Practice Guidelines for Implementation of Energy Projects in Australia* (Clean Energy Council, 2018) (refer Appendix 3 for details)
- *Wind Energy Guideline – Guidance for State significant wind energy development* (NSW Department of Planning, Housing and Infrastructure, 2024)
- *Draft National Wind Farm Development Guidelines* (Environment Protection and Heritage Council (EPHC), 2010) (refer Appendix 3 for details)
- *Landscape Institute Technical Guidance Note 06/19: Visual Representation of Development Proposals* (The Landscape Institute, 2019)
- *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity* (Scottish Natural Heritage and The Countryside Agency, UK, 2006)
- *An approach to landscape sensitivity assessment – to inform spatial planning and land management* (Natural England, 2019)
- *Siting and Designing of Windfarms in the Landscape Guidance Version 3a* (Scottish Natural Heritage, 2017)
- *Visual Representation of Windfarms: Good Practice Guidance* (Scottish Natural Heritage (SNH), 2006).

### 3.2. Influence of community perception on LVIA methodology

Community perception of wind farms is an important consideration in assessing the landscape and visual impact of a project. Consultation with local government authorities, local communities, and stakeholders with regards to wind farm development is also supported in the *Position Statement: Renewable Energy Facilities* (WAPC, 2020).

While community perception of wind farms is an important consideration in assessing the landscape and visual impact of the Project, the research indicates that wind farms evoke a subjective response.

Considerable academic research has been undertaken both in Australia and overseas regarding the perception of visual impacts of renewable energy facilities. This includes recently published results of a survey conducted in 2023 by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australian attitudes to the renewable energy transition and different types of renewable energy infrastructure, including wind farm developments. The survey found that people living on rural properties have more negative attitudes to living near renewable energy infrastructure, particularly transmission lines, than urban residents. Overall, survey respondents were somewhat concerned about the risk of onshore wind farm developments reducing the visual attractiveness of the local landscape, with Australians aged over 60 more concerned about reduced visual aesthetics than younger Australians.

The findings of this survey are supported by an earlier paper by Lothian (2020) titled *A survey of the visual impact and community acceptance of wind farms in Australia*. This paper examines responses from an online survey where 556 participants rated the scenic quality of landscapes with and without wind farms. Upon review of survey responses, Lothian concludes that *"While the respondents rated the scenic quality of landscapes with wind farms lower than scenes without them, they rated wind farms acceptable in virtually all cases...The finding suggests that the community is very tolerant of the visual impact of wind farms."* Acceptability included areas judged by participants to be of high scenic quality. Some interesting observations made by Lothian include that the following factors tended to increase acceptability of wind farm developments from a scenic amenity perspective:

- presence of dense vegetation
- more elevated and undulating land
- fewer wind turbines
- larger wind turbines
- orderly placement of wind turbines/ placement of wind turbines along ridges (compared to more random layouts)
- increasing distance of viewer from the wind turbines
- landscapes of higher scenic quality (noting that Lothian acknowledges that this appears counterintuitive).

He notes that *"...both height and generating capacity had little influence on scenic quality ratings. Both height and number are highly visible attributes, whereas only specialists would discern the difference in the size of the generators."*

In addition, Lothian also acknowledges that positive community opinions regarding wind farms could be attributed to *"to the care with which governments have regulated the industry"* and that therefore the *"challenge for spatial planners is to ensure that wind farms are located in areas without significant visual or other impacts"*.

Similarly, Hall, Ashworth and Devine-Wright (2013) in their paper *Societal acceptance of wind farms: Analysis of four common themes across Australian case studies* examined seven case studies which identified strong community support for wind farms generally. They do however note that local opposition to specific proposed wind farm schemes is based on four key themes including place attachment (and other issues not related to landscape and visual impact). The findings note *"a 'silent majority' of rural residents who do not explicitly demonstrate support through media attention or political engagement."* However, they note research indicating the impact of visual changes to a place or

landscape can significantly influence attitudes towards a wind farm and highlight the sense of attachment of participants to their local landscape concluding that *“such amenity concerns are highly subjective, difficult to quantify and to compensate if at all.”*

Other types of large infrastructure projects (such as transmission lines, mines and road corridors) tend to have a lower level of acceptance by the community. The greater degree of acceptance of wind farms tends to relate to their sculptural form and their presence as a symbol of renewable energy. By way of contrast, their opponents believe they are unattractive ‘industrial’ intrusions that clutter the skyline.

Wilson and Dyke (2015) in their research *pre- and post-installation community perceptions of wind farm projects: the case of Roskrow Barton* identified the complexity of determining and addressing community attitudes to wind farms noting that *“the value that individuals attribute to the countryside varies from person to person depending on experience and memories. Judgement is, thus, subjective with some disliking the appearance of wind farms and finding them ugly, whereas others only see graceful structures.”* Their research concluded that (for this example), *“although negative perceptions can be found both pre-and post-installation, collectively the community have become used to the wind turbines and that attitudes have generally become more favourable.”*

Limited information is available regarding the likely attitude of the local community to the Project. As such, for the purposes of this assessment, subjective interpretation of the Project has been avoided. The focus has instead been directed to assessing the likely significance of the impact (i.e., a transparent judgement on the sensitivity of the landscape resource, combined with the anticipated magnitude of change) as described further below.

The findings of court cases where wind farm development has been challenged on the grounds of landscape and visual amenity can be a useful reference for understanding the influence that community perception has on development decisions, particularly in relation to consideration of views from private properties. For example, in *Perry and Others v Hepburn Shire Council and Others* (VCAT, 2007) the finding identified three important principles in relation to the significance of views from dwellings (and the public realm in general):

- Visibility does not equate to an unreasonable visual impact
- Visual impact can be horizontal or vertical in its dimensions
- Visual impact can be mitigated by landscaping and landform.

This also cites the finding of the *Portland Wind Energy Project Panel Report* that concluded:

*“Private dwellings [...] should retain outlooks that are not dominated by wind farm plant. That is not to say that a wind farm cannot affect outlooks from dwellings or public places. Clearly it may unavoidably be the case that outlooks from say 3 out of 5 habitable rooms in a dwelling or over 180 degrees of horizon from a garden may be substantially affected by development.... However, it should not be acceptable in principle to dominate all available outlooks from all habitable rooms and 360 degrees of horizon from a garden...”*

Community consultation for the Project commenced in January 2025 and involved telephone calls, distribution of information booklets about the Project and three community information sessions. Some community members addressed concerns

regarding visual amenity impacts, especially with consideration of impacts on near neighbours. The Proponent is currently directly liaising with potentially impacted near neighbours including through the preparation of a private photomontage for each key potentially impacted neighbour. This is to assist those landowners to understand the potential visual impact of the Project on their rural dwellings. The Proponent is also developing landscaping plans for affected near neighbours concerned about visual amenity impacts to assist in providing vegetative screening.

In recognition that local community members may have varying perspectives with regards to wind farm developments, for the purposes of this assessment, subjective interpretation of the Project has been avoided. The focus has instead been directed to assessing the likely significance of the impact (i.e., a transparent judgement on the sensitivity of the landscape resource, combined with the anticipated magnitude of change) as described further below.

### **3.3. Desktop analysis**

Key information sources have been identified and reviewed as a component of the desktop analysis. These sources include:

- Relevant planning schemes, policies and guidelines from the State government and local government authorities
- Publicly available information on recreation spaces and public visitor areas
- Census data
- Traffic count data (obtained from Main Roads Western Australia traffic map February 2025)
- Digital satellite aerial imagery (obtained March 2025 from Google Earth)
- Cadastral data (showing roads, property boundaries and built areas)
- Other data on the existing environment available online (as described in the reference list)
- Existing infrastructure
- Information available on PlanWA, Landgate and National Map (2024).

The desktop analysis of existing landscape character and visual amenity for the Site, as well as the wider LVIA Study Area included analysis of the underlying topography, land cover and landscape values. These findings were then verified and expanded through the field survey.

### **3.4. Preparation of visibility analysis mapping (VAM / ZTV)**

A Visibility Analysis Map (VAM), sometimes also known as a 'Zone of Theoretical Visibility' (ZTV) study, comprises a digitally mapped representation of the area within which a proposed development may have an influence or effect upon views and visual amenity. It is often used as a tool to select representative viewpoints for more detailed assessment.

Global Mapper v24.0 software has been used to model the VAM contours at 10 metre intervals acquired through the Elvis Elevation Information System (Geoscience Australia, 2024), which was used to create a digital elevation model at 25 m resolution which was for further analysis. This was clipped to the 30 km LVIA Study Area offset buffer and projected into GDA20 Zone 50 coordinates. The 'Calculate Viewsheds at Selected Points' analysis tool in 'Global Mapper' was used to determine those cells where an observation point at 2.0 m height above ground level (an approximation of a viewer's eye level) could

theoretically be able to view the transmitter features (261 m Blade Tip and 170 m Hub Height elevations at wind turbine locations). Global Mapper produces separate viewshed polygon layers for each wind turbine, which are then summed together into a final combined ZTV raster dataset.

It should be noted that the calculation of the ZTV does not consider the presence of built development, which can locally reduce the availability of receptors' views. However, based on field observations, it is considered that because built development within the Study Area is generally minimal, it would be unlikely to significantly affect the extent of the visibility zone. The ZTV is also a 'worst case scenario' as it does not account for vegetation, which can significantly affect visibility locally and, particularly, along road corridors, associated with the property boundaries and gardens of residences and over large, forested areas (such as State forests).

The four ZTVs prepared to support this LVIA (refer **Section 8.1: Visibility Analysis Mapping (VAM)** and **Appendix 1**) are based on the wind turbine layout within the Site shown on **Figure 2** comprising a total of 65 wind turbines with a height to blade tip of up to 261 m.

In interpreting the VAM mapping, three important issues need to be recognised:

- The accuracy of the VAM is affected by the limitation of the Digital Elevation Model (DEM) used to establish the surface elevation (Australian Height Datum (AHD)), which consisted of a 25 m cell raster grid.
- VAM mapping is based on the ground surface elevation only and does not take account of detailed variations in ground plane such as intervening vegetation, buildings or minor changes in topography, such as road cuttings. Where such features intervene between the viewer and the proposed wind farm (e.g., tree belts alongside roads or within fields, vegetation in gardens of rural properties and forested areas such as reserves), then this may reduce the visibility of the project – often substantially from individual vantage points.
- VAM mapping is based on the current wind turbine layout. Minor adjustments to wind turbine location and heights may be possible. However, as the mapping is based upon maximum heights and number of wind turbines, the mapping is considered to represent a reasonable assessment of potential views of the Project once operational.

Therefore, whilst it is considered that the presence of vegetation in the LVIA Study Area would likely reduce visibility of the Project locally and regionally, impacts on vegetation extent and quality such as bushfires and land clearing can affect the extent to which this occurs.

### **3.5. Field survey**

A field visit to assess the Site was carried out between 1 and 3 April 2025 by two qualified landscape architects / landscape planners both with experience in LVIA, including wind farm development and landscape photography. The weather during the field assessment varied from dry conditions with clear skies to intermittent rain showers with high levels of cloud cover.

It is also noted that visibility during the field survey was marginally impacted by recent bushfire activity within the area. This was predominately evidenced in long-range views

toward the Site. Despite this, sufficiently clear views toward the Site for the purposes of undertaking LVIA and obtaining suitable imagery were obtained.

The field assessment was used to ground truth the findings of the desktop assessment and to undertake an onsite assessment of landscape character and visual amenity. Photographs were taken to:

- portray landscape character
- inform the viewpoint assessment from representative viewpoints
- provide base images to produce photographic simulations and visualisations.

The field visit focused on those aspects of the landscape with potential to be of the greatest sensitivity to the Project and to gain an appreciation of those aspects of the Project most likely to affect landscape character and visual amenity. Viewpoints were recorded on site using a camera with built in Global Positioning System (GPS) unit.

### **3.6. Identification of potential project impacts**

This component of the LVIA includes a review of the Project infrastructure components to inform a description of infrastructure and collation of exemplar imagery of infrastructure that is likely to be associated with the Project, such as the presence of wind turbines, substations, access tracks etc. These potential impacts are discussed **Section 4: Potential Project impacts**.

### **3.7. Landscape impact assessment methodology**

#### **3.7.1. Identification and description of landscape character types and areas**

Landscape character assessment is a tool for identifying what makes one place different from another. It identifies what makes a place distinctive, without necessarily assigning a value to it. This approach has been used to establish the existing character of the landscape and to provide a framework for measuring the impact of the Project on landscape character, which is a requirement of the *Position Statement: Renewable energy facilities*. The landscape character assessment also includes consideration of whether identified LCTs contain areas identified as having high scenic amenity value.

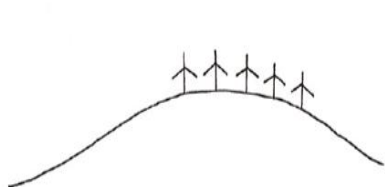
Informed by *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) LCTs have been defined that provide a framework for describing these areas methodically. Where necessary, these have been further subdivided into Landscape Character Areas (LCAs), which are geographically distinct areas. The general character of the landscape is described in **Section 6.2: Regional landscape character**, whilst the identified LCTs are described in **Section 7: Landscape assessment**.

#### **3.7.2. Judgement of landscape sensitivity**

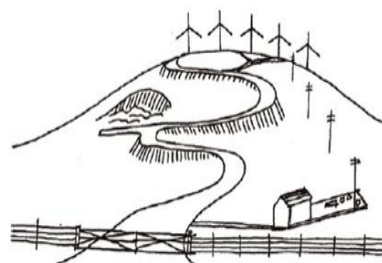
The sensitivity of a landscape is judged on the extent to which it can accept change of a particular type and scale without adverse effects to existing landscape character.

The assessment of anticipated sensitivity (and consequent likely impact to) landscape character and amenity is based on the scale and layout of the Project and how this relates to the characteristics of the receiving landscape. For example, simple large-scale landscapes (such as Image A in **Illustration 1** below) are likely to be less sensitive to large scale wind farm developments; while landscapes of small scale (e.g., characterised by relatively 'human scale' buildings and features, such as Image B in **Illustration 1**) would

generally be less tolerant of such development proposals. Consideration is also given to designations or landscape policies (as identified, for example, in a local planning scheme) in determining the sensitivity of a landscape to change.



**Image A:** Turbines create a simple image in the landscape.



**Image B:** Turbines create a complex image and conflicts with the small-scale landscape character.

*Illustration 1: Comparisons between siting wind turbines in landscapes of different scale and character [Image source: SNH (2017) Siting and Designing of Windfarms in the Landscape]*

Levels of sensitivity, shown in **Table 3**, vary according to the type of development and the nature of the landscape. Key aspects that have been considered when identifying the level of sensitivity associated with each landscape character type include:

- The landscape's inherent values (e.g., perceptual qualities, cultural importance, and any specific values that may apply such as landscape planning designations).
- The landscape's ability to absorb changes associated with the Project (e.g., the extent to which the Project may fit or be absorbed into the landform, land use, pattern, scale, or texture of the existing landscape).

**Table 3: Defining landscape sensitivity**

Sensitivity of landscape	Attributes of landscape sensitivity categories
<b>High</b>	A landscape protected by national designation and/ or widely acknowledged for its quality and value; a landscape with distinctive character and low capacity to accommodate the type of change envisaged.
<b>Medium</b>	A moderately valued landscape, perhaps a regionally important landscape and / or protected by regional/state designation or on a scenic amenity overlay in a local planning scheme, and /or where its character, land use, pattern and scale have limited capacity to accommodate a degree of the type of change envisaged.
<b>Low</b>	A landscape valued to a limited extent, perhaps a locally important landscape or where its character, land use, pattern and scale is likely to have the capacity to accommodate the type of change envisaged.
<b>Negligible</b>	A landscape which is not valued for its scenic quality or where its character, existing land use, pattern and scale are tolerant of the type of change envisaged, and the landscape has capacity to accommodate change.

### 3.7.3. Magnitude of change to landscape character

The magnitude of change to landscape character depends on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape and is based upon that part of the landscape character type that is likely to be impacted to the greatest extent by the Project before the application of any mitigation.

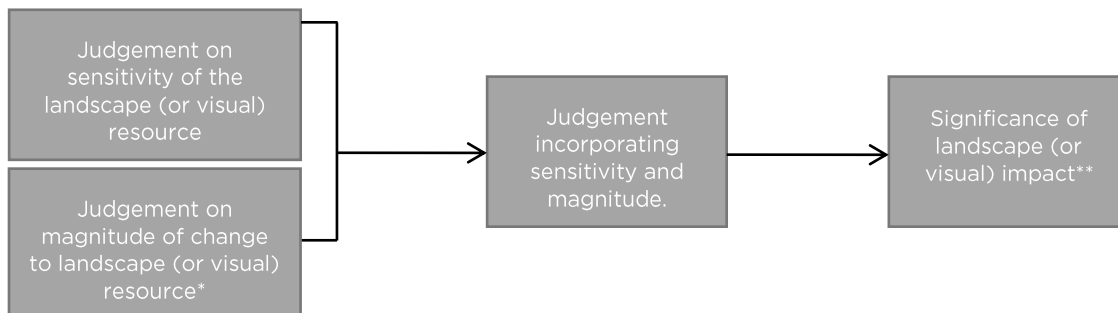
Magnitude of change is described as negligible (barely perceptible change), low (noticeable change), medium (considerable change) or high (dominant change), as illustrated in Table 4. The descriptions of magnitude and sensitivity are illustrative as there is no defined boundary between levels of impacts.

*Table 4: Defining magnitude of change to landscape character*

Magnitude of Change	Typical Examples
High	<u>Dominant change</u> : A clearly evident and frequent/continuous change in landscape characteristics affecting an extensive area, which is likely to fundamentally change the character of the landscape.
Medium	<u>Considerable change</u> : A considerable change in landscape characteristics, frequent or continuous and over a wide area or a clearly evident change, but over a restricted area.
Low	<u>Noticeable change</u> : A noticeable change in landscape characteristics over a wide area or a considerable change over a restricted area but will not fundamentally change landscape character.
Negligible	<u>Barely perceptible change</u> : An imperceptible, barely or rarely perceptible change in landscape characteristics.
No impact	<u>No change</u> : No change in landscape characteristics.

### 3.7.4. Overall significance of effect on landscape character

An evaluation of overall potential effects on landscape is based on the sensitivity of the existing landscape to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of landscape impacts exist; therefore, professional judgement and experience are applied. The significance of impact is therefore determined by considering the sensitivity of the landscape receptor and the magnitude of change expected because of the proposed development, as shown in the process diagram in Illustration 2. Each landscape is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles that can be used as a guide to this process that provide transparency about how judgements have been made.



\* There is no standard methodology for the quantification of the magnitude of effects; however, it is generally based on the scale or degree of change to the landscape resource, the nature of the effect and its duration.

\*\* Overall landscape impact is determined by combining the sensitivity of the landscape resource with the magnitude of landscape change. Professional judgement is used to determine the overall significance of impact based on these two elements.

**Illustration 2 Approach to evaluating the significance of landscape change**

The overall significance of change to landscape amenity is determined by using Table 5.

**Table 5: Determining level of effect on landscape values**

Level of effect		Magnitude of change in landscape			
		High (Dominant change)	Medium (Considerable change)	Low (Noticeable change)	Negligible (Barely perceptible change)
Sensitivity of landscape	High	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

Denotes a 'Significant' impact.

Denotes a 'not Significant' impact.

*Note: where no impacts would be experienced 'No Impact' is recorded*

### 3.8. Visual impact assessment methodology

#### 3.8.1. Identification and description of visual receptor audiences and viewpoints

Visual receptor audiences are assessed and described in terms of the views that can be obtained from selected representative viewpoints within the LVIA Study Area. Potential representative visual audiences have been identified. Potential visual receptors have been identified based on a range of parameters including:

- Proximity of the receptor: the most effected visual receptors are typically anticipated to be located within a 5 km radius of the closest wind turbine, unless elevated vantage points are present within the wider landscape surrounding the Site.
- Type of visual receptor/visual receptor audience, for example:
  - a permanent resident of a residential dwelling within a town (noting that residential receptors within Dandaragan, Regans Ford, Moora and Koojan are located 10.4 km, 8.0 km, 27.2 km and 25.8 km from the nearest turbine respectively and that views from the coastal town of Lancelin are not possible toward the Project)
  - a permanent resident of a residential dwelling within developed 'rural living' areas (such as Ocean Farms, which is located 22.2 km from the nearest turbine) and 'rural residential' areas, the nearest of which are located on the outskirts of Moora, 25.5 km from the nearest turbine.
  - a permanent resident of a rural dwelling or homestead
  - drivers or passengers of vehicles passing through, or alongside, the LVIA Study Area including on promoted scenic routes such as the Brand Highway, Indian Ocean Drive and the Dandaragan Way
  - members of the public accessing marked recreational areas (e.g., nature reserves, footpaths, public parks and sportsgrounds), scenic lookouts (e.g. Yandin Lookout and Nilgen Lookout), tourism attractions (e.g. Lancelin Sand Dunes) and recreation trails (e.g. Nilgen Wildflower Walk).
  - a rural, industrial or commercial worker (excluding those employed as part of the Project).

These visual receptor audiences and representative viewpoints are discussed further in **Section 8.2: Visual audiences and viewpoint selection.**

#### 3.8.2. Judgement of visual sensitivity

The sensitivity of each viewpoint, and the visual receptor audiences which it represents, is considered to be dependent upon:

- The importance of the view, its existing scenic qualities, and the presence of other existing man-made elements in the view
- The type of the visual receptor audience and their likely interest in the view (e.g., residents, visitors to important/valued landscapes or visitors to non-designated areas, motorists)
- The volume of visual receptors and the duration of time that receptors spend experiencing the view.

The *Guidelines for Landscape and Visual Impact Assessment* (2002) states "*changes affecting large numbers of people are generally more significant than those affecting a relatively small group of users.*" Similarly, The *Guidelines for Landscape and Visual Impact Assessment* (2013) states the visual receptors most susceptible to change include "...

*residents at home...people, whether residents or visitors who are engaged in outdoor recreation, including use of public rights of way whose attention or interest is likely to be focused on the landscape and on particular views; ...communities where views contribute to the landscape setting enjoyed by residents in the area".* This guidance is reflected in the method used to assess the sensitivity of the viewpoints to the Site e.g., views from a regionally important location where viewers' interest is specifically focussed on the landscape (such as views from a scenic viewpoint in a nature reserve) have been judged as having a high sensitivity to change as have large numbers of residential viewers.

Levels of sensitivity, shown in **Table 6**, vary according to the type of development and the visual receptor audience.

**Table 6: Defining viewpoint sensitivity**

Sensitivity	Attributes of viewpoint sensitivity categories
<b>High</b>	Large numbers of viewers or those with proprietary interest and prolonged viewing opportunities such as residents and users of attractive and/or well-used recreational facilities. Views from a regionally important location whose interest is specifically focussed on the landscape e.g., national park.
<b>Medium</b>	Medium numbers of residents (e.g., rural communities and townships) and moderate numbers of visitors with an interest in their environment e.g., visitors to reserves, including bush walkers, horse riders, trail bikers. Larger numbers of travellers with an interest in their surroundings e.g., local designated scenic routes. Views encompassing landscapes valued on account of their scenic amenity values e.g., identified by a scenic overlay in a local planning scheme.
<b>Low</b>	Small numbers of rural residents, receptors with a passing interest in their surroundings or transient views e.g., those travelling along principal roads and/or where scenic quality is already compromised. Viewers whose interest is not specifically focussed on the landscape e.g., workers, commuters, truck drivers.
<b>Negligible</b>	Very occasional numbers of viewers with a passing interest in their surroundings e.g., those travelling along minor roads, and views from the air.

### **3.8.3. Magnitude of change to visual amenity from representative viewpoints**

The magnitude of change to views and visual amenity depends on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature in the field of view of the receptor, or any change to the backdrop to, or outlook from, a viewpoint. The assessment assumes a worst-case wind turbine height, without mitigation. The level of effects on a view depends on the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, angle of view, duration of view and distance from the Site.

Magnitude of change is described as negligible (barely perceptible change), low (noticeable change), medium (considerable change) or high (dominant change), as illustrated in **Table 7**.

*Table 7: Defining magnitude of change to visual amenity*

Magnitude of change	Typical examples
High	<u>Dominant change</u> : Major changes in view at close distances, affecting a substantial part of the view, continuously visible for a long duration, or obstructing a substantial part or important elements of view. Generally, short distances (typically < 2.5 km) to the nearest wind turbine and one or more wind turbines visible in their entirety.
Medium	<u>Considerable change</u> : Clearly perceptible changes in views at intermediate distances, resulting in either a distinct new element in a significant part of the view, or a more wide-ranging, less concentrated change across a wider area. Generally, short to medium views (typically 2.5 km - 5 km) to the nearest wind turbine and generally the entire swept path of the blades of one or more wind turbines visible.
Low	<u>Noticeable change</u> : Minor changes in views at long distances or visible for a short duration, and/or are expected to blend in with the existing view to a moderate extent. Generally, medium to long distance views (typically 5 km - 10 km) to the nearest wind turbine and at least half the swept path of one or more wind turbines visible.
Negligible	<u>Barely perceptible change</u> : Change which is barely visible at a very long distance or visible for a very short duration, and/or is expected to blend with the existing view. Distant views (generally, >10 km) to the nearest wind turbine and/or only a small part of one or more wind turbines visible.
No impact	<u>No change</u> : No visible change as a result of Project infrastructure.

#### **3.8.4. Overall significance of impact on visual amenity from representative viewpoints**

The evaluation of overall potential impacts on visual amenity is based on the sensitivity of existing views to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of impacts on visual amenity exist; therefore, professional judgement and experience are applied to identify the level of significance. Each viewpoint is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles that can be used as a guide to this process, which provides transparency about how judgements have been made. The overall significance of change to visual amenity and individual viewpoints is determined by using **Table 8**.

*Table 8: Determining level of effect on visual amenity*

Level of effect		Magnitude of change in landscape			
		High (Dominant change)	Medium (Considerable change)	Low (Noticeable change)	Negligible (Barely perceptible change)
Sensitivity of viewer	High	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

 Denotes a 'Significant' impact.

 Denotes a 'not Significant' impact.

*Note: where no impacts would be experienced 'No Impact' is recorded*

Impacts which are graded as being 'Moderate', 'Moderate to Major' or 'Major' are those which are given greatest weight, relative to other levels of landscape impact, in decision making. They usually concern immediate landscapes around proposed wind farm sites and close views seen by sensitive viewers. 'Minor to Moderate' levels of impact are of progressively reducing importance. Impacts graded as 'Minor' also constitute effects which warrant consideration, but individually carry little weight in the decision-making process.

Impacts on the visual resource have been described by representative views in the Study Area. Impacts can be short term (i.e., those occurring during installation/construction of a development) or long term (i.e., those lasting for the lifetime of the Project). In addition, they can be wide-spread (i.e., taking up a large proportional change in the view) or localised.

As stated previously, the impact or effect of a wind farm is a subjective issue. Whilst some people regard wind turbines as attractive, graceful structures that symbolise clean energy; others find wind turbines unattractive and an unwelcome addition cluttering the skyline. For the purposes of this assessment, subjective interpretation of the Project has been avoided; rather, the focus has been directed on the significance of the impact (i.e., a transparent judgement on the sensitivity of the visual resource, combined with the anticipated magnitude of change to the view).

### 3.8.5. Preparation of visualisations

Visualisations (sometimes referred to as photomontages) are artists' illustrations that aim to represent an observer's view of a proposed development. For the purposes of this assessment, visualisations have been compiled to appreciate the potential visual impact of the presence of the Project from a selection of the representative viewpoints, which are described in **Section 8: Visual assessment** and illustrated in A3 format (in **Appendix 2**).

The methodology for the visualisation production has been based on the *Draft National Wind Farm Development Guidelines* (EPHC, 2010) and international guidance including the *Guidelines for Landscape and Visual Impact Assessment Second Edition* (2002) and *Guidelines for Landscape and Visual Impact Assessment Third Edition* (2013) and the *Visual Representation of Windfarms: Good Practice Guidance* (SNH, 2017).

The photomontages have been generated using digital photographs stitched from images obtained on Site, GIS software, and 3D modelling software (Trimble Sketchup) to geolocate, generate and render the wind turbines. Existing points onsite and background terrain is used to reference the position/direction of the photography with the 3D model camera. The rendered outputs are then layered into the existing image where background and foreground of the imagery is separated to allow for the rendered information to be inserted (Adobe Photoshop). It should be noted that every reasonable effort has been made to ensure the images are representative and have not been manipulated to downplay the extent of impact. This has, for example, included ensuring that the rendering provides an adequate 'contrast' between the wind turbine and background elements (e.g., lighter rendering against a dark backdrop and vice versa).

To ensure the photomontages consistently present a view that is representative of the human eye, the field assessment photographs were taken at average human viewing height. Photos were taken using a Canon EOS 6D Mark II camera (full frame sensor Digital Single Lens Reflex (DSLR)) with either a Sigma 50 mm f/1.4 DG JSM lens or Sigma 24 mm f/1.4 DG JSM lens where near the Project (to ensure sufficient vertical field of view (FoV)). The respective horizontal FoV (HFoV) of these lenses is approximately 40 and 75 degrees.

Photo stitching software and Adobe Photoshop were used to piece together the adjoining images to produce the montage. Although the parameters of human vision when stationary is often quoted as falling between the 45–60° (SNH, 2017), humans generally move their eyes, heads and bodies as necessary to experience a view. Therefore, a wider field of view has been used for the photomontages from which an inset representative field of view (75°) has been taken that is considered representative of the human field of view, which is in line with good practice. For example, The Draft National Wind Farm Development Guidelines (EPHC, 2010) states "*In creating a photomontage, depictions should not exceed 124° horizontal field of view*". In addition, the Visual Representation of Windfarms Good Practice Guidance (SNH, 2006) notes that "*...the size of photograph required to represent a view will vary for different projects and viewpoints, depending on the key characteristics of a view that need to be included within the image (defined by the landscape architect or experienced specialist assessor on Site), and the extent of the proposed windfarm which needs to be included*".

### **3.9. Lighting assessment**

No turbine lighting is proposed for this Project and ancillary security lighting associated with infrastructure/compounds would be minimal. Therefore, it is considered there is no requirement to undertake an obtrusive lighting assessment, for example, in line with *Australian Standard / New Zealand Standard 4282:2023 - Control of the Obtrusive Effects of Outdoor Lighting*.

### 3.10. Cumulative landscape and visual impact assessment

The aim of the cumulative LVIA, described in **Section 10: Cumulative assessment** is to describe and assess the ways in which the Project could potentially have additional impacts when considered in combination with other proposed and built developments in the wider area.

The cumulative LVIA is informed by descriptions of other similar scale projects to the extent that such data was publicly available at the time of this assessment. The cumulative situation may change as applications are made or withdrawn. Therefore, the cumulative assessment is current as of April 2025. The cumulative impact assessment methodology follows a qualitative method based on a three-step process, as follows:

*Table 9: Cumulative impact assessment methodology*

Cumulative assessment method	
Step 1	<p><b>Identification and description of projects within the LVIA Study Area:</b></p> <p>The projects included in the cumulative assessment are those that are considered 'likely' to proceed and/or have sufficient information in the public domain (e.g. a development application or information on a developer's website) to enable an assessment of the potential impacts. Projects need to be located sufficiently close (considered to be &lt;50 km) to the Project for cumulative landscape and visual effects to be possible.</p>
Step 2	<p><b>Project screening i.e. exclusion of projects anticipated to generate a negligible cumulative impact on landscape and visual amenity or with insufficient information:</b></p> <p>A provisional review has been conducted to streamline the assessment process to eliminate projects which are anticipated to generate negligible landscape and visual impacts or are considered, have insufficient information available or are unlikely to proceed.</p>
Step 3	<p><b>Assessment of potential for cumulative landscape and visual impacts:</b></p> <p>This step determines the nature and extent of potential impacts in relation to landscape and visual values of the region, as determined through the assessment criteria in the main LVIA. The assessment considers if the identified cumulative impact would be:</p> <ul style="list-style-type: none"> <li>• "Combined" – impacts that occur where a static receptor is able to view two or more developments from a standpoint/viewpoint within the receptors arc of vision (assumed to be 120 degrees for the purpose of this assessment) at the same time.</li> <li>• "Successive"– impacts that occur where a receptor is able to view two or more developments from a viewpoint but needs to turn their head to see them.</li> <li>• "Sequential" – impacts that occur where a receptor is moving from one area to another, for instance when a person is travelling along a road or track and is able to see two or more developments at the same, or at different times as they pass along the route. Sequential effects can potentially affect views from routes over a wide area, but with the exception of the largest developments (e.g. adjacent windfarms), have a limited effect when the developments are 25 km or more apart.</li> </ul>

## 4. Potential Project impacts

### 4.1. Key sources of potential impact

This section describes the key components of the Project that are relevant to this LVIA.

This assessment is based upon a 65 turbine layout, for which the Proponent is seeking development approval to support the Project. The proposed wind turbines, access roads and other associated infrastructure including substations are situated within the Site. It should be noted that development approval for the Project may allow some ‘micro-siting’ adjustments of turbine and infrastructure locations but these will be confined to within the Site.

Key components of the development activities anticipated for the construction, installation, operation, and decommissioning and rehabilitation, which are relevant to the assessment of landscape and visual impacts are set out in this section.


In describing wind turbines, it is necessary to understand the following components (described from bottom to top):

- foundations, typically concrete
- towers, typically steel
- nacelles (with gearbox and generator), which are attached to the hub
- rotors comprising a central hub and three blades. The term ‘blade tip’ refers to the tip of the blade at the uppermost point in its rotation.






#### 4.1.1. Construction phase




The construction phase of the Project is temporary and is estimated to be of a duration of 33 months, commencing in Q4 2026/Q1 2027. Site components and activities that may potentially impact on the landscape (including landscape features, character and amenity) and views and visual amenity during construction are described in **Table 10**.

*Table 10: Potential impacts during construction phase*

Construction activities and infrastructure	Indicative project imagery
<p><b>Site establishment and civil works</b> Civil works including levelling, earthworks, and local vegetation clearance and reinstatement work. Installation of temporary meteorological masts which will be decommissioned during construction of the wind farm</p>	 <p>Source: LatStudios</p>

Construction activities and infrastructure	Indicative project imagery
<p><b>Wind turbine foundations, hardstands and electrical infrastructure</b></p> <p>Construction of reinforced concrete wind turbine foundations (excavation will be determined at detailed design phase and is estimated to be approximately 15 m in radius to produce a hardstand of approximately 100 m by 50 m) and high voltage underground collector cable (installed adjacent to the access road where possible).</p> <p>Any of the material excavated to create the foundations will be stockpiled and reused to cover the foundations. Surplus material will be reused on site. Concrete for the foundations will be mixed at concrete batching plants, which are proposed to be part of the laydown areas within the Project site. Concrete batching material may be sourced off-site.</p>	 <p>Source: LatStudios</p>
<p><b>Wind turbines and meteorological mast(s)</b></p> <p>Progressive installation of the wind turbines and temporary and permanent meteorological mast(s). Meteorological mast(s) will include: Marker balls or high visibility flags or sleeves will be placed on the outside guy wires</p> <ul style="list-style-type: none"> <li>• Guy wire ground attachment points in contrasting colours to the surrounding ground/vegetation</li> <li>• Paint markings applied in alternating contrasting bands of colour to at least the top 1/3 of the mast.</li> <li>• At a minimum, steady red low intensity aviation hazard lighting installed at the highest point of the monitoring masts until such time as the masts are surrounded by the taller wind turbines.</li> </ul>	 <p>Source: Neoen</p>  <p>Source: Neoen</p>
<p><b>Construction traffic movement and materials storage</b></p> <p>Progressive transportation of the wind farm components (i.e., wind turbine blades, towers, hubs/nacelles); movement of plant and vehicle movements, including load deliveries to site; and onsite storage of the wind farm components.</p>	 <p>Source: LatStudios</p>  <p>Source: LatStudios</p>






Construction activities and infrastructure	Indicative project imagery
<p><b>Substation, BESS, operations and maintenance facility and overhead transmission connection</b></p> <p>Construction of proposed BESS, Western Power terminal and substation within the Site located to the west of the Brand Highway.</p> <p>Construction of a new Western Power 330 kV overhead transmission line to connect the substation to the existing network.</p> <p>The proposed area for both substation locations are also proposed to include the operational and maintenance facility. These areas typically contain vehicle parking spaces, septic ablutions and wash down areas as appropriate.</p>	 <p><i>Source: LatStudios</i></p>  <p><i>Source: Neoen</i></p>  <p><i>Source: Neoen</i></p>
<p><b>Construction compounds and laydown areas</b></p> <p>The temporary construction compounds and laydown areas will be located in already cleared areas and be formed into hardstand. Prior to forming the hardstand area, the topsoil will be removed and stockpiled adjacent to the hardstand area. The exact locations, nature and number of the temporary construction compounds and laydown areas will be established in consultation with the relevant landowners when a full construction methodology is determined.</p> <p>The construction compound areas will be used to manage construction activities. These compounds will likely include: portacabins (site offices, first aid facilities, canteen facilities, waste disposal and toilets); storage containers for tools and equipment; storage areas for plant, fuel storage, material and components; wash down facilities; and sufficient parking for the workforce, deliveries and visitors. Temporary offices, lunchrooms, and ablutions may also be established on wind turbine hardstands during the construction period.</p>	 <p><i>Source: LatStudios</i></p>  <p><i>Source: LatStudios</i></p>

Construction activities and infrastructure	Indicative project imagery
<p><b>External and internal site access roads</b></p> <p>Upgrades to the intersection of the Brand and Dandaragan Road and Rowes Road and Dandaragan Road may be required to facilitate site access.</p> <p>Site access is anticipated to be provided from the Brand Highway, Dandaragan Road, Rowes Road, Wayler Wayler Road, Stockyard Road and Bidgerabbie Road.</p> <p>Internal access tracks will be installed throughout the Site to connect wind turbines and other infrastructure. These would likely be up to 10 m wide and unsealed.</p> <p>Appropriate signage will be installed on relevant roads during the construction period to comply with necessary health and safety requirements.</p>	 <p>Source: LatStudios</p>  <p>Source: LatStudios</p>
<p><b>Construction workforce and accommodation</b></p> <p>The construction workforce is expected to reach approximately 280 personnel by month 6, with peak at of approximately 450 workers at 12 months; before reducing to approximately 160 workers by 30 months; and finally reducing to 10 operational workers by approximately 36 months.</p> <p>Neoen has completed an initial social locality overview and conducted, early consultation with local communities, businesses, and accommodation providers as part of its wind farm accommodation strategy. This includes workforce mapping to understand the scale and type of jobs the project will generate ranging. As part of the planning process, Neoen is assessing existing accommodation options in the region to identify capacity, suitability, and opportunities for collaboration with local providers.</p>	 <p>Source: LatStudios</p>

#### 4.1.2. Operational phase

The operational phase of the Project is estimated to last approximately 30 years. The potential impacts on the landscape (including landscape features, character and qualities) and visual amenity during operation are outlined in **Table 11**.

*Table 11: Potential impacts during operational phase*

Operational activities and infrastructure	
<p><b>Wind turbines, hardstands and access tracks</b></p> <p>WTGs and associated turbine hardstands (estimated to be up to approximately 100 m x 50 m).</p> <p>It has been assumed that operational scenarios would include up to 65 turbines at up to 261 m high; rotor diameter of up to 182 m and hub height of up to 170 m. Potential impacts arise from both the physical presence of the wind turbines and the movement of turbine blades.</p> <p>A permanent meteorological mast/wind monitoring tower is also likely to be required.</p>	 <p><i>Source: LatStudios</i></p>  <p><i>Source: LatStudios</i></p>
<p><b>Access roads</b></p> <p>Access roads to wind turbines (driving width of approximately 5.5 m after construction with 0.5 m road shoulders and a 1.5 m drain on one or both sides of the road), typically gravel capped.</p>	 <p><i>Source: Neoen</i></p>
<p><b>Other permanent ancillary infrastructure</b></p> <p>An operations, maintenance, and storage building, BESS, two potential substation locations with associated electrical ancillary infrastructure, and additional operational infrastructure areas are anticipated as part of the development.</p> <p>Up to 12 km of overhead transmission lines connecting the wind farm substation to the existing transmission network.</p>	 <p><i>Source: Neoen</i></p>  <p><i>Source: Neoen</i></p>

#### **4.1.3. Decommissioning and rehabilitation phase**

At the end of the operational lifetime of the Project's infrastructure, the Proponent may apply to repower the wind farm (replace the wind turbines) or replace the wind turbine components, such as the gearbox and generator.

Alternatively, the Project may be decommissioned. Decommissioning and rehabilitation would be conducted in accordance with all relevant approvals and authorisations and would involve the turbines and all other above-ground infrastructure on-Site being dismantled and removed from the Site, returning the landscape and associated views to their present condition. This includes all the underground infrastructure and overhead interconnection, and possibly the substation infrastructure. The tower bases would be cut back or topsoil built up over the foundation to achieve a similar result.

The access roads, if not required for farming purposes or fire access, would be removed and the Site reinstated to original condition and use. Access gates, if not required for farming purposes, would also be removed. The underground cables located below 300 mm that contain no harmful substances can be recovered if economically attractive or left in the ground. Terminal connections would be cut back to below 300 mm.

Site restoration and rehabilitation would allow rural activities to recommence in the areas of previous wind farm infrastructure after the wind farm infrastructure has been decommissioned.

This stage would be of shorter duration than the construction phase, consisting of the dismantling of all above ground structures and the reinstatement of disturbed ground. Typical elements would include temporary contractor compounds, and fencing, plant and vehicle movements (including use of tall cranes), laydown areas and machinery and material storage.

The duration of the decommissioning and rehabilitation activities are only temporary (up to approximately 12 months) and impacts on the landscape (including landscape features and its inherent character and qualities) and visual amenity are considered to be beneficial. Over the longer term it is anticipated that rehabilitation will reinstate the landscape character, views and visual amenity to their former conditions.

## 5. Legislative context and standards

This section summarises the key legislation, planning policies and guidance that have been identified that inform the LVIA process and/or indicate the sensitivity of the landscape to change. Where applicable, these provisions are shown on **Figure 4** and described in greater detail in **Appendix 3**.

The emphasis of this section is to identify those aspects of landscape or visual amenity that require assessment under legislation or relevant planning schemes so that these can be appropriately identified and assessed within the landscape assessment or visual assessment process. The purpose is to determine the extent to which valued and protected landscape and/or visual aspects may be potentially affected. Notably, it is not a formal assessment of the acceptability of the Project from a planning perspective; this is ultimately the responsibility of those determining any development application.

### 5.1. National

#### 5.1.1. The Environment Protection and Biodiversity Act 1999 (EPBC Act)

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) (Australia Government Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2025) is the principal overarching commonwealth legislation relating to the environment and is focussed on matters of national environmental significance (MNES).

There is no specific national legislation requiring or directing the assessment of scenic amenity for renewable or major infrastructure projects. However, the EPBC Act requires assessment of any 'action' that will have, or is likely to have, a significant impact on MNES.

The Project has sought to avoid direct impacts on any MNES within the Site such as listed threatened ecological communities (TECs). The *Banksia Woodlands of the Swan Coastal Plain* TEC was the only TEC identified within the Site. As TECs are not directly protected on account of their scenic values and the current wind turbine layout avoids direct impacts on areas supporting MNES vegetation, impacts on MNES have not been considered in detail in this LVIA.

The potential for indirect impacts on the landscape setting of Guraga Lake, a nationally important wetland, which is acknowledged for its aesthetic value and landscape amenity (Department of Environment and Conservation, 2009) and located in close proximity to the Site, has been considered in this LVIA.

#### 5.1.2. AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting

*AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2023) sets out guidelines for the control of the obtrusive effects of outdoor lighting and gives recommended limits for the relevant lighting parameters to contain these effects within tolerable levels. It refers to the potential effects of lighting systems on receptors including nearby residents and users of adjacent roads. It does not apply to road lighting or lighting systems that are of a cyclic or flashing nature.

Lighting proposed as part of the Project would need to address the relevant considerations of this standard- noting that public lighting and lighting for aviation safety is excluded from the standard as it is provided in the interest of public safety and security.

It is understood that some lighting will be required associated with the BESS, operations and maintenance facilities, substations, for site security and associated with turbine bases for maintenance. Based on the risk assessment for the wind turbines, aviation lighting is not likely required.

### **5.1.3. AS4970-2009: Protection of Trees on Development Sites**

*AS4970-2009: Protection of Trees on Development Sites* (Standards Australia, 2009) provides guidance on the principles for protecting trees on land subject to development. Where development is to occur, the Standard provides guidance on how to decide which trees are appropriate for retention, and on the means of protecting those trees during construction work.

## **5.2. State**

The relevant provisions of documents identified as being relevant to the LVIA process within the Western Australia State regulatory context for LVIA practice and policy are summarised in the sections below and described in greater detail where relevant in **Appendix 3**.

### **5.2.1. Environmental Protection Act 1986**

Part IV - *Environmental Impact Assessment of the Environmental Protection Act 1986* (WA) (EP Act) (Government of Western Australia, DJPCO, n.d.) requires the consideration of potential impacts on landscape and visual values associated with significant landforms, inland waters (such as Lake Guraga) and aesthetic values in accordance with relevant *Environmental Factor Guidelines* (Environmental Protection Authority, 2018) (Refer **Appendix 3** for details). No significant landforms have been identified within the Site.

### **5.2.2. State Planning Strategy 2050**

The *State Planning Strategy 2050* (SPP 2050) (WAPC, 2014) is the highest order planning document in Western Australia and provides the strategic context for planning and development decisions throughout the State. The SPP 2050 promotes renewable energy initiatives, acknowledges that 'character and amenity' and 'landscape and scenic quality' are factors that contribute to the identity of places and the tourism market.

A key objective of the SPP 2050 under the environment section of the strategy is "to conserve biodiversity, achieve resilient ecosystems, protect significant landscapes and manage the State's natural resources in a sustainable manner."

### **5.2.3. State Planning Framework**

The SPP 2050 objective is supported by the *State Planning Framework State Planning Policy 1* (WAPC, 2017), which sets out key principles, including relating to the environment, and provides the overall vision and strategies, policies and plans to address planning issues or regions of the State.

### **5.2.4. Statement of Planning Policy 2.0 - Environment and Natural Resources Policy**

*Statement of Planning Policy 2.0 - Environment and Natural Resources Policy* (SPP 2.0) (WAPC, 2003) defines the principles and considerations that represent good and responsible planning in terms of environment and natural resource issues within the framework of the State Planning Strategy. The SPP 2.0 notes that "Western Australia has a

*diversity of high value landscapes and scenic areas, many of which are unique to Australia”* and that planning strategies, schemes and decision making should:

- identify and safeguard landscapes with high geological, geomorphological or ecological values, as well as those of aesthetic, cultural or historical value to the community, and encourage the restoration of those that are degraded.
- in areas identified in the above, consider the level or capacity of the landscape to absorb new activities and incorporate appropriate planning and building design and siting criteria to ensure that new development is consistent and sensitive to the character and quality of the landscape.
- consider the need for a landscape, cultural or visual impact assessment for land use or development proposals that may have a significant impact on sensitive landscapes.

#### **5.2.5. State Planning Policy 2.5 - Rural Planning**

The purpose of *State Planning Policy 2.5 - Rural Planning* (SPP 2.5) (WAPC, 2016) is to protect and preserve Western Australia’s rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. SPP 2.5 supports the protection of valued landscape and views within planning schemes, strategies and decision making.

#### **5.2.6. Position Statement: Renewable energy facilities**

The *Position Statement: Renewable energy facilities* (WAPC, 2020) outlines the WAPC’s requirements to support the consistent consideration and provision of renewable energy facilities within Western Australia. It supersedes *Planning Bulletin No. 67 Guidelines for Wind Farm Development* (WAPC, 2004).

The policy identifies assessment measures to facilitate appropriate development of renewable energy facilities. It seeks to ensure these facilities are in areas that minimise potential impact upon the environment, natural landscape and urban areas while maximising energy production returns and operational efficiency.

The objectives of this position statement are to:

- guide the establishment of renewable energy facilities to support the *State Energy Transformation Strategy* (Energy Transformation Taskforce, 2019)
- outline key planning and environmental considerations for the location, siting and design of renewable energy facilities
- promote the consistent consideration and assessment of renewable energy facilities
- facilitate appropriate development of renewable energy facilities while minimising any potential impact upon the environment, natural landscape, and urban areas
- encourage informed public engagement early in the renewable energy facility planning process.

Relevant to this LVIA, the position statement notes that the location and siting of a renewable energy facility may require a visual and landscape impact assessment that addresses:

- landscape significance and sensitivity to change, site earthworks, topography, extent of cut and fill, the extent and type of vegetation, clearing and rehabilitation areas, land use patterns, built form character, public amenity and community values
- likely impact on views including the visibility of the facility using view shed analysis and simulations of views from significant viewing locations including residential areas, major scenic drives and lookouts
- layout of the facility including the number, height, scale, spacing, colour, surface reflectivity and design of components, including any ancillary buildings, signage, access roads, and incidental facilities
- measures proposed to minimise unwanted, unacceptable or adverse visual impacts.

It notes that *Visual Landscape Planning in Western Australia - A Manual for Evaluation, Assessment, Siting and Design* (WAPC, 2007) and *Wind Farms and Landscape Values* (Australian Wind Energy Association and the Australian Council of National Trust, 2005) provide detailed guidance on visual and landscape impact assessments, noting that the latter report is not available for review.

#### **5.2.7. Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design**

*Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design* (WAPC, 2007) provides advice to state agencies, local governments, developers and the community on techniques for incorporating visual landscape planning into the planning system and is intended to be used as a guide so that the practices of visual landscape evaluation and visual impact assessment can continue to evolve and mature over time.

The manual notes that a landscape and visual assessment should be presented using best practice techniques and notes that visual impact is based on several factors which affect the perceived visual quality. Several statements are included within the manual relevant to the landscape character of the LVIA Study Area:

- Western Australia's image has been shaped and defined by its rural and remote landscapes.
- The Wheatbelt region has a distinct character of broad-acre farming lots with stands of remnant vegetation, as well as shelterbelts of trees to protect the soils from wind and water erosion.
- The colours of the agricultural areas over the state vary and include the orange dolerite in the wheat-belt, with the occasional York gums.
- Rural areas have been somewhat undervalued for their inherent visual, aesthetic character, and landscape quality tends to be overlooked in statutory processes in rural areas, instead the perception of the land has primarily been in terms of economic return.

The manual also notes that:

*Existing and proposed wind farms in Western Australia apply to natural, rural and built landscape types. Examples of wind farms occur in each landscape type, in areas such as Albany (natural), Dandaragan (rural) and Fremantle (built). Visual landscape*

*assessments need to take account of these different landscape types, as well as implications regarding site selection in regional, local and site-specific contexts.*

### **5.2.8. Indian Ocean Drive Planning Guideline**

The *Indian Ocean Drive Planning Guideline* (WAPC, 2014) identifies the Indian Ocean Drive as one of Western Australia's principal tourist routes, offering a scenic coastal alternative to the Brand Highway. The Indian Ocean Drive was primarily designed to create a regional scenic coastal tourist route.

The Guidelines set out broad guidelines for the location, siting and design of various land uses and development within 500 m of this key road corridor with the purpose of retaining the rural and natural landscape. It also applies more generally to land that is outside of that corridor but may be prominently viewed from the road route. The intent is not to prevent development but to guide its location, siting and design.

The guideline notes that a variety of viewing experiences are provided along Indian Ocean Drive, and that views are often contained by landform. The Guideline identifies particularly significant viewing locations along the road route, including the availability of panoramic views from Nilgen, which is the most elevated part of Indian Ocean Drive. These panoramic views are 'rare' along the road route and considered particularly important.

The Guidelines include guidance to maintain the scenic character of this road route, and the three objectives for Indian Ocean Drive include that development should be:

- Inevident from the road
- Visible but blend within its setting
- Comprise a prominent feature along the road.

As due to the height and vertical prominence of wind turbines it is not considered that they will be 'inevident' from Indian Ocean Drive, the 'visible but blending' objective is considered most relevant to this LVIA. This objective seeks that:

- the landscape's natural features remain prominent, and dominate the landscape.
- development may be visible but not prominent
- development is sited with care to ensure that individual components that have the potential to draw attention, such as reflective buildings, are not visible.
- the forms, lines, colours and textures of a development need to appear compatible to the extent that any contrasts do not draw attention.

It is noted that as the Project is located around 18 km from Indian Ocean Drive, views toward the Project would be considered as a 'background view' at >6.5 km (which is the threshold established in the Guidelines).

Guidance contained in the *Indian Ocean Drive Planning Guideline Supplementary information - suitable species for roadside vegetation screening* (Department of Planning, 2014) should be considered should roadside vegetation screening be considered appropriate to assist in integrating the Project into the landscape setting.

## **5.3. Regional**

At the regional level, the Site is located within the Wheatbelt planning region. Relevant Wheatbelt region policies and guidelines relevant to the LVIA and the assessment of the Project are summarised below and discussed in further detail in **Appendix 3**.

### 5.3.1. Wheatbelt Regional Planning and Infrastructure Framework

The *Wheatbelt Regional Planning and Infrastructure Framework* (WAPC, 2015) is a regional strategic planning document that provides an overview of regional planning issues and a basis for ongoing planning and development. The LVIA Study Area includes areas within both Central Coast and Central Midlands sub regions of the Wheatbelt, whilst the Site falls entirely within the Central Coast sub region as identified on Map 1 of the framework.

The framework includes several relevant provisions for the protection of landscape and scenic values in the Wheatbelt region. This includes the Valued Natural Amenity objective which requires that “*environmental and landscape values that support the social, cultural and economic development of the region are managed for current and future generations.*”

The framework also identifies the broad landscape units of the Wheatbelt on Map 6. Landscape units relating to the LVIA Study Area include the Coastal and Wheatbelt landscape units.

### 5.3.2. Other relevant documents

The following regional planning documents have also been reviewed and considered in the preparation of this LVIA:

- *RDA Wheatbelt Regional Plan 2013 – 2018 – Version 1* (Regional Development Australia Wheatbelt Inc., 2013)
- *Guilderton to Kalbarri Sub-regional Strategy – May 2019* (WAPC, 2019).

## 5.4. Local

At the local level, the Site is located within the Shire of Dandaragan, so the relevant provisions of the *Shire of Dandaragan Local Planning Strategy 2020* (SDLPS) (Shire of Dandaragan, 2020) and the *Shire of Dandaragan Local Planning Scheme No.7* (Shire of Dandaragan, 2024) apply as described in **Section 5.4.1: Shire of Dandaragan Local Planning Strategy** and **Section 5.4.2: Shire of Dandaragan Local Planning Scheme**.

### 5.4.1. Shire of Dandaragan Local Planning Strategy

The *Envision 2029 - Shire of Dandaragan Local Planning Strategy* (SDLPS) (Department of Planning, Lands and Heritage (DPLH), 2020) is generally supportive of renewable energy development within the rural hinterland (including within the Site as illustrated on Figure 1 and Figure 2 of the SDLPS) subject to the consideration of the requirements of the *Position Statement: Renewable energy facilities* (WAPC, 2020).

The planning strategy seeks to protect and enhance valued rural and natural landscapes that are identified as being valued by residents and tourists alike, including:

- lakes and wetlands
- flat-topped peaks and ridges
- individual or massed plants that stand out from the kwongan or cleared pasture, such as groves of banksias or grass trees
- the kwongan vegetation in itself, carpeting the rolling landscape
- rock stacks and islands
- stark, white mobile dunes and sand sheets.

The planning strategy also:

- identifies that the Shire occupies three different landscape character areas, the coastal plain, bounded on its inland side by the Gingin Scarp; the higher central area characterised by low ranges and isolated flat-topped hills by the Dandaragan Scarp; and the flatter, elevated terrain of the Dandaragan Plateau.
- notes that hinterland areas encompass diverse flora, unique geology and cultural heritage, which act as recreation and tourism attractors for visitors.
- acknowledges that the landscape in the western portion of the shire is significant at a State level for a combination of reasons, including:
  - its open character, with its low dunes carpeted in low-growing heath, providing extensive views across pristine-appearing landscapes;
  - the occasional elevated flat-topped hills;
  - the great diversity of plant species, which provides an exceptionally colourful display in spring, bringing visitors from around the world;
  - the large, white, mobile dunes near the coast;
  - and ocean vistas that include surf breaking over reefs.
  - The general lack of development visible from major travel routes.
- notes that the landscape is very sensitive to the impacts of land use changes due to the availability of long distance views across the landscape and high level of visibility of changes
- seeks to retain remnant vegetation
- requires consideration of potential impacts of development on views experienced from tourism destinations e.g. national parks and from major travel routes such as the Indian Ocean Drive, Brand Highway (and their roadside rest areas and lookout points) and other major roads connecting to coastal settlements.

#### **5.4.2. Shire of Dandaragan Local Planning Scheme**

The *Shire of Dandaragan Local Planning Scheme No.7* (DPLH, 2022) identifies that the Site includes areas located within the Rural zone and a small area zoned for Public Purposes: Gravel.

The objective of the Rural zone, as outlined in Section 3.2 Objectives of the Zones is “*To provide for a range of rural activities such as broadacre and diversified farming so as to retain the rural character and amenity of the locality, in such a way as to prevent land degradation and further loss of biodiversity.*”

The *Shire of Dandaragan Local Planning Scheme No. 7* does not list a wind farm or renewable energy facility as a land use in the Scheme and therefore, the Project is subject to planning assessment and public consultation by the Shire of Dandaragan in accordance with the requirements of clause

#### **5.4.3. Draft Shire of Dandaragan Local Planning Policy 9.14 Renewable Energy Facilities**

On May 26 the Shire of Dandaragan released the draft *Local Planning Policy 9.14 Renewable Energy Facilities* (Shire of Dandaragan, 2025) to provide direction and guidance on the development of renewable energy facilities (including wind farms) within the Shire. The draft policy requires a LVIA be prepared to support the development application informed by the Western Australian Planning Commission’s *Visual Landscape Planning in WA: A manual for evaluation, assessment, siting and design* and the Australian Council of National Trust’s *Wind Farms and Landscape Values* (2005) .

Relevant to LVIA, the objectives of the draft policy include to:

- To achieve renewable energy facility layouts which do not compromise the safety or amenity of the local community, aviation activities, or the continuation of land use activities occurring on nearby land.
- To protect areas of visual, natural and heritage significance and ensure renewable energy facilities are appropriately and sensitively sited to mitigate any potential adverse impacts.

The draft policy also outlines several development requirements relevant to the assessment of impacts on landscape and visual values:

- Wind turbines are to be setback a minimum of 1.5 km from any sensitive land use.
- Wind turbines are to be setback from property boundaries a minimum of 3 times the total height of the structure including the propellor blades at the highest point, or 500 m, whichever is greater.
- Clearing of native vegetation is to be minimised. Renewable energy facilities should be sited on cleared farming land, preferably near the existing power grid.
- Wind turbines should be located in flatter landscapes, where feasible, to reduce visibility due to shortening the visual perspective of the structure.
- Wind turbines should have uniformity in terms of colour, size, and shape.
- Wind turbines should not adversely impact upon nearby properties by reason of shadowing, flickering, reflection, or blade glint.
- Where practical, landscaping should be implemented within the development site to mitigate the visual impact of the development from sensitive land uses and public roads.

#### 5.4.4. Other relevant documents

Additional Shire of Dandaragan strategic planning documents and planning policies and schemes for the adjacent Shire of Gingin, Shire of Victoria Plains and the Shire of Moora LGAs (as the visibility of the wind farm is likely to extend into these LGAs) have also been considered in the preparation of this LVIA where relevant. The relevant provisions of the following documents are summarised in **Appendix 3**:

- *Shire of Dandaragan Council Plan* (Shire of Dandaragan, 2024)
- *Envision 2029 – Shire of Dandaragan Economic and Tourism Development Strategy* (Shire of Dandaragan, 2020)
- *Shire of Dandaragan Local Tourism Planning Strategy* (Tourism Western Australia, 2012)
- *Shire of Gingin Local Planning Strategy* (Shire of Gingin, 2012)
- *Shire of Gingin – Town Planning Scheme No. 9 (DPLH, 2025)*
- *Shire of Moora Local Planning Scheme No. 4 (DPLH, 2021)*
- *Shire of Moora Local Planning Policy – Renewable Energy Facilities, Associated Transmission and Storage Infrastructure and Future Technologies* (Shire of Moora, 2024)
- *Shire of Victoria Plains Local Planning Strategy* (Planwest, 2012)
- *Shire of Victoria Plains Local Planning Strategy Background Report* (Planwest, 2010).

## 5.5. Summary of local planning context

Overall local planning documents within the LVIA Study Area are supportive of renewable energy development, which is identified as a key economic opportunity for the region.

The LVIA study Area is acknowledged as supporting some of the most diverse, unique and picturesque landscapes in Western Australia, which are valued by residents and tourists alike and are considered to be one of the areas primary assets that support tourism in the region. Relevant outcomes sought by local authorities that have been considered in the LVIA include:

- Protection and enhancement of valued rural and natural landscapes including:
  - lakes and wetlands
  - flat-topped peaks and ridges
  - individual or massed plants that stand out from the kwongan or cleared pasture, such as groves of banksias or grass trees
  - the kwongan vegetation in itself, carpeting the rolling landscape
  - rocky coastal headlands and associated pocket beaches
  - rock stacks and islands
  - stark, white mobile dunes and sand sheets
  - karst formations.
- Maintenance and enhancement of rural character and landscape amenity values.
- Consideration of the potential sensitivity of the landscape to the impacts of land use changes due to the availability of long distance views across the landscape and high level of visibility of changes
- Retention of remnant vegetation
- Consideration of potential impacts on views experienced from tourism destinations e.g. national parks and from major travel routes such as the Indian Ocean Drive, Brand Highway (and their roadside rest areas and lookout points) and other major roads connecting to coastal settlements
- Maintenance of the visual quality of areas adjacent to townsites
- Maintenance of the visual quality of areas adjacent to major tourism routes, with particular consideration of the potential visual impact of development of the coastal environs as viewed in particular from Indian Ocean Drive
- Visual and landscape impacts associated with renewable energy projects are addressed and minimised
- External lighting designed to minimise light spill and glare on adjoining properties
- Plant and equipment to be stored and screened or remote from public areas.

## 6. Existing environment

### 6.1. Regional landscape context

The Project is located within the Shire of Dandaragan in the northwestern part of the Wheatbelt region of Western Australia, referred to as the Central Coast Sub Region (WAPC, 2023). The LVIA Study Area also includes areas within the Shire of Gingin, Shire of Moora and Shire of Victoria Plains (the latter two of which are within the Central Midlands Sub Region).

The Site and its wider landscape context are illustrated in **Figure 1**, **Figure 2** and **Figure 3** included in **Appendix 1**.

#### 6.1.1. Settlement and infrastructure

The Site lies within a rural area that supports a mosaic of cleared and vegetated areas and rural dwellings on typically large land holdings.

Towns and settlements within the LVIA Study Area and their populations (Urban Centres and Localities (UCL) or suburb and locality (SL)) (Australian Bureau of Statistics (ABS), 2021) are described in **Table 12**.

*Table 12: Towns and settlements within LVIA Study Area*

Town/ settlement	LGA	Description	Population (ABS, 2021)	Distance from nearest turbine
Lancelin	Shire of Dandaragan	A coastal fishing town that is a popular holiday and tourism destination.	746 people (UCL) 786 people (SL)	Approximately 27 km southeast
Dandaragan	Shire of Dandaragan	A small rural town surrounded by rural land uses.	292 people (SL)	Approximately 10 km north
Cataby	Shire of Dandaragan	A small rural settlement and a popular rest stop on the Brand Highway (Tourism Western Australia, 2025).	103 people (SL)	Approximately 15 km northwest
Regans Ford	Shire of Dandaragan	A small rural settlement located on the Brand Highway that supports the Windmill Roadhouse and the Regans Ford Holiday Park and a rest area on the Moore River.	25 people (SL)	Approximately 3 km south
Moora	Shire of Moora	A larger rural town surrounded by rural land uses.	1,591 people (UCL) 1,755 people (SL)	Approximately 25 km northeast

The rural townsite of Koojan does not support any significant development, with a limited number of residential dwellings located within the area zoned for rural town uses.

The LVIA Study Area also supports ‘rural living’ areas on the outskirts of Moora and Dandaragan and ‘rural lifestyle’ areas associated with Ocean Farms and Seaview Park along with additional rural residential receptors in rural areas. Receptors within the localities of Yathroo, Regans Ford and Mimegarra may experience close views (< 2.5 km) toward the Project from their properties.

The Indian Ocean Drive, Brand Highway (which traverses the Site), Bindoon Moora Road and Midlands Road are the key State controlled roads within the LVIA Study Area. The Annual Average Daily Traffic (AADT) traffic count of these roads (Main Roads Western Australia, 2024) and the distance of these roads from the nearest turbine within the Site are provided in **Table 13**.

*Table 13: State controlled roads, AADT, heavy vehicle use and distance from nearest turbine within Site*

Road name	AADT	Percentage heavy vehicles	Distance from nearest turbine
Indian Ocean Drive	Up to 3,146	13.0% - 27.6%	25.4 km
Brand Highway	Up to 2,144	21.4% - 37.1%	320 m
Bindoon-Moora Road (includes Padbury Street in Moora)	Up to 712	14.3% - 33.3%	25.5 km
Midlands Road (includes Gardiner Street, Clinch Street and Roberts Road in Moora)	Up to 567	16.6% - 39.5%	28.4 km

Other key local connector roads within the LVIA Study Area (outside of townships) include Badgingarra Road, Cataby Road, Cowalla Road, Dandaragan Road (which traverses the Site), K.W. Road, Mogumber Road West, Mogumber West Road, Moora – Caro Road, Moora – Miling Road, North West Road, Orange Springs Road and Sappers Road. There are numerous other local roads within the LVIA Study Area including several that are located within or adjacent to the boundary of the Site including Bidgerabbie Road, Dambadgie Road, Menardie Road, Rowes Road, Stockyard Road, Walyer Walyer Road, Walyoo Road, and Yandin Road. With the exception of Rowes Road (which is a local distributor road and sealed), these are all unsealed local access roads.

The Geraldton to Mullewa railway line traverses the eastern part of the LVIA Study Area, generally following the alignment of Bindoon-Moora Road.

There are several existing wind farms within the LVIA Study Area including, as illustrated on **Illustration 3** below:

- Yandin Wind Farm located to the immediate north of the Site which comprises 51 WTGs with a height of 180 m and a 10 km transmission line connection (Yandin WF Pty Ltd, n.d.).
- West Hills Wind Farm, which is located approximately 17 km to the west of the Site and comprises 10 WTGs (height of up to 85 m) (The Wind Power, 2025) and an additional 6 Energon E40/500 WTGs with a maximum hub height of 65 m that were recently installed.

- Karakin Wind Farm, which is located to the southwest of the Site and comprises 10 WTGs (height of up to 85 m) (The Wind Power, 2025).



*Yandin Wind Farm*



*West Hills Wind Farm*



*Karakin Wind Farm*

*Illustration 3 Existing wind farms in the LVIA Study Area*

Additional renewable energy developments are located to the north of the LVIA Study Area including Emu Downs Wind Farm, Emu Downs Solar Farm, Badgingarra Wind Farm and the Badgingarra Solar Farm. Several existing 132 kV OHTL corridors and underground gas pipelines also existing in the LVIA Study Area. There are also several wind farms and solar farms that are approved or proposed within the LVIA Study Area and broader region as discussed in **Section 10: Cumulative assessment**.

The LVIA Study Area also supports mining operations including the Cataby Mineral Sands Project (which includes areas within the Site), Cooljarloo mine situated in the northwest of the LVIA Study Area and the Boonanarring mine located in the southern part of the LVIA Study Area.

### **6.1.2. Interim Biogeographic Regionalisation for Australia**

The Interim Biogeographic Regionalisation for Australia (IBRA) is a biogeographic regionalisation of Australia developed by the Australian Government's (then known as) Department of Sustainability, Environment, Water, Population and Communities (now DCCEEW) and represents a landscape-based approach to classifying the land surface of Australia. The IBRA data consists of two datasets: IBRA bioregions, which are a larger scale regional classification of homogenous ecosystems; and subregions, which are more localised. While bioregions have been defined mainly for the purposes of ecosystem planning and monitoring, the nominal attributes that make up IBRA are climate, lithology/geology, landform, vegetation, flora and fauna, and land use, which are themes typically used to define landscape character at a high level. IBRA 7.0 was released in 2012, which delineates 89 biogeographic regions and 419 sub regions, each reflecting a unifying set of major environmental influences which shape the occurrence of flora and fauna and their interaction with the physical environment across Australia. The bioregion information enables a high-level desktop understanding of the different landscape settings of the LVIA Study Area. The descriptions for the sub-regions that accompany IBRA 7.0 are not currently published. However, upon request, the Queensland Government Environmental Resources Information Network (ERIN) were able to supply descriptions of each of the subregions in the LVIA Study Area for the IBRA 5.1 dataset (which follows similar boundaries to the current version in the vicinity of the Site).

IBRA regions and subregions occurring within the LVIA Study Area as defined by IBRA 7.1 (DCCEEW, 2023) and descriptions (ERIN, 2012) for each of these subregions are provided in **Table 14**. The Site contains areas within the Dandaragan Plateau and Swan Coastal Plain subregions.

Table 14: IBRA regions and subregion descriptions

IBRA region and subregion	Description
Swan Coastal Plain - Dandaragan Plateau (SWA01)	Plateau bordered by Derby and Dandaragan Faults. Cretaceous marine sediments mantled by sands and laterites. Characterised by Banksia low woodland, Jarrah - Marri woodland, Marri woodland, and by scrub-heaths on laterite pavement and on gravelly sandplains. Warm Mediterranean (700 mm).
Swan Coastal Plain - Perth (SWA02)	Low lying coastal plain, mainly covered with woodlands. It is dominated by Banksia or Tuart on sandy soils, <i>Allocasuarina obesa</i> on outwash plains, and paperbark in swampy areas. In the east, the plain rises to duricrusted Mesozoic sediments dominated by Jarrah woodland. Warm Mediterranean. Three phases of marine sand dune development provide relief. The outwash plains, once dominated by <i>A. obesa</i> -marri woodlands and Melaleuca shrublands, are extensive only in the south. Colluvial and aeolian sands, alluvial river flats, coastal limestone. Heath and/or Tuart woodlands on limestone, Banksia and Jarrah-Banksia woodlands on Quaternary marine dunes of various ages, Marri on colluvial and alluvials. Includes a complex series of seasonal wetlands. Also includes Rottnest, Carnac & Garden Is etc. Mediterranean (1000 - 600 mm).
Geraldton Sandplains - Lesueur Sandplain (GES02)	Coastal Aeolian and limestones, Jurassic siltstones and sandstones (often heavily lateritized) of central Perth Basin. Alluvials associated with drainage systems. There are extensive yellow sandplains in south-eastern parts, especially where the sub-region overlaps the western edge of the Pilbara Craton. Shrub-heaths rich in endemics occur on a mosaic of lateritic mesas, sandplains, coastal sands and limestones. Heath on lateritized sandplains along the sub-region's north-eastern margins. Mediterranean climate.
Jarrah Forest - Northern Jarrah Forest (JAF01)	Duricrusted plateau of Yilgarn Craton characterised by Jarrah-Marri forest on laterite gravels and, in the eastern part, by Marri-Wandoo woodlands on clayey soils. Eluvial and alluvial deposits support Agonis shrublands. In areas of Mesozoic sediments, Jarrah forests occur in a mosaic with a variety of species-rich shrublands. Warm Mediterranean.  The area east of the Darling Scarp, overlying Archaean granite and metamorphic rocks of an average elevation of 300 m, capped by an extensive lateritic duricrust, dissected by later drainage and broken by occasional granite hills. In the east the laterite becomes deeply dissected until it compresses isolated remnants. Rainfall is from 1100 mm on the scarp to ca. 700 mm in the east and north. Vegetation comprises Jarrah - Marri forest in the west with Bullich and Blackbutt in the valleys grading to Marri and Wandoo woodlands in the east with Powder bark on breakaways. There are extensive but localised sand sheets with Banksia low woodlands. Heath is found on granite rocks and as a common understorey of forests and woodlands in the north and east.
Avon Wheatbelt - Kattanning (AVW02)	Zone of rejuvenated drainage: Erosional surface of gently-undulating rises to low hills with abrupt breakaways. Continuous stream channels that flow in most years. Colluvial processes are active. soil formed in colluvium or in-situ weathered rock. Includes woodland of Wandoo, York Gum and Salmon Gum with Jam and Casuarina and some areas of proteaceous scrub-heaths, rich in endemics, on residual lateritic uplands and derived sandplains.

Note: these descriptions were provided directly to LatStudios staff by Queensland Government Environmental Resources Information Network (ERIN) (personal correspondence).

### 6.1.3. Physiography and landform

The LVIA Study Area includes several key geological features that inform its landscape character (Department of Water and Environmental Regulation, 2017). In addition to the coastline (and associated marine areas and islands), key geological features include the:

- Gingin Scarp, which defines the edge of the coastal plain and is a steep slope resulting from the erosion of the elevated Dandaragan Plateau and Arrowsmith region to the east
- Dandaragan Scarp (in the north of the LVIA Study Area)
- Darling Fault (in the east of the LVIA Study Area), which defines the edge of the Darling Plateau.

These features effectively divide the LVIA Study Area into broad zones that correspond with marine areas and the soil landscape mapping types described below in **Table 15**.

As shown on **Figure 3**, and illustrated on **Illustration 4** below, landform within the Site and wider LVIA Study Area is varied and includes:

- lower-lying level to gently inclined plains and rises
- gently undulating dune systems
- gently undulating and rolling low hills
- lateritic outcrops and breakaways (such as the Yandin Breakaway).

Areas within the coastal plain are generally lower lying with elevations up to 150 m AHD. To the west of the Gingin scarp and Brand Highway, elevations are typically higher (between 100 m to 370 m AHD).



*Transition from Dandaragan Plateau to coastal Plain*



*Yandin Breakaway*



*Undulating dune systems*



*Transition from Darling Plateau to Dandaragan Plateau*



*Flat level and open plains*



*Undulating rural hills*

*Illustration 4 Physiography and Landform across the LVIA Study Area*

#### 6.1.4. Hydrology

The Indian Ocean is located in the westernmost part of the LVIA Study Area and due to the distance of marine areas and seascapes from the Project these are not discussed in detail in this LVIA.

The majority of the rest of the LVIA Study Area is within the Moore-Hill Rivers Basin, with the Site located within the Minyulo Caren Caren catchment. A very small area within the south of the LVIA Study Area is within the Swan Coastal Basin.

The key watercourses within the LVIA Study Area are the Moore River, Moore River North branch and Coonderoo River. There are numerous other minor watercourses in the LVIA Study Area including Mullering Brook, Minyulo Brook, Caren Caren Brook and Yatheroo Brook. These watercourses generally flow in an east-west direction and with the exception of the Moore River, do not flow into the ocean, rather they drain into swamps and lakes adjacent to the coast (Department of Primary Industries and Regional Development (DPIRD), 2007) and the porous sands and limestone of the coastal plain (Shire of Dandaragan, 2021). Surface water movement in coastal areas is typically only typically apparent at the end of winter when the chains of lakes and swamps are filled and are often connected by broad streams (DPIRD, 2007).

There are numerous lakes and swamps and seasonally inundated areas within the LVIA Study Area including Guraga Lake and the Karakin Lakes, which are listed in the Directory of Important Wetlands in Australia (DIWA, 2024). These lakes and wetlands provide amenity value and while not promoted as tourism destinations, may support low levels of recreational use e.g. the *Resource Condition Report for a Significant Western Australian Wetland: Lake Guraga* (Department of Environment and Conservation, 2008) states that “*Lake Guraga is valued by the local community for the amenity it provides. It is a picturesque lake in a near-natural setting. The site is popular for bird-watching and spectacular spring concentrations of waterbirds can be viewed.*”

There are also constructed farm dams located throughout the LVIA Study Area. Collectively, these water features contribute to the character of the landscape and in some instances, provide a high level of visual contrast to the surrounding agricultural landscape (e.g. where marshland vegetation or standing water is present). Examples of hydrological features are shown in **Illustration 5** below.



*Moore River*



*Lake adjacent Brand Highway*



*Moore River North Branch*

**Illustration 5** Hydrological features of the LVIA Study Area

### 6.1.5. Soil landscape mapping

Soil landscape zones (SLZ) are regional units based on geomorphologic or geological criteria (Schoknecht et al. 2004). There are eight SLZs within the LVIA Study Area. The majority of the LVIA Study Area and the Site are within Dandaragan Plateau Zone, while small areas in the west are within the Bassendean Zone and Arrowsmith Zone. Descriptions of the zones present within the LVIA Study Area are described in Table 15.

*Table 15: Soil Landscape Mapping Zones as within the Study Area*

Zone	Description
<b>Dandaragan Plateau Zone</b>	Gently undulating plateau with areas of sandplain and some laterite. On Cretaceous sediments. Broad u-shaped valleys 80-150 m deep, smaller V-shaped east of the Gingin Scarp in the south. Soils are formed in colluvium and weathered rock.
<b>Bassendean Zone</b>	Mid Pleistocene Bassendean sand. Fixed dunes inland from coastal dune zone. Non-calcareous sands, podsolised soils with low-lying wet areas.
<b>Arrowsmith Zone</b>	Dissected lateritic sandplain on Cretaceous and Jurassic sediments. Bounded in the east by the Dandaragan Scarp and in the south and west by the Gingin Scarp. Sandy and gravelly soils formed in colluvium and rock weathered in situ.
<b>Northern Zone of Ancient Drainage</b>	An ancient plain with low relief on weathered granite. There is no connected drainage, salt lake chains occur as remnants of ancient drainage systems, which now only function in very wet years. Lateritic uplands dominated by yellow sandplain.
<b>Northern Zone of Ancient Drainage</b>	Erosional surface of gently undulating rises to low hills. Continuous stream channels that flow in most years. Colluvial processes are active. Soils formed in colluvium or in-situ weathered rock. Mainly from Jimperding Metamorphic Rocks.
<b>Perth Coastal Zone</b>	Coastal sand dunes and calcarenite. Late Pleistocene to Recent age. Calcareous and siliceous sands and calcarenite. (Quindalup and Spearwood Systems).
<b>Eastern Darling Range Zone</b>	Moderately to strongly dissected lateritic plateau on granite with eastward-flowing streams in broad shallow valleys, some surficial Eocene sediments. Soils are formed in laterite colluvium or weathered in-situ granite.
<b>Pinjarra Zone</b>	Alluvial deposits (early Pleistocene to Recent) between the Bassendean Dunes Zone and the Darling Scarp, colluvial and shelf deposits adjacent to the Darling Scarp. Clayey to sandy alluvial soils with wet areas.

### 6.1.6. Land use and vegetation

With the exception of land uses associated with coastal and rural towns, rural residential areas and areas within reserves used for nature conservation, existing land use within the Site and the eastern part of the LVIA Study Area is dominated by rural land uses including cropping and grazing. The coastal part of the LVIA Study Area supports extensive areas of nature conservation and other minimal use while some rural land uses also occur. Some areas also support mining and plantation forestry.

In rural areas remnant vegetation is largely limited to localised patches throughout the landscape including that associated with reserves, tree belts associated with road

corridors and scattered vegetation associated with watercourses, wetlands and gullies. Remnant vegetation where present across the LVIA Study Area varies and is dominated by heath, scrub-heath, thicket and low banksia woodland (kwongan) along the coastal plain and woodland (mainly marri and wandoo), and open to sparse jarrah-marri woodland with low banksia woodlands in inland areas. These vegetation communities support spectacular wildflower displays in spring (Shire of Dandaragan, 2021).

#### **6.1.7. Protected areas, recreation, and tourism**

There are two national parks, one State forest, one conservation park and several nature reserves and other conservation areas within the LVIA Study Area. The primary purpose of these conservation areas is the protection of flora and fauna; however, these reserves may also support low impact nature-based recreation, including wildflower viewing and contribute to the character of the LVIA Study Area. With the exception of infrastructure associated with Nilgen Lookout and Yandin Lookout, there is limited formal recreation infrastructure in these areas.

Badgingarra National Park is described as “*one of the most dazzling highlights among the largest collection of wildflowers on Earth*” (Tourism Western Australia, 2025). The northern parts of this national park (located outside of the LVIA Study Area) provide formal opportunities for bushwalking and scenic views across the landscape, including from two lookout points (Trails WA, 2025). Due to their distance from the Project, impacts on these lookouts and trails has not been considered in this LVIA.

Other key tourism attractions in the LVIA Study Area relevant to this assessment due to the potential to experience views toward the Project from these locations include:

- The Lancelin Sand Dunes located to the northeast of the town, which provide recreation opportunities and views across the surrounding farmland, sand hills and coastline (Tourism Western Australia, 2024).
- Yandin Lookout (noting that the primary view is toward the coast), which provides close views to the Yandin Wind Farm and associated OHTL.
- Nilgen Lookout (noting that the primary view is toward the coast) and the Nilgen Wildflower Walk, which provides panoramic views across the surrounding landscape.
- A ‘very attractive rest’ area located on the Moore River adjacent to Regans Ford, which is very popular, particularly with campers (Shire of Dandaragan, 2021).

Indian Ocean Drive and the Brand Highway are State significant scenic routes. Indian Ocean Drive is described as ‘a stunning coastal route’ (Shire of Dandaragan, 2025) and passes predominately through natural landscapes. Views along Indian Ocean Drive are often restricted and enclosed by dune ridges that run parallel to the road or to the coast (WAPC, 2014), however, elevated parts of Indian Ocean Drive within the LVIA Study Area provide views toward the existing Yandin Wind Farm, West Hills Wind Farm and Karakin Wind Farm. The Brand Highway (which traverses part of the Site) passes through both natural and rural landscapes and provides close views toward wind turbines associated with Yandin Wind Farm.

The other key promoted tourist drives within the LVIA Study Area is the Dandaragan Way, which is described as a ‘*wonderfully scenic tourist drive*’ that provides an alternative route to the Brand Highway from Regans Ford to Badgingarra and views of ‘*stunning scenery*’

*including rolling hills and running creeks as you traverse through the wonder of enormous wind turbines.'*

There are also numerous suggested self-drive itineraries promoted by the Turquoise Coast Visitor Centre (n.d.), which promote the Dandaragan Way, Yandin Lookout and the towns of Lancelin, Moora, Dandaragan and Regan's Ford (including the riverside rest area).

## 6.2. Regional landscape character

*Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) provides an inventory of Western Australia's diverse and unique landscapes and provides a broad scale framework for describing landscape character values, including detailed descriptions. The study also defines Landscape Character Sub Types, which are distinctive subdivisions within broader LCTs and identifies aesthetic values associated with these LCTs.

The LVIA Study Area includes areas within the Dryandra Uplands and Geraldton Plain Landscape Character Sub Types of the Wheatbelt Plateau LCT and the Swan Coastal Plain Landscape Character type (CALM, 1994). The characteristics of these areas are summarised as follows:

- The Dryandra Uplands Landscape Character Sub Type consists of an agricultural landscape featuring extensive open bleach blonde paddocks, occasionally punctuated by dams and windmills with long views across the undulating terrain.
- The Geraldton Plain Landscape Character Sub Type comprises distinct landform elements linked by agricultural land and unique remnant sandplain vegetation (Kwongan).
- The Swan Coastal Plain LCT comprises a low-lying sandy plain along the coastline supporting coastal dune systems (including the Bassendean and Spearwood dune systems) and foothills, limestone cave systems, low heath and banksia woodlands.

The descriptions of these broad LCTs as defined in *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) have informed the landscape character assessment. Landform, vegetation and waterform elements considered to have high scenic quality within these LCTs and Sub Types are identified in **Table 16** and have also been considered in this LVIA.

**Table 16: Landform, vegetation and waterform features of high scenic quality with potential to occur within the Study Area**

LCT/Sub Type	Landform	Vegetation	Waterform
Dryandra Uplands Landscape Character Sub Type	<ul style="list-style-type: none"> <li>• Isolated peaks or hills with distinctive form that become focal points</li> <li>• Rock outcrops or jumbles of large boulders</li> <li>• Distinctive U-shaped valleys.</li> </ul>	<ul style="list-style-type: none"> <li>• Strongly defined patterns of vegetation of some diversity of species, colour, height and density</li> <li>• Vegetation which shows distinct form, line, colour and texture contrasts with the surrounding landscape.</li> </ul>	<ul style="list-style-type: none"> <li>• Rivers and streams of a permanent nature</li> <li>• Wetlands, swamps and lakes.</li> </ul>
Geraldton Plain Landscape	<ul style="list-style-type: none"> <li>• High rounded hills or ridges with steep slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Windshaped, gnarled or dwarfed vegetation often</li> </ul>	<ul style="list-style-type: none"> <li>• All estuaries, inlets, lakes and swamps.</li> </ul>

LCT/Sub Type	Landform	Vegetation	Waterform
<b>Character Sub Type</b>	<ul style="list-style-type: none"> <li>• Mesas, ranges and escarpments with breakaways</li> <li>• Steep-sided and strongly dissected valleys</li> <li>• Cliffs and headlands</li> <li>• Islands and reefs</li> <li>• Irregular coastline edges often emphasised by distinctive rock outcropping, bays or inlets</li> <li>• Primary dunes which display areas of active dune movement.</li> </ul>	<ul style="list-style-type: none"> <li>• unusual in form, colour or texture</li> <li>• Areas of high plant diversity which display distinctive textural and colour patterns</li> <li>• Single trees, shrubs or vegetation patches which become focal points due to isolation or position in the landscape</li> <li>• Dramatic displays of seasonal colour e.g. Illyarrie.</li> </ul>	<ul style="list-style-type: none"> <li>• Unusual ocean shoreline motion due to islands, reefs and shoreline configuration.</li> <li>• River pools and other permanent water features</li> <li>• Steep sided valleys associated with major river drainages.</li> </ul>
<b>Swan Coastal Plain Landscape Character Type</b>	<ul style="list-style-type: none"> <li>• Rounded foothills with steep slopes</li> <li>• Dunal formations of distinctive height, configuration or combination, which provide obvious contrast to the landform patterns common in the character type e.g. Spearwood dunes</li> <li>• Gently inclined or level areas with distinctive drainage patterns (e.g. Pinjarra Plain)</li> <li>• Large stretches of coastal plain free of disturbance</li> <li>• Coastal dunes, which display areas of active weathering, steep and irregular slopes and ridges e.g. Lancelin</li> <li>• Off-shore and estuarine sandbars and reefs and islands.</li> </ul>	<ul style="list-style-type: none"> <li>• Scattered remnant vegetation forming an open parkland</li> <li>• Remnant or other areas of native vegetation exhibiting unusual diversity of colour, height or species e.g. Tuart forest</li> <li>• Distinctive displays of seasonal colour e.g. WA Christmas Tree</li> <li>• Wind-shaped, gnarled or dwarfed vegetation unusual in form, colour or texture e.g. coastal heath</li> <li>• Strongly defined patterns of woodland, dune and wetland vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>• All estuaries, wetlands and swamps</li> <li>• Watercourses of permanent or intermitted flow with continually changing flow character</li> <li>• Reservoirs with dominant natural characteristics.</li> </ul>

Many of these landscapes features have also been identified as having high scenic amenity value, contributing to the landscape character of the region and/or have a potentially high level of sensitivity to the proposed development as identified by the SDLPS, including:

- rural and coastal landscapes, including islands, white mobile dunes and sand sheets
- lakes and wetlands
- flat-topped peaks and ridges
- individual or massed plants that stand out from the kwongan or cleared pasture, such as groves of banksias or grass trees
- the kwongan vegetation in itself, carpeting the rolling landscape
- York gums and zamia palms.

Other landscapes within the LVIA Study Area considered to have moderate scenic amenity value include:

- Common coastal landscapes including expanses of beach with uniform width and colour, undistinctive plains and dune systems of uniform height and configuration.
- Other areas of more common vegetation with a lower degree of diversity of species, form, height, texture, colour, and density that contrast moderately with the surrounding landscape.
- Gently undulating plains and rounded hills similar to surrounding landforms, which are not visually distinctive or prominent
- Broad shallow valleys that are not distinctly defined.
- Seasonal waterways and wetlands or modified water features with some natural characteristics.

Landscapes considered to have low scenic amenity value include:

- Large expanses of indistinctly dissected landform with limited topographic features of visual interest and few landmarks by which to orient.
- Extensive areas of similar vegetation with limited variation in diversity and colour.
- Water features absent.

The Site is predominately located in the Dryandra Uplands Landscape Character Sub Type area and also includes small areas within the Swan Coastal Plain Landscape Character type that have been extensively modified for rural purposes. These boundaries generally accord with the IBRA subregions and landscape units depicted on Map 6 of the *Wheatbelt Regional Planning and Infrastructure Framework - Part A* (WAPC, 2015) and identified in the SDLPS (Shire of Dandaragan, 2020).

### 6.3. Site description

The Site is traversed by the Brand Highway and sealed local roads including Dandaragan Road and Rowes Road, as shown in **Figure 2**. Other unsealed local roads that traverse or bound the Site include Bidgerabbie Road, Dambadgie Road, Menardie Road, Stockyard Road, Walyer Walyer Road, Walyoo Road, and Yandin Road. The western parts of the Site are traversed by the existing 132 kV Kerr-McGee Cataby to Regans OHTL and the underground Dampier to Bunbury and Dongara to Pinjarra gas pipelines. It is noted that surface infrastructure associated with these gas pipelines does not have a strong influence on the visual character of the Site.

The Site includes gently undulating low hills and rises between approximately 100 – 270 m AHD associated with Stockyard Hill (270 m AHD) and Walyer Walyer Hill (234 m AHD) to the east of the Brand Highway and lower lying areas between 80 m and 100 m AHD to the west of the Brand Highway. Narrow alluvial valleys support several lakes (including Lake Yangy), and seasonally inundated areas associated with Yatheroo Brook, Caren Caren Brook and their numerous tributaries that drain the Site.

The Site has been heavily cleared to support agricultural land uses, such as grazing and cropping, with remnant vegetation limited to waterways, road corridors and scattered trees and pockets within rural properties.

The majority of the Site is located within the Dandaragan Plateau IBRA subregion, which supports woodland (mainly marri and wandoo) and open to sparse jarrah-marri woodland with low banksia woodlands (Shire of Dandaragan, 2020). Areas within the western part of

the Site within the Swan Coastal Plain IBRA subregion support mainly heath, scrub-heath, thicket and low banksia woodland vegetation types (Shire of Dandaragan, 2020).

There was one TEC found in the Site. The 'Banksia Woodland of the Swan Coastal Plain' TEC is mainly located on the deep Bassendean and Spearwood sands, and occasionally Quindalup sands (typically on the eastern edge), on shallow sands overlying more complex stratigraphic sequences on the foothills of the Ridge Hill Shelf, Whicher Scarp and Gingin/Dandaragan Scarp. This TEC occurs within an annual rainfall band of approximately 535 to 900 mm, often with summer droughts and high temperatures. This strong seasonal variation in climate results in the TEC being a fire-prone environment, and therefore supports species with a range of life history traits that allow them to persist in fire-prone environments (DoEE, 2016).

Representative photos showing the existing landscape character of the Site are provided in **Illustration 6**.



*Scattered vegetation within areas used for cropping*



*Yathroo Homestead on Dandaragan Road*



*Tributary of Yathroo Brook adjacent Dandaragan Road*



*Lake Yangy viewed from Bidgerabbie Road*



*Cataby mining operation with Yandin Wind Farm evident*



*Yathroo Brook near Bidgerabbie Road*

**Illustration 6** Illustrative images of the Yathroo Wind Farm Site

## 7. Landscape assessment

### 7.1. Landscape character baseline

Eight LCTs have been identified within the LVIA Study Area informed by a review of broad scale landscape units identified in *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994), the *Wheatbelt Regional Planning and Infrastructure Framework* (WAPC, 2015); the *Envision 2029 - Shire of Dandaragan Local Planning Strategy* (DPLH, 2020), the IBRA, pre-European vegetation mapping (DPIRD, 2024) and soil landscape mapping datasets (DPIRD, 2022); and the findings of fieldwork investigations. These LCTs and their associated LCAs (where appropriate) are identified in **Figure 6** and **Table 17**.

**Table 17: Landscape Character Types and Areas**

Landscape Character Type (LCT)	Landscape Character Areas (LCAs)	Potential Project impact
LCT A: Rural and Forested Uplands	LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands	Direct
LCT B: Rural Coastal Plain	LCA B1: Nilgen-Cowalla Rural Coastal Plain	Indirect
	LCA B2: Beermullah Rural Coastal Plain	Indirect
	LCA B3: Regans Ford Rural Coastal Plain	Indirect
	LCA B4: Mimegarra-Regans Ford Rural Coastal Plain	Indirect
	LCA B5: Cataby-Mimegarra Rural Coastal Plain	Indirect
LCT C: Forested Coastal Plain	LCA C1: Swan Forested Coastal Plain	Indirect
LCT D: Dune Systems	LCA D1: Swan Coastal Plain Dune Systems	Indirect
LCT E: Marine Areas and Islands	LCA E1: Indian Ocean Marine Areas and Islands	Indirect
LCT F: Coastal Settlements	LCA F1: Lancelin Coastal Settlement	No Impact
LCT G: Rural Settlements	LCA G1: Dandaragan Rural Settlement	Indirect
	LCA G2: Regans Ford Rural Settlement	Indirect
	LCA G3: Moora Rural Settlement	Indirect
LCT H: Rural Living Estates	LCA H1: Ocean Farms Rural Living Estate	Indirect
	LCA H2: Seaview Rural Living Estate	Indirect
LCT I: Major Watercourses	LCA I1: Moore River	Indirect
	LCA I2: Moore River North Branch	Indirect
	LCA I3: Yadgena Brook	Indirect
	LCA I4: Goonango Creek	Indirect
	LCA I5: Moore River East Branch	Indirect

Landscape Character Type (LCT)	Landscape Character Areas (LCAs)	Potential Project impact
	LCA I6: Crystal Brook	Indirect
	LCA I7: Wanery Brook	Indirect
	LCA I8: Red Gully Creek	Indirect
	LCA I9: Caren Caren Brook	Direct
	LCA I10: Minyulo Brook	Indirect
	LCA I11: Mullering Brook	Indirect

## 7.2. Landscape character assessment

Only two LCTs identified within the LVIA Study Area are anticipated to be directly impacted by the Project, *LCT A: Rural and Forested Uplands (LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands)* and *LCT I: Major Watercourses*. The likely sensitivity of LCT A and an assessment of the likely magnitude of change and significance of the effect of the Project on the landscape amenity values of this LCT are described in **Table 18**.

Impacts on *LCT I: Major Watercourses* have not been assessed in detail. While small parts of *LCA B9: Caren Caren Brook* and its tributaries (including Yathroo Brook) are located within the Site, the watercourse is not directly impacted by Project infrastructure. The likely sensitivity of LCT I and an assessment of the likely magnitude of change and significance of the effect of the Project on the landscape amenity values of this LCT are described in **Table 19**.

Other LCTs present in the wider LVIA Study Area are not directly impacted by the Project as they do not occur within the Project footprint and have therefore not been assessed in detail. A high-level assessment of the sensitivity of these LCTs and their associated LCAs and the likely magnitude of change and significance of the indirect effect of the Project on their landscape amenity values (i.e., landscape setting) is provided in **Section 7.3: Summary of landscape impact assessment** and **Table 20**.

### 7.2.1. Landscape Character Type A

*Table 18: Summary description of LCT A*

Type A: Rural and forested uplands	
Landscape baseline assessment	
<b>Location and boundaries</b>	<p>Associated with low rolling rises to and plateau remnants that support agricultural land uses and some patches of vegetation (including larger areas within the conservation estate that support unique remnant sandplain vegetation (Kwongan) and other vegetation communities), forming a rural farmland mosaic that on its western margins is influenced by the coastal character of the adjacent Swan Coastal Plain.</p> <p>There is only one broad LCA of this type in the LVIA Study Area. The Project is located within and will directly impact the Central Coast and Midlands Wheatbelt Rural and Forested Uplands (LCA A1).</p>

**Type A: Rural and forested uplands**

Typical character images:



*Yandin Wind Farm as viewed from Menardie Road*



*View across the agricultural landscape from Stockyard Road within the Site*



*Roadside vegetation on Dandaragan Road within the Site*



*View from Rows Road across the rural and forested landscape*



*View from Skyes Road looking across the undulating rural landscape*



*Existing large scale agricultural infrastructure*



*View across kwongan vegetation from Fynes Road*



*View toward the Moore River from Mogumber Road West*



*Yandin Wind Farm and OHTL viewed from the Yandin Lookout walking trail*



*Grazing occurs within LCT A and the Site*



*View toward Yandin Wind Farm and the Swan Coastal Plain*



*Small lake within the rural landscape*

**Key characteristics**

- Generally a sparsely settled landscape, with isolated homesteads and historic buildings and sites that contribute to the overall agricultural character of this LCT. Some areas support smaller agricultural land holdings, such as in the vicinity of the Moore River.
- Dominated by agricultural land uses (cereal crops and pasture) on broad-acre farming properties, with associated rural infrastructure including sheds, barns, rural dams and fencing.
- Undulating and rolling rises to dissected low hills, typically between 100 m and 370 m AHD.







<b>Type A: Rural and forested uplands</b>	
	<ul style="list-style-type: none"> <li>• These areas are more elevated than coastal areas to the west (LCT B, C and D), and often afford distant views across the surrounding landscape, including across these coastal landscapes.</li> <li>• Interspersed with level plains and gently inclined rises associated with ephemeral watercourses, lakes and wetlands.</li> <li>• Stands and patches of vegetation (which in some instances are large and extensive) – particularly associated with reserves, roadside shelterbelts, fences, watercourses, breakaways and local variations in topography – create visual interest in the landscape and contrast strongly with agricultural areas. Where vegetation along roadsides is dense, views across the rural landscape are restricted and the rural landscape character is influenced by the presence of vegetation.</li> <li>• Vegetation communities vary depending on the underlying soils and geology and comprise a mix of woodlands (mainly marri and wandoo), open to sparse jarrah-marri woodland with low banksia woodlands and along the coastal margin, heath, scrub-heath, thicket and low banksia woodland (kwongan).</li> <li>• This LCT is traversed several major watercourses (LCT I) including the Moore River and its numerous tributaries. With the exception of the Moore River, these watercourses are seasonal and drain into swamps and lakes, which are a common feature of this LCT and within the adjacent Swan Coastal Plain.</li> <li>• Presence of breakaways such as Yandin Breakaway and diverse vegetation communities provides visual interest.</li> </ul>
<b>Precedent modifications and infrastructure elements</b>	<ul style="list-style-type: none"> <li>• Generally a highly modified landscape for agricultural practices, including clearing of land for cropping and grazing with the exception of areas within the conservation estate.</li> <li>• Traversed by railway corridors, key State controlled roads including the Brand Highway and Bindoon-Moora Road along with several other regional and local distributor roads.</li> <li>• Other local access roads and tracks (typically unsealed) provide access throughout this LCT including to private properties.</li> <li>• Where roads and access tracks traverse watercourses located throughout this LCT, bridge and culvert infrastructure are often present.</li> <li>• Presence of existing wind farm infrastructure associated with Yandin wind Farm, as well as overhead high voltage transmission lines and underground gas pipelines and associated ancillary infrastructure.</li> </ul>
<b>Landscape character sensitivity assessment</b>	<ul style="list-style-type: none"> <li>• Considered too broadly be representative of typical rural landscape qualities within the Wheatbelt (i.e., a common Landscape Type) with some areas of higher landscape quality, particularly within reserves which provide some opportunities for landscape appreciation (e.g. Yandin Lookout).</li> <li>• Generally, a low degree of perceived naturalness and intactness, except for areas containing large tracts of remnant or regrowth vegetation, such as areas within reserves.</li> <li>• Somewhat remote, except for areas in proximity to towns, highways, and major roads.</li> <li>• This LCT is predominantly visually open, and long distance views are possible in areas where extensive vegetation clearance enables</li> </ul>

Type A: Rural and forested uplands	
	<p>panoramic views to distant horizons, particularly when viewed from locally elevated areas.</p> <ul style="list-style-type: none"> <li>• No parts of this LCT are protected on account of their landscape or scenic amenity values, however, the landscape is acknowledged as having landscape and amenity value in local planning policies.</li> <li>• This LCT contains some localised areas supporting landscape elements of high scenic quality (CALM, 1994) including: <ul style="list-style-type: none"> <li>○ Isolated peaks or hill with distinctive form, which become focal points.</li> <li>○ Strongly defined patterns of vegetation of some diversity of species, colour, height and density</li> <li>○ Vegetation which shows distinct form, line, colour and texture contrasts with the surrounding landscape.</li> <li>○ Areas of high plant diversity, which display distinctive textural and colour patterns</li> <li>○ Single trees, shrubs or vegetation patches which become focal points due to isolation or position in the landscape</li> <li>○ Ranges and escarpments with breakaways</li> <li>○ Distinctive stands of vegetation especially the inland eucalypt woodlands (such as salmon gums).</li> <li>○ Dramatic displays of seasonal colour e.g. spring wildflowers.</li> <li>○ Wetlands, swamps and lakes (such as Lake Yangy within the Site).</li> </ul> </li> <li>• This LCT also contains landscape elements of moderate scenic quality (CALM, 1994) including: <ul style="list-style-type: none"> <li>○ Undulating country and which is not visually dominant but is surrounded by similar landforms.</li> <li>○ Broad shallow valleys.</li> <li>○ Vegetative patterns evident but with little diversity that moderately contrasts with the surrounding landscape.</li> <li>○ Seasonal wetlands, intermittent streams and creeklines.</li> </ul> </li> <li>• Traversed by several tourist routes including the Brand Highway (a State significant tourist route) and the Dandaragan Way.</li> <li>• Generally, this LCT (including areas within the Site) is considered to contain landscapes of moderate scenic value. Due to the harmonious but typical rural character, regional and local value of the landscape and absence of any formal landscape planning designations, it is considered that this landscape has some capacity to accommodate the changes proposed. Therefore, the overall inherent sensitivity of large parts of this landscape is considered to be <b>medium</b>.</li> <li>• However, the sensitivity of areas supporting landscape features acknowledged as having high scenic value (e.g., areas of diverse and visually interesting remnant vegetation) is <b>high</b> (noting that none of these areas are directly impacted by the Project).</li> <li>• In areas impacted by existing wind farm infrastructure and other land uses such as mineral sand mining the sensitivity is reduced to <b>low</b>.</li> </ul>
<b>Landscape character sensitivity</b>	<ul style="list-style-type: none"> <li>• <b>Low</b> – areas impacted by existing wind farm infrastructure and other land uses such as mineral sand mining activities.</li> <li>• <b>Medium</b> –rural areas considered to be typical of this LCT and of moderate scenic value including areas in the Site.</li> </ul>

Type A: Rural and forested uplands	
	<ul style="list-style-type: none"> <li>• <b>High</b> - areas supporting natural landscape features of high scenic amenity value typically occurring within the conservation estate.</li> </ul>
Landscape evaluation	
Magnitude of change assessment	<ul style="list-style-type: none"> <li>• The Site is located within LCA A1 and is directly impacted by proposed wind turbine locations and ancillary infrastructure including access roads.</li> <li>• Areas adjacent the Site are already directly impacted by wind turbines and associated ancillary infrastructure including OHTL towers and substations associated with the Yandin Wind Farm (with a blade tip height of approximately 180 m)</li> <li>• Within the Site, the magnitude of change is anticipated to be considerable due to the following factors: <ul style="list-style-type: none"> <li>○ Highly localised vegetation clearing to accommodate ancillary infrastructure noting that wind turbines have been located in cleared areas.</li> <li>○ The introduction of additional large-scale wind infrastructure including wind turbines (that are taller structures than existing wind turbines in the area), substations and a BESS, within what is a broad scale rural landscape that already supports wind and other renewable energy developments and associated enabling infrastructure.</li> </ul> </li> <li>• While it is considered that this represents a <b>medium</b> magnitude of change within the Site, it is noted that the surrounding rural landscape and the region already supports numerous wind developments.</li> <li>• As the Project is not located in close proximity to any areas identified as having high scenic amenity value (such as those supporting contiguous areas of remnant vegetation and/or within reserves e.g. in the vicinity of Yandin Lookout) no significant indirect effects on the landscape character of these areas due to the Project is anticipated. At most, it is considered that the influence of the Project on the character of surrounding rural and forested areas would represent a <b>low</b> magnitude of change (i.e. it would result in an intensification of wind infrastructure in this rural area).</li> <li>• It is also noted that should the project be decommissioned, the removal of the wind turbines and Site remediation would allow for the landscape to be returned largely to its current visual condition over time i.e., the impacts on this LCT are considered to be largely reversible.</li> </ul>
Magnitude of change	<ul style="list-style-type: none"> <li>• <b>Medium (direct)</b> - associated with direct impacts within the Site.</li> <li>• <b>Low (indirect)</b> - other parts of this LCT.</li> </ul>
Significance of effect	<ul style="list-style-type: none"> <li>• At most, <i>moderate</i> and <i>not significant</i>.</li> </ul>

## 7.2.2. Landscape Character Type I

Table 19: Summary description of LCT I

Type I: Major Watercourses		
Landscape baseline assessment		
<b>Location and boundaries</b>	<p>This LCT is associated with major rivers, minor rivers and significant streams (as identified by the Hydrography, Linear (Hierarchy) dataset (DWER, 2023) within the LVIA Study Area that appear as distinct character features within the broader landscape.</p> <p>There are eleven LCAs within this LCT occurring within the LVIA Study Area, only one of which (LCA I9: Caren Caren Brook) will be directly impacted by the Project.</p> <p>As other minor watercourses are typically seasonal (e.g., dry gullies and pondage areas that experience intermittent flows during rain events), these watercourses have not been defined as this LCT. Rather, they are experienced as a component of the broader landscape and LCT within which they occur.</p>	
<b>Typical character images:</b>		
		
<i>Moore River (LCA I1) at the Brand Highway bridge crossing</i>	<i>Moore River (LCA I1) at the Moore River rest area near Regans Ford</i>	<i>Moore River North Branch (LCA I2) at the Barberton West Road crossing</i>
		
<i>View toward Caren Caren Brook (LCA I9) crossing on the Brand Highway</i>	<i>View toward Caren Caren Brook (LCA I9) from Dandaragan Road</i>	<i>View toward Caren Caren Brook (LCA I9) from Bidgerabbie Road</i>
<b>Key characteristics</b>	<ul style="list-style-type: none"> <li>• Waterways are a common element that contribute to the character of the LVIA Study Area. Their scale, visual quality, and character varies and is dependent upon their location and relationship to the landscape through which they traverse.</li> <li>• The Moore River, Moore River North Branch and Coonderoo River are the key watercourses within the LVIA Study Area.</li> <li>• The intactness and extent of riparian vegetation corresponds strongly with the adjacent land use. Watercourses traversing rural landscapes typically support narrow riparian corridors that form distinct vegetated corridors within the predominately cleared rural landscape.</li> <li>• Opportunities for close views to watercourses are generally limited except for transient views experienced by receptors travelling along roads where bridge crossings provide visual access to these watercourses</li> </ul>	

Type I: Major Watercourses	
	(such as the crossing of Caren Caren Brook when travelling along Dandaragan Road and the crossing of the Moore River on the Brand Highway near Regans Ford).
<b>Precedent modifications and infrastructure elements</b>	<ul style="list-style-type: none"> <li>Modified for access in relation to agricultural and rural practices, such as irrigation and farm supply/use.</li> <li>Construction of roads, railways and bridges resulting in localised impacts on watercourses.</li> </ul>
<b>Landscape character sensitivity assessment</b>	<ul style="list-style-type: none"> <li>Variable degree of perceived naturalness, with some evidence of human uses and modifications to the waterways.</li> <li>Predominantly visually closed due to the riparian vegetation along watercourses.</li> <li>This LCT contains some localised areas supporting landscape elements of high scenic quality (CALM, 1994) associated with rivers and streams of a permanent nature or watercourses of permanent or intermitted flow with continually changing flow character (considered to include the lower reaches of the Moore River). The Moore River is identified as a significant river in the <i>Wheatbelt Regional Planning and Infrastructure Framework</i>.</li> <li>This LCT also contains landscape elements of moderate scenic quality (CALM, 1994) associated with seasonal and intermittent streams, watercourses and creeklines (such as Caren Caren Brook within the Site).</li> <li>These watercourses are traversed by several tourist routes including the Brand Highway and Indian Ocean Drive (State significant tourist routes) and the Dandaragan Way.</li> <li>The overall sensitivity of these watercourses is considered to be, at greatest, <b>medium</b>. This recognises the variable intactness and visual quality of these watercourses and their anticipated value for the local community.</li> </ul>
<b>Landscape character sensitivity</b>	<ul style="list-style-type: none"> <li><b>Medium</b> (Moore River and permanent/key watercourses)</li> <li><b>Low</b> (other watercourses including Caren Caren Brook (LCA I9) within the Site).</li> </ul>
Landscape evaluation	
<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>No direct impacts on the Moore River or other major watercourses considered to have high scenic quality.</li> <li>The Project would directly impact a localised part of Caren Caren Book within the Site (LCA I9), which flows in an east-west direction toward Namming Lake and is considered to have moderate scenic quality.</li> <li>These impacts are anticipated to be localised and associated with the construction of access tracks and the reticulation network, which would result in the localised removal in two locations of riparian vegetation within the construction footprint.</li> <li>This will result in a considerable change in landscape characteristics affecting highly localised parts of LCA I11, which is not anticipated to fundamentally change the overall character of the landscape.</li> <li>Overall, this represents a <b>low</b> magnitude of change.</li> <li>It is also noted that targeted rehabilitation will be undertaken within the areas required for construction, reducing the permanent extent of vegetation clearing.</li> </ul>

Type I: Major Watercourses	
Magnitude of change	<ul style="list-style-type: none"> <li>• <b>Low (direct)</b> - associated with highly localised and direct impacts within the Site on Caren Caren Brook (LCA I9).</li> <li>• At most, a <b>negligible (indirect)</b> impact on other watercourses in acknowledgement that the Project is theoretically visible from these watercourses based on the VAM. In reality, the presence of riparian vegetation and low-lying nature of these watercourses would largely restrict the visibility of the Project.</li> </ul>
Significance of effect	<ul style="list-style-type: none"> <li>• At most, <i>minor</i> and <i>not significant</i>.</li> </ul>

### 7.3. Summary of landscape impact assessment

The landscape character assessment has defined nine LCTs within the LVIA Study Area, informed by a review of broad scale landscape units identified in *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) and the *Wheatbelt Regional Planning and Infrastructure Framework* (WAPC, 2015); the IBRA, pre-European vegetation mapping (DPIRD, 2024) and soil landscape mapping datasets (DPIRD, 2022); landscape character units defined in the *Indian Ocean Drive Planning Guideline* (WAPC, 2014), and the findings of fieldwork investigations.

The presence of scenic landscape elements as identified *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) have been considered within the definition of LCTs and the assessment of sensitivity ratings in the landscape character assessment where applicable.

Based on the landscape character assessment described in **Section 7.2: Landscape character assessment** and the method for assessing landscape significance set out in **Table 5**, a summary of the baseline analysis and overall likely landscape impact anticipated during the operation of the Project is provided for each LCT in **Table 20**.

*Table 20: Summary of landscape impact assessment*

LCT and LCA	Sensitivity	Magnitude of change	Significance of effect
<b>LCT A: Rural and forested uplands</b>			
LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands	Medium (general rural areas)	Direct – <b>Medium</b>	<b>Moderate</b> and <b>not significant</b>
	High (reserves/areas of high scenic value) <sup>1</sup>	Indirect – <b>Low</b>	<b>Moderate</b> and <b>not significant</b>
<b>LCT B: Rural Coastal Plain</b>			
No direct impacts on LCT B – indirect impacts only.			

<sup>1</sup> Associated with state and council owned land reserves (e.g. Nilgen Nature Reserve and the unnamed nature reserve that supports Yandin Lookout) and contiguous areas of remnant vegetation within private ownership.

Yathroo Wind Farm  
Landscape and Visual Impact Assessment

LCT and LCA	Sensitivity	Magnitude of change	Significance of effect
<b>LCT C: Forested Coastal Plain</b>			
No direct impacts on LCT C - indirect impacts only.			
<b>LCT D: Dune Systems</b>			
No direct impacts on LCT D - indirect impacts only.			
<b>LCT E: Marine Areas and Islands</b>			
No direct impacts on LCT E - indirect impacts within LVIA Study Area unlikely based on ZTV mapping.			
<b>LCT F: Coastal Settlements</b>			
No direct or indirect impacts on LCT F.			
<b>LCT G: Rural Settlements</b>			
No direct impacts on LCT G - indirect impacts only.			
<b>LCT H: Rural Living Estates</b>			
No direct impacts on LCT H - indirect impacts only.			
<b>LCT I: Major Watercourses</b>			
LCA I1: Moore River	Medium	Indirect - <b><i>Negligible</i></b>	<b><i>Minor and not significant</i></b>
LCA I2: Moore River North Branch	Medium	Indirect - <b><i>Negligible</i></b>	<b><i>Minor and not significant</i></b>
LCA I3: Yadgena Brook	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>
LCA I4: Goonango Creek	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>
LCA I5: Moore River East Branch	Medium	Indirect - <b><i>Negligible</i></b>	<b><i>Minor and not significant</i></b>
LCA I6: Crystal Brook	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>
LCA I7: Wanery Brook	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>
LCA I8: Red Gully Creek	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>
LCA I9: Caren Caren Brook	Low	Direct - <b><i>Low</i></b>	<b><i>Minor and not significant</i></b>
LCA I10: Minyulo Brook	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>
LCA I11: Mullering Brook	Low	Indirect - <b><i>Negligible</i></b>	<b><i>Minor to negligible and not significant</i></b>

## 8. Visual assessment

### 8.1. Visibility Analysis Mapping (VAM)

VAM has been produced to support the assessment of potential visual impacts associated with the Project, as outlined in **Section 3.4: Preparation of visibility analysis mapping (VAM / ZTV)**.

The VAM represents the locations within the LVIA Study Area within which the Project may theoretically be seen (i.e. wind turbines may potentially be visible), based on terrain data alone. This is determined through a GIS process that generates 'digital cross sections' to determine areas where landform would block views of all (or, where stated in some cases, part) of the wind turbines. A preliminary VAM was used to inform the (preliminary) selection of representative viewpoints and to inform the fieldwork.

To illustrate the theoretical visibility of the Project, four VAM maps have been produced based on the proposed wind turbine layout and maximum wind turbine height as follows:

- **Figure 7: Blade Tip ZTV Assessment – Zone of Theoretical Visibility**, which shows the area from which it is theoretically possible to see any blade tip (part or whole wind turbine) on the Site (up to 65 wind turbines) and, conversely, the area from which it will not be possible to see any wind turbine blade tips (part or whole wind turbine).
- **Figure 8: Blade Tip ZTV Assessment – Number of Visible Wind turbines**, which indicates how many tips (whole or parts of any wind turbines) would potentially be visible – categorised by a gradient scale indicating from 1 to 65 wind turbines visible.
- **Figure 9: Hub Height ZTV Assessment – Zone of Theoretical Visibility**, which shows the area from which it is theoretically possible to see any wind turbine hub (hub or whole wind turbine) on the Site (up to 65 wind turbines) and, conversely, the area from which it will not be possible to see any wind turbine hub heights (part or whole wind turbine).
- **Figure 10: Hub Height ZTV Assessment – Number of Visible Wind turbines**, which indicates how many wind turbine hubs (junction of wind turbine blades and wind turbine) would potentially be visible – categorised by a gradient scale from 1 to 65 wind turbine hubs visible.

The potential visibility of ancillary infrastructure elements (e.g., BESS, operations and maintenance facilities, access roads and the substations) was not modelled, as it is considered that compared to the scale of the wind turbines, the visibility of these Project components would be more localised.

**Figure 7 to Figure 10 in Appendix 1** show that the Project is theoretically visible within large parts of the LVIA Study Area and that the visibility of the Project is strongly influenced by the LVIA Study Area geology and physiography as follows (from west to east):

- The Project is not anticipated to be visible from marine and coastal areas in the western most part of the LVIA Study Area due to the screening influence of more elevated coastal dune systems located to the east between these areas and the Site.

- The Project is theoretical visibility from elevated parts of the coastal dune systems; however, the undulating topography of these dune systems restricts the visibility of the Project in many areas.
- The Project is theoretical visibility from extensive parts of the lower-lying flat to gently inclined rural and forested coastal plains located between the Gingin Scarp and Brand Highway in the east and the coastal dune systems in the west.
- To the east of the Brand Highway, the more undulating and elevated terrain of the Wheatbelt has a stronger influence on the visibility of the Project. Close views to a large number of wind turbines will be possible from areas in close proximity to the Site, and from more distant elevated vantage points where clear views toward the Site area possible. Areas with limited theoretical visibility towards the Project are generally associated with low-lying areas situated at some distance from the Project where potential views are obscured due to intervening undulating topography. This is particularly evident in the northern, southeastern and eastern parts of the LVIA Study Area where watercourses traverse the terrain, and the terrain is more dissected and complex, with deeper valleys and steeper hills.

However, many of these potential views (apart from elevated views with clear visibility of the Site) have the potential to be restricted by local screening elements such as vegetation (including associated with roadside shelterbelts). While vegetation is often low in height, due to the proximity of vegetation to road corridors the availability of views may still be restricted. As such, it is considered that in many instances the actual visibility of the Project would be far less than indicated. It is also acknowledged that within towns, the presence of urban development and infrastructure may also further limit visibility of the Project.

It is also acknowledged that as viewing distance increases, the dominance of wind turbines within the landscape is considered to be reduced, as they comprise a relatively smaller part of the overall landscape view. Contrarily, in locations where close views towards wind turbines are possible, the visual impact may be more dominant due to proximity of the viewer to the Project.

## **8.2. Visual audiences and viewpoint selection**

The visual baseline has been assessed and is described in terms of potential for views to be obtained by selected visual audiences within the LVIA Study Area.

It is considered that the viewers (visual receptors) who may experience views of the Project are likely to include:

- Residents living in and visitors to the rural town of Dandaragan, and to a lesser extent, Moora, Regans Ford, Cataby and Koojan.
- Residents living on rural lifestyle properties within Ocean Farms.
- Residents living on rural properties within and surrounding the Site or in areas situated at a distance from the site with elevated and open views toward the Project.
- Farmers and other people working in the rural landscape around the Site.
- Motorists and tourists travelling along key roads within the LVIA Study Area, particularly those travelling nominated scenic routes including the Brand Highway and Dandaragan Road (the Dandaragan Way), which traverses the Site, and Indian Ocean Drive.

- Motorists travelling along other key roads within the LVIA Study Area such as Bindoon-Moora Road and other local roads in the LVIA Study Area.
- Recreational users accessing scenic lookouts such as Yandin Lookout and Nilgen Lookout and undertaking walking trails such as the Nilgen Wildflower Walk.

Based on an analysis of the VAM, the types of visual audiences and visual receptors likely to be affected by the Project, and the field investigation, sixteen viewpoints have been selected for detailed assessment (**Figure 11**).

These viewpoints are considered representative of the receptors noted above with the potential to be impacted by the Project. They are also considered to represent in some instances the ‘worst case’ scenario for a range of likely viewers around the LVIA Study Area, as they include locations where the most receptors are likely to be present and are taken from areas with relatively open views. For example, representative views from Dandaragan have been taken from key community facilities as well as from elevated areas and areas located on the edge of the settlement where views are more open and accessible to illustrate the range of viewing experiences.

The views obtained from representative viewpoints are shown on **Figure 13** to **Figure 46** (**Appendix 1**) and summarised in **Table 21**.

**Table 21: Representative viewpoints selection**

Code	Description	Key visual audience(s)
VP1	Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra	Receptors in passing vehicles on the Brand Highway located within the Site.
VP2	Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo	Receptors in passing vehicles on other more distant sections of the Brand Highway.
VP3A	Viewpoint 3A: Southeasterly view from Yandin Lookout carpark, Dandaragan	Visitors accessing Yandin Lookout carpark area and the Yandin Wind Farm viewing area.
VP3B	Viewpoint 3B: Southwesterly view from Yandin Lookout, Dandaragan	Visitors accessing Yandin Lookout, which is accessed via a short walking trail.
VP4	Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo	Receptors in passing vehicles on Dandaragan Road (the Dandaragan Way).
VP5A	Viewpoint 5A: Southerly view from Stockyard Road near intersection with Dandaragan Road, Yathroo	Receptors in passing vehicles on Stockyard Road and similar views experienced from nearby elevated parts of Dandaragan Road.
VP5B	Viewpoint 5B: Northerly view from Stockyard Road near intersection with Dandaragan Road, Yathroo	
VP6	Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo	Receptors in passing vehicles on Dandaragan Road (the Dandaragan Way) and similar views experienced from nearby uninvolved rural properties in the area.

Yathroo Wind Farm  
Landscape and Visual Impact Assessment

Code	Description	Key visual audience(s)
VP7	Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo	Receptors in passing vehicles on Dandaragan Road (the Dandaragan Way) and similar views experienced from nearby uninvolved rural properties in the area.
VP8	Viewpoint 8: Westerly view from Rowes Road near intersection of Scenic Drive, Yathroo	Receptors in passing vehicles on Rowes Road and similar views experienced from nearby uninvolved rural properties in the area.
VP9A	Viewpoint 9A: Southerly view from Dandaragan Community Recreation Centre, Dandaragan	Visitors to the Dandaragan Community Recreation Centre and similar views experienced from other nearby areas in the town.
VP9B	Viewpoint 9B: Southerly view from end of Camm Road, Dandaragan	Receptors on the edge of the town of Dandaragan on Camm Road. Similar views would likely be experienced from the nearby golf course and school.
VP9C	Viewpoint 9C: Southerly view from Dandaragan Road, Dandaragan	Receptors in passing vehicles on Dandaragan Road and similar views experienced from nearby rural living properties in the northern part of the town.
VP10	Viewpoint 10: Southwesterly view from Rowes Road, Dandaragan	Receptors in passing vehicles on Rowes Road and nearby rural receptors.
VP11	Viewpoint 11: Northwesterly view from Boundary Road, Yathroo	Receptors in passing vehicles on Boundary Road and nearby rural receptors.
VP12	Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully	Receptors in passing vehicles on Mogumber Road and nearby rural receptors.
VP13	Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River - existing view National Park	Receptors in passing vehicles on Orange Springs Road including those visiting Moore River National Park and receptors located in nearby rural areas.
VP14A	Viewpoint 14A: Easterly view from Indian Ocean Drive roadside rest area, Nilgen	Receptors in passing vehicles on open and elevated parts of Indian Ocean Drive including those stopping at designated rest areas and receptors located in nearby rural areas.
VP14B	Viewpoint 14B: Easterly view from Nilgen Wildflower Walk near Nilgen Lookout, Nilgen	Recreational users undertaking the Nilgen Wildflower Walk and accessing the nearby Nilgen Lookout within Nilgen Nature Reserve.
VP15	Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen	Receptors living in rural residential properties within Ocean Farms estate.
VP16	Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton	Receptions in passing vehicles on Barberton West Road and similar views experienced while travelling along open sections of Bindoon-Moora Road.

### 8.2.1. Residential viewers in towns, settlements and 'rural living' areas

As described in **Section 6.1.1: Settlement and infrastructure** there are several towns within the LVIA Study Area. Key impacts on residential receptors located within these towns are anticipated to be associated with potential views toward the Project from Dandaragan. Views from the town toward the south are already impacted by the existing Yandin Wind Farm, however, the Project will introduce additional wind turbines into the background of these views. Impacts on views from Dandaragan are assessed in **Section 8.3.9: Viewpoint 9: Southerly views from Dandaragan town, Dandaragan.**

No representative views have been included from other towns in the LVIA Study Area due to the following:

- **Lancelin:** The VAM illustrates the Project is not anticipated to be visible from Lancelin due to the effect of intervening terrain.
- **Moora:** Despite very low levels of theoretical visibility illustrated by the VAM, no clear views to the Project from the town of Moora were identified during the field survey due to the presence of vegetation and built form. Distant and transient views to Yandin Wind Farm are possible from Bindoon-Moora Road to the immediate south of the town. Similar views would likely be possible toward the Project where vegetation does not screen the visibility of turbines as discussed in **Section 8.3.16: Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton.**
- **Regans Ford:** The Project is theoretically visible from Regans Ford. However, the presence of vegetation surrounding the town restricts the availability of open views toward the Project from the Windmill Roadhouse, Regans Ford Holiday Park and the rest area on the Moore River. Transient views toward the Project would be experienced by receptors travelling along the Brand Highway where it passes through this small rural settlement where wind turbines are evident in the background of the view above foreground vegetation.
- **Cataby:** Views toward the Project are likely to be experienced from Cataby. However, residential development within Cataby is limited and views from the settlement, which is principally a rest stop on the Brand Highway, are already impacted by Yandin Wind Farm. The Project would be evident in the background of views from the settlement, and therefore impacts on Cataby would be similar to impacts on the Brand Highway as described in **Section 8.3.2: Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo** (albeit more distant).
- **Koojan:** Very distant views toward the Project are theoretically possible from the rural townsite of Koojan, which supports a limited number of residential dwellings surrounded by vegetation. Any impacts experienced by receptors in Koojan are considered to be similar to potential impacts on Bindoon-Moora Road as discussed in **Section 8.3.16: Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton.**

As noted in **Section 6.1.1: Settlement and infrastructure** the LVIA Study Area there are several 'rural living' and 'rural lifestyle' areas within the LVIA Study Area, which have the potential to be impacted by the Project including:

- **Ocean Farms:** Very distant views toward the Project will be possible from elevated areas within the Ocean Farms estate as discussed in **Section 8.3.15: Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen.**

- **Seaview Park:** Based on the VAM, the Project is not anticipated to be visible from residential dwellings within Seaview Parke state.
- **Rural residential areas on the outskirts of Dandaragan:** Refer Viewpoint 9C as discussed in Section 8.3.9: **Viewpoint 9: Southerly views from Dandaragan town, Dandaragan.**
- **Rural residential areas on the outskirts of Moora:** Similar to the town of Moora, there is the potential for very distant views to be experienced toward a low number of wind turbines from rural residential properties surrounding the town. However, this area was visited during the field survey and it is considered that the presence of vegetation within the rural landscape will somewhat restrict the availability of open views toward the Project.

### **8.2.2. Residential views in rural areas**

The LVIA Study Area also supports dwellings on rural properties. Some of these rural properties are located within the Site and are 'participating properties' as the landowner has agreed to the wind farm development. While the wind turbines are very close and would have a high visual impact on these dwellings, residents would likely not object to the wind turbines on landscape or visual grounds. Therefore, the effect on participating properties is not considered in this LVIA.

However, there are several other properties and rural dwellings with the potential to experience views toward wind turbines, including close range views. Views from publicly accessible locations considered representative of views experienced by these rural receptors have been considered, particularly views from properties located near the Site boundary and proposed Project infrastructure, as discussed in:

- **Section 8.3.2: Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo**
- **Section 8.3.6: Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo**
- **Section 8.3.7: Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rows Road, Yathroo**
- **Section 8.3.8: Viewpoint 8: Westerly view from Rows Road near intersection of Scenic Drive, Yathroo.**

### **8.2.3. Workers**

The majority of the LVIA Study Area is a working rural landscape, supporting agricultural land uses predominantly which typically require a low intensity of workers as well as mining operations with larger numbers of workers on site. The existing Yandin Wind Farm would also support maintenance and operational staff. These workers would experience views of the wind farm as they go about their daily activities. All workers would be focussed on their activities, although workers on agricultural properties may enjoy the rural landscape setting. The extent of view experienced by workers would change in accordance with the topography and locally depending on the presence of vegetation.

No specific viewpoints have been selected to assess impacts on workers because views from the town of Dandaragan (which supports workers accommodation) and rural properties (described above) and local roads (described below) are considered to be representative of views of workers within the general area.

#### 8.2.4. Recreational users and visitors

The potential impact of the Project upon views experienced by recreational viewers and visitors accessing scenic lookouts and walking trails within the LVIA Study Area has been considered.

##### 8.2.4.1. *Yandin Lookout*

Yandin Lookout is a signposted tourism destination located off the Brand Highway. The principal view from the Yandin Lookout is already impacted by the presence of close wind turbines and overhead transmission line infrastructure associated with the operational Yandin Wind Farm. Close views toward Yandin Wind Farm and OHTL towers and cables are also experienced from the walking trail, carparking area and access road. Impacts on Yandin Lookout are discussed in **Section 8.3.3: Viewpoint 3: Southeasterly and southwesterly views from Yandin Lookout and carpark area, Dandaragan.**

##### 8.2.4.2. *Nilgen Lookout and Nilgen Wildflower Walk*

Nilgen Lookout provides 'sweeping coastal views from Ledge Point in the south to Wedge Island Nature Reserve in the north'. While the Project is not anticipated to impact the primary view from the lookout, it will be evident from the carpark area and walking trails, including the Nilgen Wildflower Trail, which provides panoramic views across the surrounding landscape including towards the east.

Impacts on this popular tourist destination are discussed in **Section 8.3.14: Viewpoint 14: Easterly views from Indian Ocean Drive and Nilgen Nature Reserve, Nilgen.**

##### 8.2.4.3. *Guraga Lake*

An unsigned access road to Guraga Lake was identified during field survey (Salt Lake Road) located off Brand Highway. However, the road was heavily overgrown and access to the lake was not attempted, noting the biodiversity control measures in place. Based on the VAM and turbine locations, the Project is anticipated to be visible from Lake Guraga. However, based on the condition of the road it is also anticipated that a very limited number of receptors are likely to access this location.

##### 8.2.4.4. *Lancelin Sand Dunes*

The VAM illustrates that the Project would not be visible from the Lancelin Sand Dunes.

##### 8.2.4.5. *Moore River Rest Area*

While a very low number of turbines associated with the Project are theoretically visible from the Moore River Rest Area, it is located adjacent the river in a vegetated area. Therefore, the Project is not anticipated to impact upon the setting of this picnic area/rest stop due to density of surrounding vegetation.

#### 8.2.5. Road users

As described in **Section 6.1.1: Settlement and infrastructure**, the LVIA Study Area is traversed by several key roads and other local roads that will provide a range of transient viewing opportunities towards the Project. However, the extent to which the Project would affect views from these roads is variable intrinsically linked to the:

- distance of these routes from the Project
- influence of the local terrain

- presence of roadside vegetation or other obstructions (e.g. mining spoil stockpiles).

An assessment of the potential impact of the Project on road users on following key State controlled road routes which are both State significance scenic routes has been provided:

- Brand Highway:
  - Section 8.3.1: Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra
  - Section 8.3.2: Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo.
- Indian Ocean Drive:
  - Section 8.3.14: Viewpoint 14: Easterly views from Indian Ocean Drive and Nilgen Nature Reserve, Nilgen

While no specific viewpoints have been selected to discuss the potential for close views to be experienced from the Brand Highway toward the proposed location and alternative location for the Western Power terminal, BESS, substation and associated permanent operations and maintenance facilities, impacts associated with these facilities have been considered in the assessment of Viewpoint 1 and Viewpoint 2. Transient views from the highway toward these infrastructure components are likely to be experienced in areas where roadside vegetation stands are less dense, lower, and narrower in width. Images illustrating existing views toward the proposed and alternative locations for these facilities have been provided in **Illustration 7** and **Illustration 8** respectively.



*Glimpsed view toward lake from the Brand Highway (~ 480 m from BESS)*



*View from Brand Highway rest area looking north (~ 1 km from BESS)*



*View south along Brand Highway (~ 480 m from BESS)*



*View from Brand Highway rest area looking north (~ 1.1 km from BESS)*



*View south along Brand Highway (~ 1.2 km from substation)*



*View north from Brand Highway across lake (~ 1.6 km from BESS).*



*View west from Brand Highway toward proposed western power terminal location (~ 1.1 km from alternative Western Power terminal location)*



*View from Brand Highway rest area looking north (~ 1.1 km from alternative Western Power terminal location)*



*View west from Brand Highway showing availability of open views across the rural landscape (~ 1.1 km from alternative Western Power terminal location)*

*Illustration 7 Images showing the existing visual character of views toward the alternative Western Power terminal, BESS, substation and permanent operations and maintenance facility location from the Brand Highway*


Representative viewpoints taken from the following local roads have also been assessed:

- Dandaragan Road (the Dandaragan Way scenic route):
  - Section 8.3.4: Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo
  - Section 8.3.6: Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo
  - Section 8.3.7: Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowses Road, Yathroo.
- Stockyard Road:
  - Section 8.3.5: Viewpoint 5: Southerly and northerly views from Stockyard Road near intersection with Dandaragan Road, Yathroo.
- Rowses Road:
  - Section 8.3.8: Viewpoint 8: Westerly view from Rowses Road near intersection of Scenic Drive, Yathroo
  - Section 8.3.10: Viewpoint 10: Southwesterly view from Rowses Road, Dandaragan.
- Boundary Road:
  - Section 8.3.11:
  - Viewpoint 11: Northwesterly view from Boundary Road, Yathroo.
- Mogumber Road West:
  - Section 8.3.12: Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully
- Orange Springs Road:
  - Section 8.3.13: Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River National Park.
- Barberton Road West (near intersection with Bindoon-Moora Road):
  - Section 8.3.16: Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton

### 8.3. Viewpoint assessment

#### 8.3.1. Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra

Table 22: Likely visual effect of the Project on Viewpoint 1

Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra	
Visual baseline assessment	
	
<p><i>Existing view from Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra (~150° HFoV)</i></p> <p>Refer to Figure 13, Figure 14 and Figure 16 in Appendix 2 for appropriately scaled image and ~75° HFoV images.</p>	
Location	<ul style="list-style-type: none"> <li>30°53'2.31" S 115°37'50.238" E</li> </ul>
Elevation	<ul style="list-style-type: none"> <li>101.0 m</li> </ul>
Description	<ul style="list-style-type: none"> <li>Northeasterly view from the Brand Highway, providing an open, very close view toward the Project from within the Site.</li> <li>Represents typical views of passing vehicles on the Brand Highway.</li> <li>The view has a typical rural character consistent with <i>LCT A: Rural and forested uplands</i>, which is somewhat influenced by its proximity to <i>LCT B: Rural coastal plain</i> and vegetation present within the road corridor.</li> <li>Walyer Walyer Hill is evident in the background of this view.</li> <li>Precedent infrastructure evident within this view includes road infrastructure, wind turbines associated with Yandin Wind Farm and telecommunications infrastructure on top of Walyer Walyer Hill.</li> <li>The existing 132 kV Kerr-McGee Cataby to Regans OHTL is also visible from this location to the left of the highway (not evident within the view extent).</li> </ul>
Key visual receptors	<ul style="list-style-type: none"> <li>Key visual receptors include: <ul style="list-style-type: none"> <li>A moderate number of receptors in vehicles travelling along the Brand Highway (AADT of up to 2,144, of which 21.5% to 37.1% are heavy vehicles) (Main Roads Western Australia, 2024) which is a State significant scenic route, who may experience transient views towards the Project.</li> <li>A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties (noting these land owners are involved with the Project).</li> </ul> </li> <li>The presence of existing wind farm infrastructure evident in the background of this view is considered to marginally reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>

**Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra**

**Visual sensitivity**

- **Medium** – while the Brand Highway is a State significant scenic route, it is not promoted for its scenic landscape experiences as much as Indian Ocean Drive.

**Visual evaluation**



*Visualisation from Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra (~150° HFoV)*

Refer to **Figure 13**, **Figure 15** and **Figure 17** in Appendix 2 for appropriately scaled image and ~75° HFoV images.

**Magnitude of change assessment**

- The nearest wind turbine is located approximately 380 m to the east of this location therefore views toward the Project from this location are very close.
- Other wind turbines associated with the Project are located at a greater distance from the Brand Highway.
- The Project is anticipated to result in a dominant change to this view and views from this short section of the Brand Highway within the Site due to:
  - very close views toward plant and machinery constructing the Project.
  - very close views toward two (2) wind turbines located in very close proximity to the highway (< 1 km), which will be clearly evident above roadside vegetation. Very close views toward these turbines will be possible for approximately 2.0 km of the Brand Highway.
  - Close views (< 2.5 km) toward an additional four (4) wind turbines will be possible for approximately 5.1 km along this Section of the Brand Highway
  - Moderately close views toward the blade tips of an additional two (2) wind turbines located within 3.3 km of this viewpoint would also be possible from this location.
  - more distant views toward a large number of wind turbines associated with the Project within the background of the view.
- A temporary site entrance east and west will be 240m north of this viewpoint for the delivery of OSOM components. After construction this site entry point will not be utilised as a main site entry.
- A new Western Power 330 kV OHTL is proposed to connect the Project to a new Western Power terminal. The proposed alignment would traverse the Brand Highway approximately 3.8 km north of this viewpoint with the proposed switchyard located approximately 6.4 km northwest of this location (collocated with the BESS and a substation). An alternative terminal location (1 km northwest of this viewpoint) and OHTL alignment has also been proposed which would see the OHTL cross the highway approximately 240 m north of this viewpoint (collocated with the existing access tracks). The final location of both the terminal and overhead transmission line will be in accordance with Western Power guidance and discussion.

**Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra**

	<ul style="list-style-type: none"> <li>• Transient views toward the proposed Western Power terminal, BESS, substation and permanent operations and maintenance facilities would be possible from the Brand Highway in locations where roadside vegetation does not obstruct views to the west.</li> <li>• The proposed OHTL routes would introduce additional transmission infrastructure into the view. However, views toward OHTL infrastructure are already experienced while travelling along the highway and are relatively common in this area so additional OHTL infrastructure would not look out of place in this already modified rural landscape.</li> <li>• While Yandin Wind Farm is already evident in the background of this view, the Project will introduce additional large-scale infrastructure into the rural landscape that will have a dominant effect on this part of the Brand Highway due to the close proximity of wind turbines to this short section of the highway.</li> <li>• Views from the highway are transient and typically experienced at speed, with the exception of more prolonged views that may be experienced from the roadside rest area located approximately 5 km northwest of this viewpoint. However, views toward Yandin Wind Farm are already possible from this rest area and from the Brand Highway to the north of this location (with the nearest existing turbine located approximately 2 km from the highway).</li> <li>• Therefore, while the Project would result in a dominant change to this particular view and approximately 5.1 km of the Brand Highway where close views are possible toward the Project, impacts on other parts of the Brand Highway are considered to result in a lower magnitude of change as described in Viewpoint 2.</li> </ul>
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li>• <b>High</b> – localised impact associated with 5.1 km of the Brand Highway.</li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li>• <b>Moderate to major and significant</b> (relating to impacts on a short section (~5.1 km) of the Brand Highway within the Site).</li> </ul>

**8.3.2. Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo**

**Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo**

**Visual baseline assessment**



*Existing view from Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo (~125° HFoV)*

Refer to **Figure 18** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°47'53.184" S 115°34'59.052" E</li> </ul>
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Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo	
Elevation	<ul style="list-style-type: none"> <li>78.7 m</li> </ul>
Description	<ul style="list-style-type: none"> <li>Southeasterly view from the Brand Highway, providing an open, moderately distant view toward the Project with Yandin Wind Farm evident in the midground of the view with the nearest existing wind turbine located 2.0 km to the east of this viewpoint.</li> <li>Represents typical views of passing vehicles on the Brand Highway.</li> <li>Also representative of similar views experienced from nearby rural properties (noting some of these are directly impacted by the existing Yandin Wind Farm).</li> <li>The view is located on the boundary of <i>LCT A: Rural and forested uplands</i> and <i>LCT B: Rural coastal plain</i> and has a typical rural character that is positively influenced by the presence of vegetation within the road corridor (which includes species considered to have high scenic value).</li> <li>Other precedent infrastructure evident within this view includes road infrastructure, a telecommunications tower and rural fencing.</li> </ul>
Key visual receptors	<ul style="list-style-type: none"> <li>Key visual receptors include: <ul style="list-style-type: none"> <li>A moderate number of receptors in vehicles travelling along the Brand Highway (AADT of up to 2,144, of which 21.5% to 37.1% are heavy vehicles) (Main Roads Western Australia, 2024) which is a State significant scenic route, who may experience transient views towards the Project.</li> <li>A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties (noting some of these land owners are already directly impacted by the Yandin Wind Farm development).</li> </ul> </li> <li>The presence of existing wind farm infrastructure is considered to somewhat reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
Visual sensitivity	<ul style="list-style-type: none"> <li><b>Medium</b> – while the Brand Highway is a State significant scenic route, it is not promoted for its scenic landscape experiences as much as Indian Ocean Drive.</li> </ul>
Visual evaluation	
Magnitude of change assessment	<ul style="list-style-type: none"> <li>The nearest wind turbine is located approximately 5.6 km southeast of this location therefore views toward the Project from this location are moderately distant.</li> <li>The Project is anticipated to result in a considerable change to this view and views from this section of the Brand Highway due to moderately distant views toward a moderate number of wind turbines associated with the Project within the background of the view.</li> <li>Wind turbines located in the northern part of the Site will not be visible from this location due to intervening terrain (i.e. they are located behind the ridgeline to the east).</li> <li>A new Western Power 330 kV OHTL is proposed to connect the Project to a new Western Power terminal. The proposed alignment would traverse the Brand Highway approximately 6.5 km southeast of this viewpoint with the proposed switchyard located approximately 3.9 km south of this location (collocated with the BESS and a substation). An alternative terminal location and OHTL alignment has also been proposed which would see the OHTL cross the highway further south. The final location of both the terminal and overhead</li> </ul>

**Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo**

	<p>transmission line will be in accordance with Western Power guidance and discussion.</p> <ul style="list-style-type: none"> <li>• Transient views toward the proposed Western Power terminal, BESS, substation and permanent operations and maintenance facilities would be possible from the Brand Highway. However, noting that existing roadside vegetation largely restricts the availability of close open views toward the areas within which this infrastructure is proposed.</li> <li>• While the proposed OHTL routes would introduce additional transmission infrastructure into the view, views toward OHTL infrastructure are already experienced while travelling along the highway and are relatively common in this area so additional OHTL infrastructure would not look out of place in this already modified rural landscape.</li> <li>• Moderately distant views toward plant and machinery constructing the Project may also be possible from this location.</li> <li>• While Yandin Wind Farm is already evident in the midground of this view, the Project will introduce additional large-scale infrastructure into the rural landscape that will increase the visual prominence of wind development experienced while travelling along on this part of the Brand Highway.</li> <li>• While views from the highway are transient and typically experienced at speed, views toward the Project would be experienced while travelling along the highway for several kilometres and prolonged viewing opportunities (albeit more distant) would be experienced from the Cataby roadside rest area located approximately 5.6 km northwest of this viewpoint.</li> </ul>
<p><b>Magnitude of change</b></p>	<ul style="list-style-type: none"> <li>• <b>Medium.</b></li> </ul>
<p><b>Significance of effect</b></p>	<ul style="list-style-type: none"> <li>• <b>Moderate and not significant.</b></li> </ul>

### 8.3.3. Viewpoint 3: Southeasterly and southwesterly views from Yandin Lookout and carpark area, Dandaragan

#### Viewpoint 3: Southeasterly and southwesterly views from Yandin Lookout and carpark area, Dandaragan

##### Visual baseline assessment



*Existing view from Viewpoint 3A: Southeasterly view from Yandin Lookout carpark, Dandaragan (-125° HFoV)*

Refer to Figure 19 in Appendix 2 for appropriately scaled image and -75° HFoV image.



*Existing view from Viewpoint 3B: Southwesterly view from Yandin Lookout, Dandaragan (-225° HFoV)*

Refer to Figure 20 in Appendix 2 appropriately scaled image and -75° HFoV image.

Location	<ul style="list-style-type: none"> <li>• 30°46'16.482" S 115°36'32.358" E (3A)</li> <li>• 30°46'20.058" S 115°36'24.798" E (3B)</li> </ul>
Elevation	<ul style="list-style-type: none"> <li>• 277.0 m (3A)</li> <li>• 276.7 m (3B)</li> </ul>
Description	<ul style="list-style-type: none"> <li>• These viewpoints represent typical views experienced by tourists and visitors accessing Yandin Lookout.</li> <li>• Viewpoint 3A provides a southeasterly view from the Yandin Lookout carpark area near the Yandin Wind Farm viewing area, providing a relatively open and elevated, distant view toward the Project. Yandin Wind Farm including a large number of wind turbines and OHTL towers and cables is evident in the midground and foreground of the view. The nearest existing wind turbine and OHTL tower are located 1.0 km and 130 m to the northeast of this viewpoint respectively.</li> <li>• Viewpoint 3B provides a panoramic southwesterly view from the formal Yandin Lookout across the Yandin Breakaway, rural landscape toward the coastal plain. Existing wind turbines and OHTL towers and cables associated with Yandin Wind Farm are evident in the view and are located 1.4 km and 200 m from this location, respectively. West Hills Wind Farm, Karakin Wind Farm, Emu Downs Wind Farm and mining areas associated with the Cataby Mineral Sands Project are also evident in the background of the view.</li> <li>• These viewpoints are located in part of <i>LCT A: Rural and forested uplands</i> zoned for conservation and this area supports native vegetation (<i>Xanthorrhoea preissii</i> shrubland (Ecologia Environment, 2017) and geological</li> </ul>

Viewpoint 3: Southeasterly and southwesterly views from Yandin Lookout and carpark area, Dandaragan	
	<p>features considered to be of high scenic amenity value including Yandin Breakaway.</p> <ul style="list-style-type: none"> <li>• Viewpoint 3A provides views across the rural and forested landscape mosaic that is typical of <i>LCT A: Rural and forested uplands</i>.</li> <li>• Viewpoint 3B provides elevated views from the lookout across <i>LCT A: Rural and forested uplands</i>, with landscapes associated with <i>LCT B: Rural coastal plain</i> evident in the background of the view.</li> <li>• Other precedent infrastructure evident within this view includes road infrastructure, mineral sand mining operations, a substation and rural fencing.</li> </ul>
Key visual receptors	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ Tourists visiting Yandin Lookout, which is a formal scenic lookout and promoted with signage on the Brand Highway, which is a State significant scenic route. The lookout is also identified as a site of interest on visitor information boards in the town of Dandaragan. These receptors are likely to be highly interested in views from the scenic lookout and walking trail across the surrounding landscape.</li> <li>○ Other receptors visiting Yandin Lookout to specially obtain close views toward the Yandin Wind Farm from the viewing area (located near the carpark entrance).</li> </ul> </li> <li>• The presence of existing wind farm and OHTL infrastructure (which has modified the visual character of views experienced from this area) is considered to reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> <li>• In addition, visitors are anticipated to be principally interested in the view from the formal lookout (3B) rather than views from the carpark area (3A).</li> </ul>
Visual sensitivity	<ul style="list-style-type: none"> <li>• <b>Medium (3A)</b> – as the carpark area is primarily there to provide access to the scenic lookout</li> <li>• <b>High (3B)</b> – as this is a formal scenic lookout promoted on the Brand Highway.</li> </ul>
Visual evaluation	
Magnitude of change assessment	<ul style="list-style-type: none"> <li>• The nearest wind turbines are located approximately 6.2 km and 6.3 km southeast of Viewpoint 3A and 3B respectively, and therefore views toward the Project from these locations are moderately distant.</li> <li>• The Project is anticipated to result in a considerable change to views experienced from the Yandin Lookout carpark area (Viewpoint 3A) as the Project will introduce a large number of wind turbines, which will be clearly evident across a large part of the background of the view.</li> <li>• Only a small number of wind turbines are anticipated to be evident through vegetation from the formal scenic lookout (Viewpoint 3B). These will be located behind the existing Yandin Wind Farm turbines evident in the left hand side of the view. Other turbines associated with the Project will not be evident due to intervening topography and vegetation.</li> <li>• Moderately distant views toward plant and machinery constructing the Project may also be possible from these locations.</li> <li>• The Project will also be visible from parts of the walking trail and while travelling along the access road to Yandin Lookout.</li> <li>• While it is acknowledged close views toward Yandin Wind Farm and more distant views to other wind developments are already possible from Yandin</li> </ul>

**Viewpoint 3: Southeasterly and southwesterly views from Yandin Lookout and carpark area, Dandaragan**

	Lookout and the carpark area, the Project will introduce additional large-scale infrastructure into the rural landscape. This will increase the visual prominence of wind development in this rural area.
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li>• Medium (3A)</li> <li>• Low (3B).</li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li>• Moderate and not significant (3A and 3B).</li> </ul>

**8.3.4. Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo**

**Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo**

Visual baseline assessment



*Existing view from Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo – existing view and visualisation (~150°)*

Refer to **Figure 21**, **Figure 22** and **Figure 23** in Appendix 2 for appropriately scaled image and ~75° HFoV images.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°46'22.056" S 115°41'57.144" E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>• 173.0 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>• Southeasterly view from Dandaragan Road, providing a relatively open, close view toward the Project from within the Site.</li> <li>• Represents typical views of passing vehicles on Dandaragan Road.</li> <li>• The view has a typical rural character consistent with <i>LCT A: Rural and forested uplands</i>, which is positively influenced by historic buildings associated with Yathroo Homestead (a private dwelling).</li> <li>• Precedent infrastructure evident within this view includes road infrastructure, rural fencing, stone walls and other farm infrastructure.</li> <li>• Wind turbines associated with Yandin Wind Farm are located approximately 3.9 km from this viewpoint at their nearest, and are not evident in this view extent. However, wind turbine blade tips are evident above the ridgeline on the right hand side of the view as turbines rotate from this section of Dandaragan Road (to the right hand side of the image frame).</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ A low number of receptors in vehicles travelling along Dandaragan Road (AADT of up to 304 of which 17.6% to 38.8% are heavy vehicles) (Main</li> </ul> </li> </ul>

**Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo**

	<p>Roads Western Australia, 2025), which is part of the promoted and signposted Dandaragan Way scenic route, who may experience transient views towards the Project.</p> <ul style="list-style-type: none"> <li>○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties (noting these land owners are involved with the Project).</li> <li>● Due to the limited presence of existing wind farm infrastructure evident in this view, the sensitivity of receptors in this location is not considered to be reduced by the proximity of Yandin Wind Farm.</li> </ul>
<p><b>Visual sensitivity</b></p>	<ul style="list-style-type: none"> <li>● <b>Low</b> – while Dandaragan Way is a promoted scenic route, it has a low level of use and existing wind turbines from the road are noted as a feature of this drive.</li> </ul>

**Visual evaluation**



*Visualisation from Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo – existing view and visualisation (~150°)*

Refer to Figure 21, Figure 22 and Figure 23 in Appendix 2 for appropriately scaled images and ~75° HFoV images.

<p><b>Magnitude of change assessment</b></p>	<ul style="list-style-type: none"> <li>● The nearest wind turbine is located approximately 1.7 km to the south-southeast of this location therefore views toward the Project from this location are close.</li> <li>● The Project is anticipated to result in a dominant change to this view and views from this section Dandaragan Road due to: <ul style="list-style-type: none"> <li>○ close views toward plant and machinery constructing the Project.</li> <li>○ close views toward two wind turbines located in close proximity to this viewpoint (&lt; 2.5 km away), which will be clearly evident above low vegetation in the rural landscape</li> <li>○ more distant views toward a large number of wind turbines associated with the Project, which will be evident across a large part of the midground and background of the view.</li> </ul> </li> <li>● The Project will introduce new large-scale infrastructure into the rural landscape that will have a dominant effect on this part of the Dandaragan Way.</li> <li>● While views from the road are transient and typically experienced at speed, close views to turbines located on either side of the Dandaragan Way will be experienced for several kilometres.</li> </ul>
<p><b>Magnitude of change</b></p>	<ul style="list-style-type: none"> <li>● <b>High.</b></li> </ul>

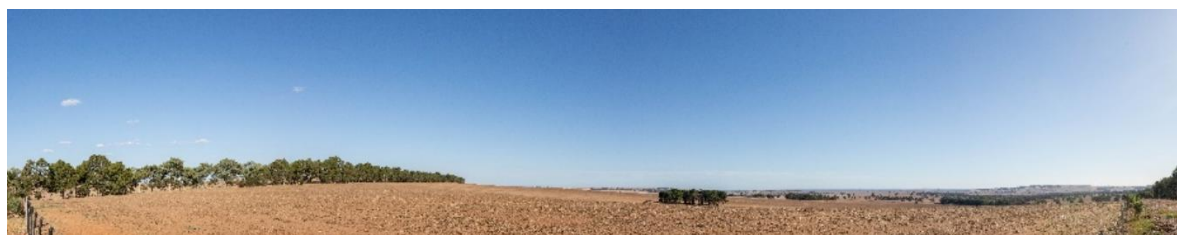
**Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo**

Significance of effect	<ul style="list-style-type: none"> <li>Moderate and not significant.</li> </ul>
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**8.3.5. Viewpoint 5: Southerly and northerly views from Stockyard Road near intersection with Dandaragan Road, Yathroo**

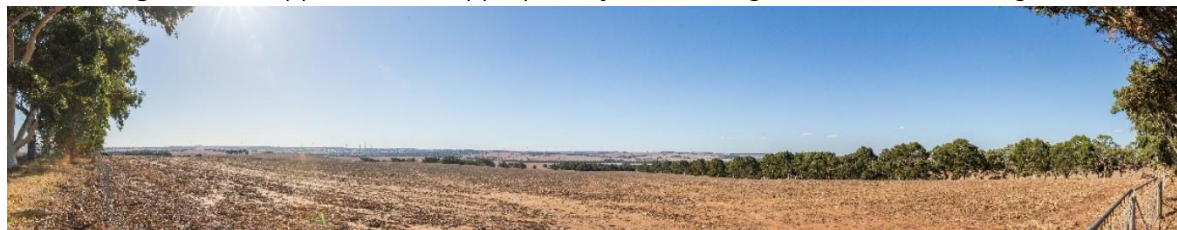
**Viewpoint 5: Southerly and northerly views from Stockyard Road near intersection with Dandaragan Road, Yathroo**

Visual baseline assessment



*Existing view from Viewpoint 5A: Southerly view from Stockyard Road near intersection with Dandaragan Road, Yathroo (~200° HFoV)*

Refer to **Figure 24** in Appendix 2 for appropriately scaled image and ~75° HFoV images.



*Existing view from Viewpoint 5B: Northerly view from Stockyard Road near intersection with Dandaragan Road, Yathroo (~200° HFoV)*

Refer to **Figure 25** in Appendix 2 for appropriately scaled image and ~75° HFoV images.

<b>Location</b>	<ul style="list-style-type: none"> <li>30°49'36.672" S 115°42'18.018" E (5A)</li> <li>30°49'35.634" S 115°42'18.42" E (5B)</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>246.2 m (5A)</li> <li>249.9 m (5B)</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>Southerly (5A) and northerly (5B) views from Stockyard Road near intersection with Dandaragan Road, providing elevated, panoramic and very close views toward the Project from within the Site. These viewpoints are near the most elevated part of the Site.</li> <li>Represents typical views of passing vehicles on Stockyard Road and very similar views experienced from the nearby section of Dandaragan Road.</li> <li>These views have a typical and common rural character consistent with elevated parts of <i>LCTA: Rural and forested uplands</i> where distant and open views across the surrounding landscape are possible.</li> <li>Precedent infrastructure evident within these views includes road infrastructure, rural fencing, a telecommunications tower and other farm infrastructure.</li> </ul>

Viewpoint 5: Southerly and northerly views from Stockyard Road near intersection with Dandaragan Road, Yathroo	
	<ul style="list-style-type: none"> <li>• Wind turbines associated with Yandin Wind Farm are located approximately 6.4 km northwest of Viewpoint 5B at their nearest, and are evident across a significant portion of the background of the views to the north.</li> <li>• Very distant views to Karakin Wind Farm are also possible when looking south (just evident in the background of Viewpoint 5A).</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ A very low number of receptors in vehicles travelling along Stockyard Road who may experience transient views towards the Project.</li> <li>○ A low number of receptors in vehicles travelling along Dandaragan Road (AADT of up to 304 of which 17.6% to 38.8% are heavy vehicles) (Main Roads Western Australia, 2025) which is part of the promoted and signposted Dandaragan Way scenic route, who may experience very similar transient views towards the Project.</li> <li>○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties (noting these land owners are mostly involved with the Project with some uninvolved dwellings located approximately 2 km east of this viewpoint).</li> </ul> </li> <li>• The presence of existing wind farm infrastructure evident in the background of these views is considered to somewhat reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li>• <b>Low</b> – while the nearby Dandaragan Way is a promoted scenic route, it has a low level of use and existing wind turbines from the road are noted as a feature of this drive.</li> </ul>
Visual evaluation	
<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>• The nearest wind turbines are located approximately 825 m southeast and 1.2 km northeast of viewpoints 5A and 5B, respectively. Therefore views toward the Project from this location and nearby parts of Dandaragan Road are very close to close.</li> <li>• The Project is anticipated to result in a dominant change to these views and similar views from the nearby section Dandaragan Road due to: <ul style="list-style-type: none"> <li>○ very close views toward temporary construction compounds and plant and machinery constructing the Project.</li> <li>○ panoramic, 360-degree views from this location to a very large number of turbines. This includes close views toward six wind turbines (&lt; 2.5 km) from this location.</li> </ul> </li> <li>• close views from Stockyard Road toward a potential substation location including associated security lighting. While existing wind farm development is evident from this location, the Project will introduce additional large-scale infrastructure into the rural landscape that will have a dominant effect on views experienced from Stockyard Road and the nearby section of the Dandaragan Way.</li> <li>• While views from these roads are transient and typically experienced at speed, close views to turbines located on either side of the Dandaragan Way will be experienced for several kilometres and substation in this location will be permanent.</li> </ul>

**Viewpoint 5: Southerly and northerly views from Stockyard Road near intersection with Dandaragan Road, Yathroo**

Magnitude of change	<ul style="list-style-type: none"> <li>High.</li> </ul>
Significance of effect	<ul style="list-style-type: none"> <li>Moderate and not significant.</li> </ul>

**8.3.6. Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo**

**Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo**

Visual baseline assessment



*Existing view from Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo (~200° HFoV)*

Refer to **Figure 26** in Appendix 2 for appropriately scaled image and ~75° HFoV images.

Location	<ul style="list-style-type: none"> <li>30°52'5.154" S 115°42'2.364" E</li> </ul>
Elevation	<ul style="list-style-type: none"> <li>143.2 m</li> </ul>
Description	<ul style="list-style-type: none"> <li>Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, providing a relatively open, close view toward the Project from just outside the Site boundary.</li> <li>Represents typical views of passing vehicles on Dandaragan Road and similar views experienced from nearby uninvolved rural properties.</li> <li>The view has a typical rural character consistent with <i>LCT A: Rural and forested uplands</i>, which is positively influenced by the strand of mature roadside vegetation evident in the view.</li> <li>Precedent infrastructure evident within this view includes road infrastructure, telecommunications infrastructure, rural fencing, rural sheds and other farm infrastructure.</li> <li>Wind turbines associated with Yandin Wind Farm are located approximately 8.7 km northwest of this viewpoint at their nearest, and are evident above the ridgeline on the left hand side of the view.</li> </ul>
Key visual receptors	<ul style="list-style-type: none"> <li>Key visual receptors include: <ul style="list-style-type: none"> <li>A low number of receptors in vehicles travelling along Dandaragan Road (AADT of up to 304 of which 17.6% to 38.8% are heavy vehicles) (Main Roads Western Australia, 2025), which is part of the promoted and signposted Dandaragan Way scenic route, who may experience transient views towards the Project.</li> <li>A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and</li> </ul> </li> </ul>

Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo	
	<p>properties (including several uninvolved dwellings located within 2.5 km of this viewpoint).</p> <ul style="list-style-type: none"> <li>The presence of existing wind farm infrastructure evident in the background of this view is considered to somewhat reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li><b>Low</b> – while Dandaragan Way is a promoted scenic route, it has a low level of use and existing wind turbines from the road are noted as a feature of this drive.</li> </ul>
Visual evaluation	
<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>The nearest wind turbine is located approximately 2.1 km to the southeast of this location therefore views toward the Project from this location are close.</li> <li>The Project is anticipated to result in a dominant change to this view and views from this section Dandaragan Road due to: <ul style="list-style-type: none"> <li>close views toward plant and machinery constructing the Project.</li> <li>close views toward three wind turbines from this location, which will be clearly evident within the rural landscape (albeit noting vegetation may somewhat obscure the base of some turbines)</li> <li>more distant views toward a large number of wind turbines associated with the Project, which will be evident across a large part of the midground and background of the view with limited areas not impacted by wind infrastructure.</li> </ul> </li> <li>The Project will introduce additional large-scale infrastructure into the rural landscape that will have a dominant effect on this part of the Dandaragan Way.</li> <li>While views from the road are transient and typically experienced at speed, close views to turbines located on either side of the Dandaragan Way will be experienced for several kilometres.</li> </ul>
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li><b>High.</b></li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li><b>Moderate and not significant.</b></li> </ul>

### 8.3.7. Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo

#### Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo

##### Visual baseline assessment



*Existing view from Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo (~200° HFOV)*

Refer to Figure 27, Figure 28, Figure 29 and Figure 30 in Appendix 2 for appropriately scaled image and ~75° HFOV images.

<b>Location</b>	<ul style="list-style-type: none"> <li>30°54'21.3" S 115°42'21.972" E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>228.4 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>Northerly view from the southern part of Dandaragan Road between Gillingara Road and Rowes Road, providing an elevated open, very close toward the Project from the boundary of the Site.</li> <li>Represents typical views of passing vehicles on Dandaragan Road and similar views experienced from nearby uninvolved rural properties.</li> <li>The view has a typical and common rural character consistent with <i>LCT A: Rural and forested uplands</i>.</li> <li>Precedent infrastructure evident within this view includes road infrastructure, telecommunications infrastructure, rural fencing and other farm infrastructure.</li> <li>Wind turbines associated with Yandin Wind Farm are located approximately 12.2 km northwest of this viewpoint at their nearest, and are evident above the ridgeline in the background of the view.</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>Key visual receptors include: <ul style="list-style-type: none"> <li>A low number of receptors in vehicles travelling along Dandaragan Road (AADT of up to 304 of which 17.6% to 38.8% are heavy vehicles) (Main Roads Western Australia, 2025), which is part of the promoted and signposted Dandaragan Way scenic route, who may experience transient views towards the Project.</li> <li>A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties (including several uninvolved properties) noting that no dwellings are located within proximity to this viewpoint.</li> </ul> </li> <li>The presence of existing wind farm infrastructure evident in the background of this view is considered to marginally reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li><b>Low</b> – while Dandaragan Way is a promoted scenic route, it has a low level of use and existing wind turbines from the road are noted as a feature of this drive.</li> </ul>

**Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo**

**Visual evaluation**



*Visualisation from Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo (~200° HFoV)*

Refer to Figure 27, Figure 28, Figure 29 and Figure 31 in Appendix 2 for appropriately scaled image and ~75° HFoV images.

**Magnitude of change assessment**

- The nearest wind turbine is located approximately 430 m to the southeast of this location therefore views toward the Project from this location are very close.
- The Project is anticipated to result in a dominant change to this view and views from this section Dandaragan Road due to:
  - Very close views toward plant and machinery constructing the Project.
  - close views toward four wind turbines located to the east of this section of Dandaragan Road from this location, which will be clearly evident within the rural landscape (albeit noting vegetation may somewhat obscure the base of some turbines)
  - more distant views toward a large number of wind turbines associated with the Project, which will be evident across a large part of the background of the view to the east and west of Dandaragan Road.
- There is also the potential for an existing private access track located 115 m south of this location to be utilised for light vehicle access, which would introduce additional transient light vehicle traffic movements into this view during construction only
- The Project will introduce additional large-scale infrastructure into the rural landscape that will have a dominant effect on this part of the Dandaragan Way.
- While views from the road are transient and typically experienced at speed, close views to turbines located on either side of the Dandaragan Way will be experienced for several kilometres.

**Magnitude of change**

- **High.**

**Significance of effect**

- **Moderate and not significant.**

### 8.3.8. Viewpoint 8: Westerly view from Rowses Road near intersection of Scenic Drive, Yathroo

#### Viewpoint 8: Westerly view from Rowses Road near intersection of Scenic Drive, Yathroo

##### Visual baseline assessment



*Existing view from Viewpoint 8: Westerly view from Rowses Road near intersection of Scenic Drive, Yathroo (~200° HFoV)*

Refer to Figure 32, Figure 33 and Figure 34 in Appendix 2 for appropriately scaled image and ~75° HFoV images.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°50'32.124" S 115°46'2.262" E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>• 208.7 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>• Westerly view from Rowses Road near the intersection with Scenic Drive, providing an elevated open, close view toward the Project from the boundary of the Site.</li> <li>• Represents typical views of passing vehicles on Rowses Road and similar views experienced from nearby uninvolved rural properties.</li> <li>• The view has a typical and common rural character consistent with <i>LCT A: Rural and forested uplands</i>.</li> <li>• Precedent infrastructure evident within this view includes road infrastructure, rural fencing and other farm infrastructure.</li> <li>• Wind turbines associated with Yandin Wind Farm are located approximately 12.3 km northwest of this viewpoint at their nearest, and are evident above the ridgelines in the background of the view.</li> <li>• A wind monitoring tower is also just evident in the background of the view.</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ A low number of receptors in vehicles travelling along Rowses Road (AADT of up to 92 of which 17.6% to 45.7% are heavy vehicles) (Main Roads Western Australia, 2025).</li> <li>○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties (including several uninvolved properties and dwellings located to the east of Rowses Road).</li> </ul> </li> <li>• The presence of existing wind farm infrastructure evident in the background of this view is considered to marginally reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li>• <b>Low</b> – Rowses Road is a local road with low traffic volumes and there are few nearby permanent residential receptors.</li> </ul>

**Viewpoint 8: Westerly view from Rowses Road near intersection of Scenic Drive, Yathroo**

**Visual evaluation**



*Visualisation from Viewpoint 8: Westerly view from Rowses Road near intersection of Scenic Drive, Yathroo (~200° HFoV)*

Refer to **Figure 32**, **Figure 33** and **Figure 34** in Appendix 2 for appropriately scaled image and ~75° HFoV images.

<p><b>Magnitude of change assessment</b></p>	<ul style="list-style-type: none"> <li>• The nearest wind turbine is located approximately 1.9 km to the southwest of this location therefore views toward the Project from this location are close.</li> <li>• The Project is anticipated to result in a dominant change to this view and views from other parts of Rowses Road along the eastern Site boundary due to panoramic views from this location toward a very large number of wind turbines associated with the Project.</li> <li>• Close views toward plant and machinery constructing the Project would also be possible from this location.</li> <li>• The Project will introduce additional large-scale infrastructure into the rural landscape with turbines evident at a range of distances across a substantial portion of this view.</li> <li>• While views from the road are transient and typically experienced at speed, Similar views toward the Project from Rowses Road will be experienced for several kilometres.</li> </ul>
<p><b>Magnitude of change</b></p>	<ul style="list-style-type: none"> <li>• <b>High.</b></li> </ul>
<p><b>Significance of effect</b></p>	<ul style="list-style-type: none"> <li>• <b>Moderate and not significant.</b></li> </ul>

### 8.3.9. Viewpoint 9: Southerly views from Dandaragan town, Dandaragan

#### Viewpoint 9: Southerly views from Dandaragan town, Dandaragan

##### Visual baseline assessment



*Existing view from Viewpoint 9A: Southerly view from Dandaragan Community Recreation Centre, Dandaragan (~100° HFoV)*

Refer to **Figure 35** and **Figure 36** in Appendix 2 for appropriately scaled image and ~75° HFoV images.



*Existing view from Viewpoint 9B: Southerly view from end of Camm Road, Dandaragan (~100° HFoV)*

Refer to **Figure 37** in Appendix 2 appropriately scaled image and ~75° HFoV image.



*Existing view from Viewpoint 9C: Southerly view from Dandaragan Road, Dandaragan (~100° HFoV)*

Refer to **Figure 38** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°40'5.046" S 115°42'15.282" E (9A)</li> <li>• 30°40'25.11" S 115°41'55.62" E (9B)</li> <li>• 30°39'33.402" S 115°42'13.152" E (9C)</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>• 188.1 m (9A)</li> <li>• 195.2 m (9B)</li> <li>• 207.3 m (9C)</li> </ul>

Viewpoint 9: Southerly views from Dandaragan town, Dandaragan	
<b>Description</b>	<ul style="list-style-type: none"> <li>• These viewpoints represent the variety of typical views experienced by residents of and visitors to the rural town of Dandaragan.</li> <li>• Viewpoint 9A provides a southerly view from the Dandaragan Community Recreation Centre. This viewpoint was taken from the edge of the bowls club, which is slightly elevated above the surrounding sportsgrounds. Several existing wind turbines associated with Yandin Wind Farm are evident above and through vegetation from this and nearby locations within the community precinct.</li> <li>• Viewpoint 9B provides a southerly view from the edge of the town at the end of Camm Road and is representative of open views that may be experienced from this part of the town toward the Project. A large number of wind turbines associated with Yandin Wind Farm are evident along the ridgeline in the background of this view.</li> <li>• Viewpoint 9C provides an elevated southerly view from the northern part of the town on Dandaragan Road and is representative of views experienced travelling along the road and similar views likely to be experienced from nearby rural residential dwellings. A moderate number of existing wind turbines associated with Yandin Wind Farm are evident in the background of the view behind the town.</li> <li>• Viewpoint 9A has a character typical of a small rural town and consistent with <i>LCT G: Rural settlements</i>.</li> <li>• Viewpoint 9B and 9C have more of a typical rural character consistent with <i>LCT A: Rural and forested uplands</i> due to their locations location on the edge of the town. While urban development associated with Dandaragan and <i>LCT G: Rural settlements</i> is evident, the rural landscape remains the predominant characteristic.</li> <li>• Precedent infrastructure evident within these views is largely typical of a rural town, with the exception of Yandin Wind Farm evident to the south. The nearest existing wind turbine is located 3.3 km south of the town and the visibility of the existing wind farm varies within the town, and is locally influenced by vegetation and built form.</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ Residents of Dandaragan, who would experience a range of viewing opportunities toward the Project from the town and may experience similar views toward the Project from their properties.</li> <li>○ A low number of receptors in vehicles travelling along Dandaragan Road (AADT of up to 304 of which 17.6% to 38.8% are heavy vehicles) (Main Roads Western Australia, 2025), which is part of the promoted and signposted Dandaragan Way scenic route, who may experience transient views towards the Project.</li> <li>○ A low number of visitors to the town, who may stop to use the rest area and amenities in the town or stay overnight within the park (which facilitates stays of up to three nights).</li> <li>○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties.</li> </ul> </li> <li>• The availability of relatively close views toward Yandin Wind Farm from the town is considered to somewhat reduce the sensitivity of receptors in Dandaragan to further wind farm development associated with the Project.</li> </ul>

**Viewpoint 9: Southerly views from Dandaragan town, Dandaragan**

**Visual sensitivity**

- **High (9A)** - as this location provides prolonged viewing opportunities for both residents of and visitors to Dandaragan and is a well-used recreational facility.
- **Medium (9B and 9C)** - as these views represent typical views experienced from other parts of this small rural town.

**Visual evaluation**



*Visualisation from Viewpoint 9A: Southerly view from Dandaragan Community Recreation Centre, Dandaragan (-100° HFoV)*

Refer to **Figure 35** and **Figure 36** in Appendix 2 for appropriately scaled image and -75° HFoV images.

**Magnitude of change assessment**

- The nearest wind turbine associated with the Project is located approximately 10.4 km to the south of the town of Dandaragan, and therefore views toward the Project from the town are distant.
- The Project is anticipated to result in, at most, a noticeable change to some views experienced from the town due to the following factors:
  - the top of a small number of wind turbines and the blade tips of a large number of additional wind turbines will be evident behind the ridgeline to the south of Dandaragan
  - these wind turbines will be located at a greater distance than existing wind turbines associated with the Yandin Wind Farm from the town
  - the extent of visibility of the additional wind turbines will vary throughout the town, depending on the elevation of the viewer and the presence of vegetation and built form, which may locally restrict the availability of views toward the Project.
- Overall, the Project will introduce additional wind turbines into the background of southerly views experienced from the town, and result in at most, a noticeable increase of wind infrastructure evident behind the ridgeline.

**Magnitude of change**

- At most, **low**.

**Significance of effect**

- **Moderate and not significant (9A)**
- **Minor to moderate and not significant (9B and 9C).**

### 8.3.10. Viewpoint 10: Southwesterly view from Rowes Road, Dandaragan

#### Viewpoint 10: Southwesterly view from Rowes Road, Dandaragan

##### Visual baseline assessment



*Existing view from Viewpoint 10: Southwesterly view from Rowes Road, Dandaragan (~100° HFoV)*

Refer to **Figure 39** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°43'18.624" S 115°51'34.344" E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>• 255.9 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>• Southwesterly view from Rowes Road providing an elevated, open, distant view toward the Project.</li> <li>• Represents typical views of passing vehicles on Rowes Road and similar views experienced from nearby uninvolved rural properties located in the northeastern part of the LVIA Study Area.</li> <li>• The view has a typical and common, large-scale rural character consistent with extensive areas within <i>LCT A: Rural and forested uplands</i>.</li> <li>• Precedent infrastructure evident within this view includes road infrastructure, rural fencing and other farm infrastructure.</li> <li>• Wind turbines associated with Yandin Wind Farm are located approximately 10.5 km west-southwest of this viewpoint at their nearest, and are evident above the ridgeline in the background of the view (right hand side of view).</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ A low number of receptors in vehicles travelling along this section of Rowes Road (AADT of up to 112 of which 26.8% are heavy vehicles) (Main Roads Western Australia, 2025).</li> <li>○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties and rural dwellings.</li> </ul> </li> <li>• The presence of existing wind farm infrastructure evident in the background of this view is considered to marginally reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li>• <b>Low</b> – Rowes Road is a local road with low traffic volumes and there are few nearby permanent residential receptors.</li> </ul>

##### Visual evaluation

<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>• The nearest wind turbine is located approximately 11.9 km to the southwest of this location therefore views toward the Project from this location are distant.</li> <li>• The Project is anticipated to result in a considerable change to this view and similar views experienced from other parts elevated areas in the northeast of the LVIA Study Area. This is due to the potential for elevated and panoramic</li> </ul>
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**Viewpoint 10: Southwesterly view from Rowes Road, Dandaragan**

	<p>views from these locations toward a very large number of wind turbines, which will be evident along the ridgeline in the background of the view.</p> <ul style="list-style-type: none"> <li>• It is noted that while Yandin Wind Farm is already evident, the Project will introduce additional large-scale infrastructure into the rural landscape with turbines evident across a substantial portion of the background of this view. These wind turbines will also be taller than existing wind turbines.</li> <li>• While views from the road are transient and typically experienced at speed, Similar views toward the Project will be experienced from nearby rural properties and other local roads throughout the northeastern part of the LVIA Study Area.</li> </ul>
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li>• <b>Medium.</b></li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li>• <b>Minor to Moderate and not significant.</b></li> </ul>

**8.3.11. Viewpoint 11: Northwesterly view from Boundary Road, Yathroo**

**Viewpoint 11: Northwesterly view from Boundary Road, Yathroo**

**Visual baseline assessment**



*Existing view from Viewpoint 11: Northwesterly view from Boundary Road, Yathroo (~100° HFoV)*

Refer to **Figure 40** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°53'17.274" S 115°56'2.526" E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>• 227.1 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>• Northwesterly view from Boundary Road providing an elevated, open, very distant view toward the Project.</li> <li>• Represents typical views of passing vehicles on Boundary Road and similar views experienced from nearby uninvolved rural properties and local roads located in the eastern part of the LVIA Study Area.</li> <li>• The view has a typical, common, large-scale rural character consistent with <i>LCT A: Rural and forested uplands</i>.</li> <li>• Precedent infrastructure evident within this view includes road infrastructure, telecommunications infrastructure, rural fencing and other farm infrastructure.</li> <li>• Wind turbines associated with Yandin Wind Farm are located approximately 23.9 km northwest of this viewpoint at their nearest, and are evident above the ridgeline in the background of the view (central part of view).</li> </ul>

Viewpoint 11: Northwesterly view from Boundary Road, Yathroo	
Key visual receptors	<ul style="list-style-type: none"> <li>• Key visual receptors include:               <ul style="list-style-type: none"> <li>○ A low number of receptors in vehicles travelling along Boundary Road.</li> <li>○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties and rural dwellings.</li> </ul> </li> <li>• The presence of existing wind farm infrastructure evident in the background of this view is considered to marginally reduce the sensitivity of receptors in this location to further wind farm development associated with the Project.</li> </ul>
Visual sensitivity	<ul style="list-style-type: none"> <li>• <b>Low.</b></li> </ul>
Visual evaluation	
Magnitude of change assessment	<ul style="list-style-type: none"> <li>• The nearest wind turbine is located approximately 17.9 km to the west-northwest of this location therefore views toward the Project from this location are very distant.</li> <li>• The Project is anticipated to result in a noticeable change to this view and similar views experienced from other parts elevated areas in the east of the LVIA Study Area. This is due to the potential for elevated and panoramic views from these locations toward a very large number of wind turbines, which will be evident along the ridgeline in the background of the view.</li> <li>• While Yandin Wind Farm is already evident in these views, the Project will introduce additional large-scale infrastructure into the rural landscape with turbines evident across a substantial portion of this view. These wind turbines will also be taller than existing wind turbines.</li> <li>• While views from the road are transient and typically experienced at speed, Similar views toward the Project will be experienced from nearby rural properties and other local roads throughout the northeastern part of the LVIA Study Area.</li> </ul>
Magnitude of change	<ul style="list-style-type: none"> <li>• <b>Low.</b></li> </ul>
Significance of effect	<ul style="list-style-type: none"> <li>• <b>Minor and not significant.</b></li> </ul>

### 8.3.12. Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully

#### Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully

##### Visual baseline assessment



*Existing view from Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully (-100° HFoV)*

Refer to **Figure 41** in Appendix 2 for appropriately scaled image and -75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>30°58'51.96"S 115°48'12.84"E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>141.7 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>Northwesterly view from Mogumber Road West providing a relatively open, distant view toward the Project.</li> <li>Represents typical views of passing vehicles on Mogumber Road West and similar views experienced from nearby uninvolved rural properties and local roads located in the southeastern part of the LVIA Study Area.</li> <li>The view has a mixed rural and natural character consistent with <i>LCT A: Rural and forested uplands</i>, which is positively influenced by the Moore River and associated vegetation communities within Moochamulla Nature Reserve and along the banks of the river, which are considered to have high scenic amenity value.</li> <li>Precedent infrastructure evident within this view is limited to road infrastructure and a wind monitoring tower, which is visible in the background.</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>Key visual receptors include: <ul style="list-style-type: none"> <li>A low number of receptors in vehicles travelling along Mogumber Road West (AADT of 103 of which 25.2% are heavy vehicles) (Main Roads Western Australia, 2025).</li> <li>A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties and rural dwellings.</li> </ul> </li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li><b>Low.</b></li> </ul>

##### Visual evaluation

<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>The nearest wind turbine is located approximately 11.4 km to the northwest of this location therefore views toward the Project from this location are distant.</li> <li>The Project is anticipated to result in a considerable change to this view and similar views experienced from other elevated and open parts of Mogumber Road West and nearby areas in the southeastern part of the LVIA Study Area. This is due to the potential for open views from these locations toward a very large number of wind turbines, which will be evident along the ridgeline in the background of the view.</li> </ul>
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**Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully**

	<ul style="list-style-type: none"> <li>• There is currently no wind infrastructure evident in this view, and the Project will introduce new large-scale infrastructure into the rural landscape with turbines evident across a portion of this view.</li> <li>• While views from the road are transient and typically experienced at speed, Similar views toward the Project will be experienced from nearby rural properties and other local roads throughout the southeastern part of the LVIA Study Area.</li> </ul>
Magnitude of change	<ul style="list-style-type: none"> <li>• <b>Medium.</b></li> </ul>
Significance of effect	<ul style="list-style-type: none"> <li>• <b>Minor to moderate and not significant.</b></li> </ul>

**8.3.13. Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River National Park**

**Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River – existing view National Park**

**Visual baseline assessment**



*Existing view from Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River – existing view National Park (~75° HFOV)*

Refer to **Figure 42** in Appendix 2 for appropriately scaled image.

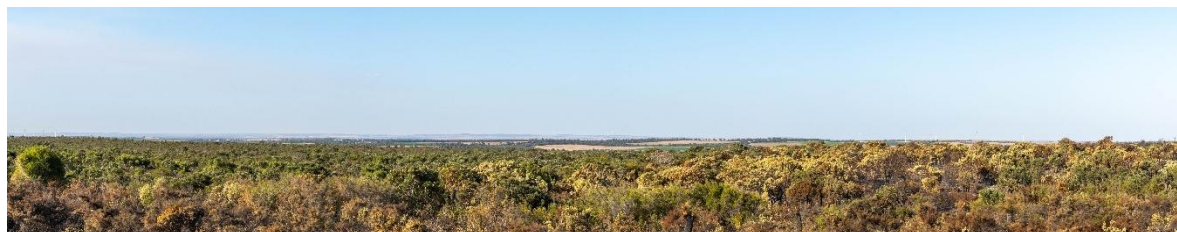
Location	<ul style="list-style-type: none"> <li>• 31°1'45.036" S 115°36'52.668" E</li> </ul>
Elevation	<ul style="list-style-type: none"> <li>• 95.9 m</li> </ul>
Description	<ul style="list-style-type: none"> <li>• Northeasterly view from Orange Springs Road providing an elevated, somewhat filtered, very distant view toward the Project.</li> <li>• Represents typical views of passing vehicles on Orange Springs Road and similar views that may be experienced from elevated parts of Moore River National Park (where vegetation does not restrict views toward the Project).</li> <li>• Also considered representative of similar views from nearby uninvolved rural properties and local roads located in the southern part of the LVIA Study Area.</li> <li>• The view has a mixed natural and rural character, which is strongly influenced by its location within Moore River National Park and the surrounding vegetation, which is typical of <i>LCT C: Forested Coastal Plain</i> and is considered to have high scenic amenity value. Rural landscapes associated with <i>LCT A: Rural and forested uplands</i> are evident in the background of the view.</li> <li>• Precedent infrastructure evident within this view includes road infrastructure, telecommunications infrastructure and rural dwellings. The existing OHTL corridor is also evident in the background of the view.</li> </ul>

Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River – existing view National Park	
	<ul style="list-style-type: none"> <li>Existing views toward Yandin Wind Farm from this location are restricted by vegetation adjacent the road.</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>Key visual receptors include: <ul style="list-style-type: none"> <li>An anticipated low to moderate number of receptors in vehicles travelling along Mogumber Road West (noting no AADT is available for this road).</li> <li>A low number of visitors to Moore River National Park, which does not have any formal recreation facilities.</li> <li>A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their properties and rural dwellings.</li> </ul> </li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li>At most, <b>medium</b> – reflective of that this viewpoint is surrounded by national park and may support up to a moderate number of road users.</li> </ul>
Visual evaluation	
<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>The nearest wind turbine is located approximately 16.2 km to the northeast of this location and therefore views toward the Project from this location are very distant.</li> <li>The Project is anticipated to result in at most, a noticeable perceptible change to this view and similar views experienced from other elevated and open parts of Orange Springs Road and nearby areas in the southern part of the LVIA Study Area. This is due to the potential for very distant views from these locations toward wind turbines, which will be evident along the ridgeline in the background of the view.</li> <li>There is currently no wind infrastructure evident in this view as Yandin Wind Farm is obscured by vegetation from this location. The Project will introduce new large-scale infrastructure into this view and additional wind infrastructure into other views where Yandin Wind Farm is evident.</li> <li>The number of wind turbines visible will vary depending on the screening effect of nearby vegetation. Very few wind turbines will be evident in this location due to vegetation adjacent the road.</li> <li>Views from the road are transient and typically experienced at speed, and will be experienced intermittently due to the screening effect of local undulating topography in this area.</li> <li>Similar views toward the Project will be experienced from nearby rural properties and other local roads throughout the southern part of the LVIA Study Area.</li> </ul>
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li>At most, <b>low</b>.</li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li><b>Minor to moderate and not significant.</b></li> </ul>

### 8.3.14. Viewpoint 14: Easterly views from Indian Ocean Drive and Nilgen Nature Reserve, Nilgen

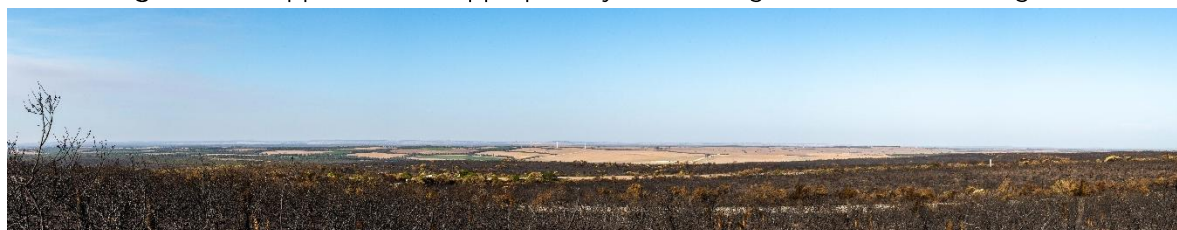
#### Viewpoint 14: Easterly views from Indian Ocean Drive and Nilgen Nature Reserve, Nilgen

##### Visual baseline assessment



*Existing view from Viewpoint 14A: Easterly view from Indian Ocean Drive roadside rest area, Nilgen (~100° HFoV)*

Refer to **Figure 43** in Appendix 2 for appropriately scaled image and ~75° HFoV image.



*Existing view from Viewpoint 14B: Easterly view from Nilgen Wildflower Walk near Nilgen Lookout, Nilgen (~100° HFoV)*

Refer to **Figure 44** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>• 30°54'49.5" S 115°22'5.124" E (14A)</li> <li>• 30°55'43.56" S 115°21'51.258" E (14B)</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>• 121.3 m (14A)</li> <li>• 162.1 m (14B)</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>• These viewpoints represent typical elevated and very distant views experienced by tourists and visitors travelling along Indian Ocean Drive and stopping at roadside rest areas and points of interest along this coastal tourist route, including Nilgen Nature Reserve.</li> <li>• Viewpoint 14A provides an easterly view from the shade shelter at the rest stop on Indian Ocean Drive, providing an open, very distant view toward the Project.</li> <li>• Viewpoint 14B provides a slightly more elevated, open and very distant easterly view from the Nilgen Wildflower Walk within Nilgen Nature Reserve. Due to its proximity to Nilgen Lookout, it is considered that viewpoint 14B is representative of worst case potential impacts on visitors accessing Nilgen Lookout (where the primary view is toward the coast).</li> <li>• These views are located in <i>LCT C: Forested Coastal Plain</i> and have a mixed natural and rural character, with rural landscapes associated with <i>LCT A: Rural and forested uplands</i> evident in the background. Vegetation in the area is considered to have high scenic amenity value and is typically low. Therefore, it does not significantly affect the availability of views across the surrounding</li> </ul>

Viewpoint 14: Easterly views from Indian Ocean Drive and Nilgen Nature Reserve, Nilgen	
	<p>landscape (noting that a very recent bushfire had passed through this area when the field survey was undertaken).</p> <ul style="list-style-type: none"> <li>• Precedent infrastructure evident within these view includes road infrastructure, wind turbines associated with West Hills Wind Farm and Yandin Wind Farm, OHTL towers and cables and other infrastructure typical of a sparsely settled rural and natural landscape. Karakin Wind Farm is also evident from viewpoint 14B (to the right of the view extent).</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ A moderate number of receptors in vehicles travelling along Indian Ocean Drive (AADT of up to 3,146, of which 13.0% to 27.6% are heavy vehicles) (Main Roads Western Australia, 2024), which is a State significant scenic route, who may experience transient views towards the Project.</li> <li>○ A low to moderate number of visitors stopping at the roadside rest area or visiting Nilgen Lookout (a signposted tourism destination on the highway) and the associated Nilgen Wildflower Walk.</li> </ul> </li> <li>• The presence of existing wind farm infrastructure evident in the midground and background of this view is considered to somewhat reduce the sensitivity of receptors in these locations to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li>• <b>High</b> - Indian Ocean Drive is promoted as the key tourism corridor in the State and region and is valued for the views it provides across the coastal landscape and this section of the road is identified as a significant viewing location.</li> </ul>
Visual evaluation	
<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>• The nearest wind turbine is located approximately 25.7 km and 26.3 km to the east-northeast of viewpoint 14A and 14B, respectively. Therefore views toward the Project from these locations and this elevated section of Indian Ocean Drive are very distant.</li> <li>• The Project is anticipated to result in, at most, a noticeable change to these views and similar views experienced from this section of Indian Ocean Drive due to very distant views toward a large number of wind turbines, which will be evident in the background of the view.</li> <li>• While wind turbines associated with other wind farms are already evident in the midground and background of this view, the Project will introduce additional large-scale infrastructure into the rural landscape that will increase the visibility of wind infrastructure from this key road route. However, at this distance, and due to the visual prominence of other existing wind turbines located closer to Indian Ocean Drive, it is anticipated that the Project would blend somewhat into the existing view. This would achieve the 'visible but blend within its setting' objective of the <i>Indian Ocean Drive Planning Guideline</i> (WAPC, 2014).</li> <li>• It is noted that while views from Indian Ocean Drive are transient and typically experienced at speed, this section of road includes two roadside rest areas in addition to the Nilgen Lookout and Nilgen Wildflower Walk.</li> </ul>
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li>• At most, <b>low</b>.</li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li>• <b>Minor to moderate and not significant.</b></li> </ul>

### 8.3.15. Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen

#### Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen

##### Visual baseline assessment



*Existing view from Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen (~100° HFoV)*

Refer to **Figure 45** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	30°57'29.442" S 115°24'34.086" E
<b>Elevation</b>	124.7 m
<b>Description</b>	<ul style="list-style-type: none"> <li>• Easterly view from Callistemon Loop within Ocean Farms estate, providing an elevated, open, very distant view toward the Project.</li> <li>• Represents typical views of nearby residents within Ocean Farms estate, and passing vehicles on Callistemon Loop, which are generally anticipated to be locals.</li> <li>• Also considered representative of similar views experienced from nearby uninvolved rural properties and other nearby roads such as Nilgen Road.</li> <li>• This viewpoint is located within <i>LCTH: Rural Living Estates</i> and has a strong rural character, influenced by the presence of scattered vegetation and isolated rural residential dwellings.</li> <li>• Precedent infrastructure evident within these view includes road infrastructure, wind turbines associated with Yandin Wind Farm, OHTL infrastructure, telecommunications infrastructure, fencing and rural dwellings.</li> </ul>
<b>Key visual receptors</b>	<ul style="list-style-type: none"> <li>• Key visual receptors include: <ul style="list-style-type: none"> <li>○ A low number of receptors in vehicles travelling along Callistemon Loop, which is a local road within the Ocean Farms estate.</li> <li>○ A low number of nearby permanent residential receptors who may experience similar views from their dwellings within the estate.</li> </ul> </li> <li>• The presence of existing wind farm infrastructure and OHTL infrastructure evident in the midground and background of this view is considered to marginally reduce the sensitivity of receptors in these locations to further wind farm development associated with the Project.</li> </ul>
<b>Visual sensitivity</b>	<ul style="list-style-type: none"> <li>• At most, <b>medium</b> – due to the number of existing and potential future residential properties in this rural living estate.</li> </ul>
<b>Visual evaluation</b>	
<b>Magnitude of change assessment</b>	<ul style="list-style-type: none"> <li>• The nearest wind turbine is located approximately 23.1 km to the northeast of viewpoint and therefore views toward the Project from this locations are very distant.</li> </ul>

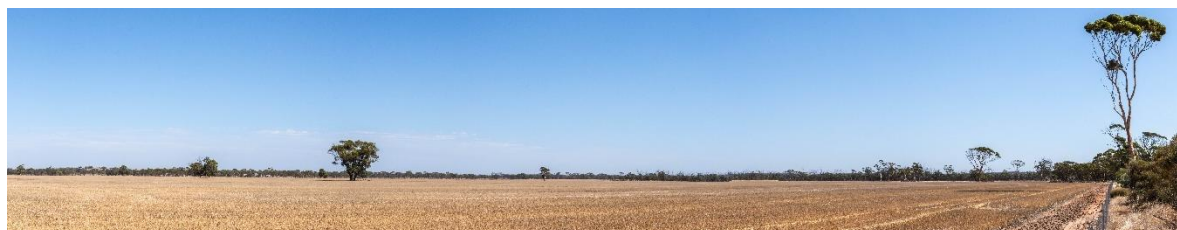
**Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen**

	<ul style="list-style-type: none"> <li>The Project is anticipated to result in at most, a noticeable change to this view due to very distant views toward a large number of wind turbines, which will be evident in the background of the view.</li> <li>While wind turbines associated with Yandin Wind Farm are already evident in the background of this view, the Project will introduce additional large-scale infrastructure into the rural landscape. However, at this distance, and due to the presence of existing wind turbines, it is anticipated that the Project would blend somewhat into the existing view.</li> </ul>
<b>Magnitude of change</b>	<ul style="list-style-type: none"> <li>At most, low.</li> </ul>
<b>Significance of effect</b>	<ul style="list-style-type: none"> <li>Minor to moderate and not significant.</li> </ul>

**8.3.16. Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton**

**Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton**

**Visual baseline assessment**



*Existing view from Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton (-100° HFoV)*

Refer to **Figure 46** in Appendix 2 for appropriately scaled image and ~75° HFoV image.

<b>Location</b>	<ul style="list-style-type: none"> <li>30°43'1.098" S 116°1'23.946" E</li> </ul>
<b>Elevation</b>	<ul style="list-style-type: none"> <li>205.2 m</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>Westerly view from Barberton West Road near intersection with Bindoon-Moora Road providing an open, very distant view toward the Project.</li> <li>Represents typical views of passing vehicles on Barberton West Road and also considered representative of similar views that would be obtained from nearby sections of Bindoon-Moora Road (AADT of up to 595, of which 14.3% are heavy vehicles) (Main Roads Western Australia, 2024).</li> <li>The view has an open and flat rural character consistent with plains within <i>LCT A: Rural and forested uplands</i> with limited distinctive visual features.</li> <li>Precedent infrastructure evident within this view includes road infrastructure, rural fencing and other farm infrastructure.</li> <li>Views toward Yandin Wind Farm from this location are obscured by vegetation. However, glimpsed views of wind turbine blade tips are possible when travelling along nearby sections of Bindoon-Moora Road.</li> </ul>

Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton	
Key visual receptors	<ul style="list-style-type: none"> <li>• Key visual receptors include:               <ul style="list-style-type: none"> <li>○ A low number of receptors in vehicles travelling along Barberton West Road and the nearby Bindoon-Moora Road.</li> <li>○ A low number of nearby uninvolved rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.</li> </ul> </li> </ul>
Visual sensitivity	<ul style="list-style-type: none"> <li>• At most, <b>medium</b> – in recognition that Bindoon-Moora Road is a state controlled road with moderate traffic volumes.</li> </ul>
Visual evaluation	
Magnitude of change assessment	<ul style="list-style-type: none"> <li>• The nearest wind turbine is located approximately 26.5 km to the west-southwest of viewpoint and therefore views toward the Project from this location are very distant.</li> <li>• The Project is anticipated to result in, at most, a barely perceptible change to this view due to very distant views toward wind turbine blade tips, which may be evident in the background of the view where vegetation does not restrict the visibility of the Project.</li> <li>• While the Project will introduce additional large-scale infrastructure into the rural landscape, similar viewing experiences toward existing wind turbines associated with Yandin Wind Farm are already experienced from Bindoon-Moora Road. Due to the distance of these views and the presence of vegetation in this area, it is anticipated that the Project would blend somewhat into the existing view.</li> </ul>
Magnitude of change	<ul style="list-style-type: none"> <li>• <b>Negligible.</b></li> </ul>
Significance of effect	<ul style="list-style-type: none"> <li>• <b>Minor and not significant.</b></li> </ul>

## 8.4. Summary of visual impact assessment

A summary of the baseline analysis and overall likely visual impact anticipated during the operation of the Project (as described in Section 8.3: Viewpoint assessment) associated with the presence of wind turbines and ancillary infrastructure is presented in Table 23.

*Table 23: Summary of visual impact assessment*

Viewpoint	Sensitivity	Magnitude of change	Significance of effect
Viewpoint 1: Northeasterly view from the Brand Highway, Mimegarra	Medium	High	Moderate to major (significant)
Viewpoint 2: Southeasterly view from the Brand Highway, Yathroo	Medium	Medium	Moderate (not significant)
Viewpoint 3A: Southeasterly view from Yandin Lookout carpark, Dandaragan	Medium	Medium	Moderate (not significant)
Viewpoint 3B: Southwesterly view from Yandin Lookout, Dandaragan	High	Low	Moderate (not significant)
Viewpoint 4: Southeasterly view from Dandaragan Road near Yathroo Homestead, Yathroo	Low	High	Moderate (not significant)
Viewpoint 5A: Southerly view from Stockyard Road near intersection with Dandaragan Road, Yathroo	Low	High	Moderate (not significant)
Viewpoint 5B: Northerly view from Stockyard Road near intersection with Dandaragan Road, Yathroo	Low	High	Moderate (not significant)
Viewpoint 6: Northerly view from Dandaragan Road near intersection with Wayler Wayler Road, Yathroo	Low	High	Moderate (not significant)
Viewpoint 7: Northerly view from Dandaragan Road between Gillingara Road and Rowes Road, Yathroo	Low	High	Moderate (not significant)
Viewpoint 8: Westerly view from Rowes Road near intersection of Scenic Drive, Yathroo	Low	High	Moderate (not significant)
Viewpoint 9A: Southerly view from Dandaragan Community Recreation Centre, Dandaragan	High	Low	Moderate (not significant)
Viewpoint 9B: Southerly view from end of Camm Road, Dandaragan	Medium	Low	Minor to moderate (not significant)
Viewpoint 9C: Southerly view from Dandaragan Road, Dandaragan	Medium	Low	Minor to moderate (not significant)
Viewpoint 10: Southwesterly view from Rowes Road, Dandaragan	Low	Medium	Minor to moderate (not significant)
Viewpoint 11: Northwesterly view from Boundary Road, Yathroo	Low	Low	Minor (not significant)

Yathroo Wind Farm  
Landscape and Visual Impact Assessment

Viewpoint	Sensitivity	Magnitude of change	Significance of effect
Viewpoint 12: Northwesterly view from Mogumber Road West, Red Gully	Low	Medium	Minor to moderate (not significant)
Viewpoint 13: Northeasterly view from Orange Springs Road, Moore River – existing view National Park	Medium	Low	Minor to moderate (not significant)
Viewpoint 14A: Easterly view from Indian Ocean Drive roadside rest area, Nilgen	High	Low	Moderate (not significant)
Viewpoint 14B: Easterly view from Nilgen Wildflower Walk near Nilgen Lookout, Nilgen	High	Low	Moderate (not significant)
Viewpoint 15: Easterly view from Callistemon Loop within Ocean Farms, Nilgen	Medium	Low	Minor to moderate (not significant)
Viewpoint 16: Westerly view from Barberton West Road near intersection of Bindoon-Moora Road, Barberton	Medium	Negligible	Minor (not significant)

## 9. Construction and decommissioning assessment

### 9.1. Construction / installation impacts

The wind farm infrastructure will be located within *LCT A: Rural and forested uplands* within *LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands*. The area surrounding the Site already supports existing wind farm infrastructure.

Based on the potential construction phase elements identified in **Section 4.1: Key sources of potential impact**, there are likely to be short term (approximately 24 months) changes and effects to the landscape character, views and visual amenity during the construction of the Project. This includes transportation of the crew between activity Sites and nearby towns and the presence of large-scale machinery constructing and installing the Project.

Due to the undulating nature of parts of LCT A, construction activities (including excavation, trenching, earthmoving, vegetation clearance/trimming, installing the wind turbines by crane and temporary lighting) are considered likely to be evident.

Construction impacts are most likely to be experienced by a relatively small number of nearby residents on large rural lots and rural workers in close proximity to the Project and/or by those travelling along roads that traverse the Site or are located adjacent to its boundary (e.g. The Brand Highway and Dandaragan Road).

It is anticipated that the construction activity on Site would generally be less perceptible than operational impacts from settlements within the LVIA Study Area due to their distance from the Project, with the exception of the potential for views toward the installation of wind turbines. However, it is likely that the transient presence of construction workers, plant and the transport of project materials and components will be evident within these areas – noting that many of these towns support existing construction workforce populations. These temporal impacts may also be evident within other towns beyond the 30 km LVIA Study Area.

Because the effects of construction activities are temporary, it is considered that construction impacts are of lower potential significance than those effects identified in **Section 7.2: Landscape character assessment** and **Section 8.3: Viewpoint assessment**.

### 9.2. Decommissioning impacts.

At the end of the operational lifetime of the Project (approximately 25 - 30 years) it is assumed the energy hub infrastructure will be decommissioned and the Site will be rehabilitated, returning the landscape character largely to its present condition.

It is anticipated that the impacts that result from decommissioning of the Project will be very similar to those during the construction phase over a duration of approximately 14 months.

Accordingly, there are likely to be short term changes and effects on the landscape character, views, and visual amenity because of the presence of construction crews and large-scale machinery removing the Project components and rehabilitating the affected Sites (e.g., localised regrading of landform, spreading topsoil and seeds). Most above-ground infrastructure apart from roads (which are left to benefit the farmers) will be removed (e.g., all turbines, transmission lines, etc). The land will then be rehabilitated in

line with development permit conditions and specific landowner agreements. Some infrastructure may remain in-situ depending on landowner preferences.

Access tracks are to be rehabilitated back to farming use or kept on advice of the landowner. Therefore it is expected that following decommissioning, the development would result in a low impact on the appearance of the surface landscape in the long term.

## 10. Cumulative assessment

The aim of the cumulative LVIA is to describe and assess the ways in which the Project may have additional landscape and visual impacts when considered together with other large-scale projects within or proposed within the wider landscape context of the Site.

### 10.1. Projects considered in cumulative assessment

Based on the methodology described in **Section 3.10: Cumulative landscape and visual impact assessment**, a desktop review was undertaken to identify potential projects for consideration in the cumulative impact assessment. This included a search of Referred Significant Proposals and online public materials. As a result of this review, the following large-scale projects, identified and described in **Table 24** and shown on **Figure 12**, are considered in this assessment. Existing wind farm developments within the LVIA Study Area, which form part of the baseline assessment, have also been acknowledged where relevant to consideration of cumulative effects.

*Table 24: Projects for consideration in cumulative impact assessment*

Project / Proponent	Location	Description	Project Status	Timing
Waddi Wind Farm	~15 km northwest of Dandaragan	108 MW wind farm comprising up to 18 wind turbines with a blade tip height of 220 m	Approved	Anticipated to be constructed in late 2025 /2026
Waddi Solar Farm	~15 km northwest of Dandaragan	40 MW solar farm	Approved	
Marri Wind Farm (Alinta Energy)	Near Regans Ford	550 MW wind farm with up to 81 wind turbines	In development	Environmental approvals and DA to be submitted in 2025 with Construction anticipated to commence in 2026
Grevillea Wind Farm (Green Wind Renewables and Aula Energy)	Near Koojan	700 MW wind farm	In development	TBC - no information currently available.
Parron Wind Farm (Atmos Renewables and Parron Developments)	8 km northwest of Badgingarra	490 MW wind farm comprising up to 79 wind turbines	In development	Construction to commence in 2026 with wind farm operational in 2028
Westpork Moora - Agaton Road Wind Farm	898 Agaton Road, Dandaragan	4 MW wind farm comprising 8 wind turbines with a blade tip height of 86 m	In development	TBC - no information currently available.

## 10.2. Cumulative landscape and visual impact assessment

When considering cumulative impacts associated with this Project, it is important to recognise that numerous existing wind farm developments and other renewable energy projects are already operational within the LVIA Study Area and broader region. While wind farms may be considered an existing component of this rural landscape, due to their scale (and to avoid subjective judgement of whether the presence of wind farms is considered as a positive or negative by the local community and visitor to the region), it is considered that other wind farms have the greatest potential to result in cumulative impacts within the rural landscape context, should all these projects proceed.

Five proposed wind farm projects have been identified within or in close proximity of the LVIA Study Area. These wind farms are either approved or in development with proponents currently undertaking preliminary assessments and community engagement activities.

In the event that all proposed wind farm projects are developed, it is anticipated that *combined* cumulative impacts between the Project and these wind farms would be evident. As a *combined* cumulative impact relates to a static viewpoint (assumed 120 degree field of view), *combined* cumulative impacts are anticipated to be most evident between the Project and the proposed Marri Wind Farm (noting that no approvals have yet been lodged for this project), as well as the existing Yandin Wind Farm due to its close proximity to the Site. For example, scenarios where turbines associated with both the existing Yandin Wind Farm, the Project and the potential Marri Wind Farm may be visible in a single view experienced while travelling along the Brand Highway. As Yandin Wind Farm is located in close proximity to the Project (with the nearest turbines of each scheme 630 m apart), there is the potential for significant *combined* cumulative impacts where close views toward the Project and Yandin Wind Farm will be experienced. The potential for other significant *combined* cumulative impacts would need to be confirmed should the Marri Wind Farm progress and once the layout has been developed. No significant *combined* cumulative impacts are anticipated due to other proposed wind and solar developments due to their distance from the Project.

*Successive impacts*, that is views where a receptor can view both of the described wind farms from one viewpoint (a 360° view), are also likely. Similar to the *combined impacts* identified, the potential for significant successive impacts is anticipated to be experienced from locations where close views toward both the Project, the proposed Marri Wind Farm and existing Yandin Wind Farm are possible. Therefore, significant *successive impacts* are most likely to be experienced from roads that traverse these project areas (such as the Brand Highway and Dandaragan Road).

With respect to the proposed Waddi Solar Farm, it is noted that while solar farms represent large-scale built interventions within the landscape, the form of built infrastructure is generally lower and typically less visible compared to wind farm projects, with the exception of any project views obtained from elevated viewpoints. Therefore, *combined* and *sequential* impacts are unlikely between the Project and the Waddi Solar Farm, except for a number of limited locations located in close proximity to solar farm infrastructure. Due to the distance of the solar farm from the Project, it is unlikely that there will be significant cumulative effects associated with the Project and the solar farm.

*Sequential impacts* comprising views of both wind farms and solar farms are highly likely, particularly given the network of highways and key roads around the LVIA Study Area and

the existing availability of views toward existing wind projects in the area. For example, it is possible that a motorist travelling along the Indian Ocean Drive, Brand Highway or Dandaragan Road may experience views toward a combination of these projects. While the layouts are not currently available for this project, it is assumed that there is the potential for dominant significant *sequential impacts* on the Brand Highway, particularly in recognition of the existing proximity of wind turbines associated with Yandin Wind Farm to this route. However, this would need to be confirmed once the layouts are developed. In addition, it is noted that for some viewers the intensification of renewable energy development in this area will be perceived negatively, whereas for some viewers driving through the landscape and experiencing views of the wind farms while travelling along the highway may be seen as a point of interest (as is already reflected in some tourism information).

In summary, due to the large number of existing and proposed renewable energy developments within the LVIA Study Area and broader region, there is the potential for significant cumulative impacts should all these projects proceed (including with consideration of required enabling infrastructure for these projects such as OHTL connections and substations). This is considered particularly relevant to the availability of close views from the Brand Highway toward wind turbines and transmission infrastructure.

If these projects proceed, while it would not be introducing new infrastructure into the area, there is the potential for the landscape to appear more intensively developed. This would be experienced in sequential views when driving around the wider area, which may further affect the perception of the rural character of the region that has already been modified by wind developments. However, the local planning schemes reviewed are supportive of renewable energy developments provided impacts on sensitive landscapes and visual values are considered and managed.

## 11. Mitigation measures

This section outlines the standard operating procedures and other factors considered to reduce and manage the impact of a wind farm on landscape character and visual amenity. The mitigation framework seeks, as a first priority, to minimise adverse landscape and visual impacts through careful design and siting of infrastructure then, secondly, to implement detailed design tailored to the specific location to manage any adverse impacts identified. The mitigation framework focusses on managing the impact of construction activities, managing the visual amenity of nearby residents and viewers most adversely affected by the Project (including through the consultation process), post construction site rehabilitation activities (e.g., reinstating temporary access roads and storage areas), and providing advice for the decommissioning of the Project.

Due to the size of the proposed wind turbines (up to 261 m), gently undulating landform and typically cleared Site character together with the often low height of vegetation within the LVIA Study Area, it is not considered typically possible to fully 'screen' or 'hide' all the wind turbines or associated infrastructure within the landscape. In addition, given that the wind turbines are potentially visible within 30 – 40 km or beyond (depending on weather conditions), the proposition of providing and maintaining off site planting to manage all views of the Project is not practical. However, vegetation can contribute to reducing the extent of wind turbine structures visible in some situations, for example, the effect of dense, taller roadside shelterbelts on reducing the availability of open views experienced from passing vehicles on roads. It should be noted that screening effects to mitigate tall structures such as 261 m wind turbines are only effective where features providing screening (e.g., trees and tall shrubs) are located close to the viewer (or visual receptor). Screening features located at a distance from the viewer will be less effective in containing views i.e., wind turbines of this size would be visible above the treetops.

The measures outlined below could assist in providing a more harmonious appearance to the Project overall, particularly in relation to the most sensitive receptors identified in **Section 8.2: Visual audiences and viewpoint selection**, comprising rural residential properties lying close to the Project, and receptors travelling along the Brand Highway, Indian Ocean Drive and Dandaragan Way and residential receptors located within Dandaragan.

Several mitigation measures are considered as 'inherent' mitigation measures the Neoen will implement as part of the Project design, construction and decommissioning. These are outlined in **Table 25**. Additional opportunities identified to assist in the integration of the Project into the rural landscape are provided in **Table 26**.

*Table 25: Inherent mitigation measures to minimise landscape and visual effects*

Inherent mitigation category	Description of inherent measures to minimise landscape and visual effects
<b>Facilities siting and design – detailed design</b>	<ul style="list-style-type: none"> <li>• Facilities have been designed to minimise impact on the current land use, including minimising land take and loss of productive agricultural land wherever practicable.</li> <li>• Facilities have been designed and located to minimise tree and other vegetation removal where practicable, particularly vegetation identified as having MNES and MSES value or that contributes to roadside vegetation buffers (e.g. provision of new site access roads). Vegetation to be retained to be protected in accordance with AS4970-2009 (described in Section 5.1.3).</li> <li>• Laydown areas and permanent ancillary infrastructure (e.g. substations and maintenance buildings) have been located away from key road routes and public areas as far as practically possible.</li> <li>• A semi-matt finish on the wind turbine towers, nacelles and blades is to be used to avoid potential visual impacts from blade glint caused by reflection of the sun.</li> <li>• Existing access tracks have been utilised where possible. Where new access tracks are required, these are typically collocated with existing fence lines and located in accordance with landowner recommendations. New access tracks are designed to follow the natural line of the landscape wherever practicable to reduce visibility.</li> <li>• Access roads would be tidily maintained and include gates and cattle grids where necessary in accordance with landowner requirements. These will be in keeping with the existing rural landscape.</li> <li>• After-dark construction lighting to be controlled to minimise effects on sensitive visual receptors including potential impacts due to light spill and glare where reasonably practical.</li> </ul>
<b>Landscape strategy to hide / screen the substations and other elements</b>	<ul style="list-style-type: none"> <li>• During the detailed design of the Project, landscape elements (landform, vegetation, hard elements as appropriate) that will interrupt sightlines from particular sensitive vantage points may be considered where a significant visual impact is identified; particularly nearby residences (following individual consultation with affected landowners). For example, shelterbelt planting adjacent to the property line of an affected residence or within the Site.</li> <li>• Neoen is currently engaging with affected near neighbours concerned about visual impacts and has private landowner visualisations have been prepared to assist concerned near neighbours to understand the potential visual impact of the Project on their properties.</li> <li>• Neoen is working with affected near neighbours to prepare landscaping plans to assist in the mitigation of potential Project impacts and screening of the Project.</li> </ul>
<b>Construction management and rehabilitation</b>	<ul style="list-style-type: none"> <li>• A construction environmental management plan to has been developed works will be undertaken in accordance with the mitigation measures in it.</li> </ul>

**Table 26: Additional recommendations to minimise landscape and visual effects and support the appreciation of visual values within the Project area**

Proposed mitigation category	Description of measures to minimise landscape and visual effects
<b>Activities undertaken during construction and operation</b>	
<b>Landscape strategy to hide / screen the substations and other elements</b>	<ul style="list-style-type: none"> <li>• During the detailed design of the Project, consider provision of vegetation planning in the following locations (subject to landowner agreement and negotiations) to assist in the integration of the Project into the surrounding landscape:               <ul style="list-style-type: none"> <li>○ Surrounding proposed Western Power switchyards, particularly with regard to potential views toward these facilities from the Brand Highway.</li> <li>○ Surrounding the substation and other permanent buildings in the vicinity of Stockyard Road, with particularly consideration of views toward these facilities from Dandaragan Road.</li> <li>○ Surrounding other proposed permanent infrastructure (such as operations and maintenance buildings) where visible from a public road.</li> </ul> </li> <li>• Guidance contained in the <i>Indian Ocean Drive Planning Guideline Supplementary information - suitable species for roadside vegetation screening</i> (Department of Planning, 2014) should be considered in locations where roadside vegetation screening is considered appropriate to assist in integrating the Project into the landscape setting.</li> <li>• Any new tree and shrub planting, proposed as part of any detailed landscape design for the Project will help integrate each component into the surrounding landscape. Any screening to consist of mixed plants of local provenance including some fast-growing species, as appropriate to the local landscape character and existing vegetation communities.</li> </ul>
<b>Legacy opportunities</b>	<ul style="list-style-type: none"> <li>• The Proponent may consider legacy opportunities such as scenic viewing areas (similar to those provided for Yandin Wind Farm) in recognition that the wind farm will contribute to the intensity of wind development evident in the area and may be of interest to tourists and visitors to the area.</li> </ul>

## 12. Residual impacts

Residual impacts relate to any changes in the overall level of effect for potential impacts after the implementation of mitigation. Although a number of reasonable mitigation measures are suggested that may be applied to help reduce the extent of the Project's effect on landscape character and visual amenity, such mitigation measures are considered unlikely to alter the significance of the level of landscape effect assessed in **Section 7: Landscape assessment** or visual effect assessed in **Section 8: Visual assessment**. Even the most thorough mitigation strategy has limited potential to screen views of 261 m high wind turbines, even if this were to be a desirable outcome, particularly within this landscape context where vegetation is often low in height.

Subsequently, the residual impact is considered to be as per those impacts identified in **Table 20** and **Table 23** above, and in the conclusions below.

## 13. Conclusions and recommendations

This LVIA has used a range of desk-based and field-based analysis techniques to assess the impact of the Project on the landscape and visual character of the LVIA Study Area in accordance with the requirements of the SPP 2050 and best practice techniques, as required by *Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design* (WAPC, 2007).

The potential for the Project to result in impacts on MNES noted as having aesthetic value (including TECs and Lake Guraga) and 'significant landforms', has been considered. The *Banksia Woodlands of the Swan Coastal Plain* TEC which is acknowledged for its contribution to landscape amenity and scenic quality (DCCEEW, 2016) was the only TEC identified within the Site. The Project and current wind turbine layout avoids direct impacts on areas supporting this TEC, with the exception of a small area of degraded TEC adjacent to an existing road that may be cleared to provide access from the Brand Highway. No 'significant landforms' considered to meet the EPA's criteria are anticipated to occur within the Site or to be directly impacted by wind turbine locations. Indirect impacts on the visual setting of Lake Guraga are likely to be experienced based on the findings of VAM, however, it is anticipated that a very low number of receptors access this lake.

The assessment has also considered scenic amenity values and scenic amenity management objectives identified in relevant State, regional and local planning documents and *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994). These documents acknowledge that significant landscape and visual values existing within the LVIA Study Area and are generally supportive of the development of renewable energy projects and protection of these aesthetic values that are important to tourism.

Wind farms are vertical and have the unique characteristic of movement. Individually or in groups, there are few landscapes in which wind farms will not form a distinctive element. Due to their scale, they are also difficult (virtually impossible) to conceal, even if this were desirable, and are often highly visible. Accordingly, *all* wind farms will unavoidably result in some significant changes to the landscape and visual resource (character and views) due to their size, prominence and/or location.

Existing wind farms have introduced large-scale elements that have modified the landscape character of the LVIA Study Area. Views are currently experienced toward Yandin Wind Farm, West Hills Wind Farm and Karakin Wind Farm throughout much of the LVIA Study Area. This includes from key tourist drives and destinations, such as Indian Ocean Drive, the Brand Highway, the Dandaragan Way, Nilgen Lookout, Yandin Lookout and the Nilgen Wildflower Walk and from the town of Dandaragan.

While wind development is therefore considered to be a relatively common existing component of the LVIA Study Area, the anticipated landscape and visual impacts of the Project still need to be considered in parallel with other matters, such as:

- The limited locational flexibility of wind farms (e.g., requirement of windy locations, feasible connection to the grid and/ or supply network)
- the need to find a balance between maximising energy generation whilst minimising impacts (i.e., siting can be influenced by non-operational factors, including local landscape characteristics).

In undertaking the assessment of visual impacts for the Project, it is also necessary to acknowledge that varying attitudes to wind energy developments and their associated impacts are expressed by different individuals and constituencies. While some may consider the provision of additional wind infrastructure as a positive, others may be concerned about the visual impact on their properties or the cumulative impact of wind developments in the region.

### 13.1. Landscape impact assessment

The capacity of a landscape to accommodate wind farm development depends on the degree of impact the development will have on the existing character of the landscape; and the extent to which this impact can be modified and reduced by design (for example layout, component design and landscaping).

The landscape character assessment has defined nine LCTs within the LVIA Study Area in recognition of the diversity of landscapes in the area. Only two LCTs are anticipated to be directly impacted by the Project, *LCT A: Rural and forested uplands (LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands)* and *LCT I: Major Watercourses (LCA I9: Caren Caren Brook)*.

LCT A already supports wind farm infrastructure and is considered to be large-scale rural and forested landscape with some capacity to absorb impacts associated with the Project. Reflective of this, the sensitivity of LCT A to wind farm development varies. Areas supporting landscape features acknowledged as having high scenic value (such as the vegetated and unique landscape surrounding Yandin Lookout) are considered to have a high sensitivity, while areas considered to be more representative of the typical rural character of this LCT (including areas within the Site) and areas supporting existing wind farm development are considered to have a medium or low sensitivity, respectively.

Impacts on LCT I relate to direct, highly localised impacts to two sections of Caren Caren Brook associated with the construction of access tracks and the reticulation network, which would result in the localised removal of riparian vegetation within the construction footprint. It is also noted that targeted rehabilitation will be undertaken within the areas required for construction, reducing the permanent extent of vegetation clearing.

The landscape impact assessment has concluded that there would be:

- Direct **moderate, not significant** impacts on LCT A (*LCA A1: Central Coast and Midlands Wheatbelt Rural and Forested Uplands*) due to the significant influence of wind turbines on localised parts of this broad-scale rural landscape.
- Direct, **minor, not significant** impact on highly localised parts of LCT I (*LCA I9: Caren Caren Brook*) within the Site to accommodate access tracks.

No direct significant impacts have been identified on other LCTs within the LVIA Study Area as they are not located within the project footprint. Any impacts on these areas would be indirect.

### 13.2. Visual impact assessment

The visual assessment has considered the impact of the Project on key visual receptor audiences within the LVIA Study Area, which, with the exception of settlements, is generally sparsely settled. The introduction of new wind turbines and associated ancillary infrastructure at the Site will inevitably change views experienced by people living in,

working in and visiting this area and the surrounding landscape. However, it is acknowledged that wind infrastructure is already present in the area.

The VAM indicates that views of wind turbines would be theoretically visible throughout large parts of the LVIA Study Area and the visibility of the Project is largely influenced by the undulating terrain, which provides vantage points and opportunities for long distance views toward the Site, and the distance from the Project. For example, the Project is not visible from the coastal settlement of Lancelin due to the topography. However, as determined through the field assessment, the real visibility of the Project is often considerably reduced by the presence of local screening elements such as vegetation and built form within settlements. As such, it is considered that in many instances the actual visibility of the Project would be far less than indicated by the modelling (e.g. no clear views from Moora toward the Project were identified during field survey due to vegetation and built form).

The potential for views within 30 km of the Site was considered and sixteen viewpoints were selected to represent the views of identified receptors including:

- Residents living in and visitors to the rural town of Dandaragan
- Residents living in the Ocean Farms rural living estate in the locality of Nilgen
- Residents living on rural properties within and surrounding the Site
- Farmers and other people working in the rural landscape around the Site
- Recreational users accessing scenic lookouts such as Yandin Lookout and Nilgen Lookout and undertaking walking trails such as the Nilgen Wildflower Walk.
- Motorists (including tourists) using roads within the LVIA Study Area including Indian Ocean Drive, Brand Highway, Dandaragan Road (Dandaragan Way scenic route), Stockyard Road, Rowes Road, Boundary Road, Mogumber Road West, Orange Springs Road and Barberton Road West (considered representative of Bindoon-Moora Road).

The Project is not anticipated to be visible from Lancelin as indicated by the VAM. No representative viewpoints were included from Lancelin, Moora, Regans Ford, Cataby or Koojan as it is not considered that views toward the Project are likely from these locations due to the distance of these locations from the Project and the presence of intervening topography and vegetation. Should distant, filtered, views toward the Project be evident from these locations, it is anticipated that these would be barely perceptible and **not significant**.

The visual impact assessment has concluded that there would be:

- **Moderate to Major, Significant**, impacts on passing motorists on a small section of the Brand Highway (Viewpoint 1) where it passes through the Site and very close views toward wind turbines are possible. While this is considered to represent a significant impact based on the LVIA method, it is acknowledged that existing wind turbines associated with the Yandin Wind Farm are already visible from nearby sections of the Brand Highway (with wind turbines located 2 km from the highway at their nearest point).

All other visual impacts are considered to be **not significant**, including:

- **Moderate, Not Significant**, impacts on:
  - Other more distant views from the Brand Highway (Viewpoint 2)

- Views from Yandin Lookout and the adjacent carpark area (Viewpoint 3A and 3B)
- Views from local roads that traverse or area located in close proximity to the Site including Stockyard Road (Viewpoint 5A and 5B), other parts of Dandaragan Road (Viewpoint 4, Viewpoint 6 and Viewpoint 7) and Rowes Road (Viewpoint 8)
- Views from the Dandaragan Community Recreation Centre (Viewpoint 9A)
- Views from Indian Ocean Drive and associated rest areas, including panoramic views experienced from the Nilgen area (Viewpoint 14A)
- Views from Nilgen Lookout and the Nilgen Wildflower Walk (Viewpoint 14B).
- **Minor to moderate, Not Significant**, impacts on:
  - Views from other areas within the rural settlement of Dandaragan (Viewpoint 9B and 9C)
  - Views from other local roads including Rowes Road (Viewpoint 10), Mogumber Road (viewpoint 12) and Orange Springs Road (Viewpoint 13), which facilitate low to moderate volumes of traffic
  - Rural residents within Ocean Farms estate (Viewpoint 15).
- **Minor, Not Significant**, impacts on:
  - Very distant views experienced from Boundary Road (Viewpoint 11) and Barberton West Road, which is representative of similar anticipated impacts on Bindoon-Moora Road (Viewpoint 16).

### 13.3. Conclusions

In comparison with other, well-established, forms of development in the rural landscape (e.g., associated with arable farming and grazing industries), wind turbines in most parts of Australia are still relatively unfamiliar, prominent elements. However, there are numerous existing wind farm developments within the LVIA Study Area and, as such, it is considered that wind infrastructure is a relatively common component of this already modified landscape.

No significant effects on landscape character values have been identified. While Project infrastructure will have direct localised impacts on one of the identified LCT (*LCT A: Rural and forested uplands (Central Coast and Midlands Wheatbelt Rural and Forested Uplands)*) this LCT already supports wind farm infrastructure.

With regards to visual impacts, it is considered that the proposed 261 m high wind turbines will be visible throughout large parts of the LVIA Study Area, due to their scale and the gently undulating and typically open visual character of the Site where the wind farm is proposed.

The visual assessment has identified that significant effects are only anticipated for one of the selected sixteen representative viewpoints. This relates to close-range views experienced by passing motorists travelling along the Brand Highway (which is a State significant scenic route) However, it is acknowledged that wind turbines are already visible from the Brand Highway, with turbines associated with the existing Yandin Wind Farm visible from this section and nearby parts of the highway.

The visual impacts on very distant views from Indian Ocean Drive toward the Project were identified as a key consideration. However, due to the distance of the Project from this key road corridor and the presence of other wind farm developments located closer to the

road, it is considered that the Project would blend somewhat into the existing view and therefore achieve the 'visible but blend within its setting' objective of the *Indian Ocean Drive Planning Guideline* (WAPC, 2014).

No significant impacts on views from settlements or other key recreation and tourism facilities within the LVIA Study Area have been identified. However, the town of Dandaragan, which is already impacted by the Yandin Wind Farm located in close proximity to the town, will experience moderately distant views toward the Project that will be evident in the background of views to the south from the town.

Due to the presence of existing and numerous proposed wind farms and solar farms in the LVIA Study Area and broader region, there is the potential for cumulative impacts. The potential for significant cumulative effects is considered to be likely should all identified potential wind farms be developed, with significant cumulative impacts most likely to be experienced from the Brand Highway where close views toward wind turbines associated with numerous projects will be possible for several kilometres. However, these cumulative effects need to be considered with regard to the existing conditions, with several operations wind farms already in the area.

Mitigation of identified impacts has been considered. It is acknowledged that completely screening views of 261 m high wind turbines is not generally possible, even if this were to be a desirable outcome. However, opportunities to enhance the integration of the wind farm into the landscape have been identified and described. Guidance contained in the *Indian Ocean Drive Planning Guideline Supplementary information - suitable species for roadside vegetation screening* (Department of Planning, 2014) should be considered in locations where roadside vegetation screening is considered appropriate to assist in integrating the Project into the landscape setting.

No turbine lighting is proposed for this Project and ancillary security lighting associated with infrastructure/compounds would be minimal. Lighting proposed as part of the Project, should consider the relevant requirements of *AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2023) - noting that public lighting and lighting for aviation safety is excluded from the standard as it is provided in the interest of public safety and security.

In conclusion, wind turbines associated with the Project will be clearly visible against the backdrop of low rolling hills in some views within the LVIA Study Area and will introduce additional wind infrastructure in this area, which has already been modified by other wind farm developments. Viewers will respond in different ways to the change. Landscape appreciation is relative, and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences. Some viewers may view the change as positive or neutral, whereas others will consider the change to be a negative impact.

The key issues identified in this LVIA are the localised changes in the character of the landscape within the Site boundaries and visual impacts upon receptors, including individual rural properties and road users nearest to the Project. Impacts are especially evident within around 2.5 km of the nearest wind turbine, where the wind turbines would have the greatest influence on the visual character of the landscape. This is particularly critical where views toward the Project will result in a significant visual impact, which relates to two representative viewpoint locations that provide very close views toward the Project from the Brand Highway and Dandaragan Road (Dandaragan Way). However, it is

acknowledged that wind turbines are already visible from these road routes and that renewable energy development is an emerging and highly visible component of the character of this region. Therefore, while these identified impacts are significant, due to the degree of change in these locations, it may be considered that the introduction of additional highly visible wind turbines may not negatively impact the character and amenity of the locality as wind turbines are already a relatively common feature of this area.

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Yathroo Wind Farm  
Landscape and Visual Impact Assessment

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## **Appendix 1: GIS figures**

The following GIS figures have been prepared by Umwelt to support the LVIA:

Figure 1: Regional Context

Figure 2: Project Site

Figure 3: LVIA Project Study Area

Figure 4: Landscape Planning Designations

Figure 5: Landform and Hydrology Context

Figure 6: Landscape Character Types

Figure 7: Key Visual Receptors, Representative Viewpoint Locations and Tourist Drives

Figure 8: Blade Tip VAM Assessment – Zone of Theoretical Visibility

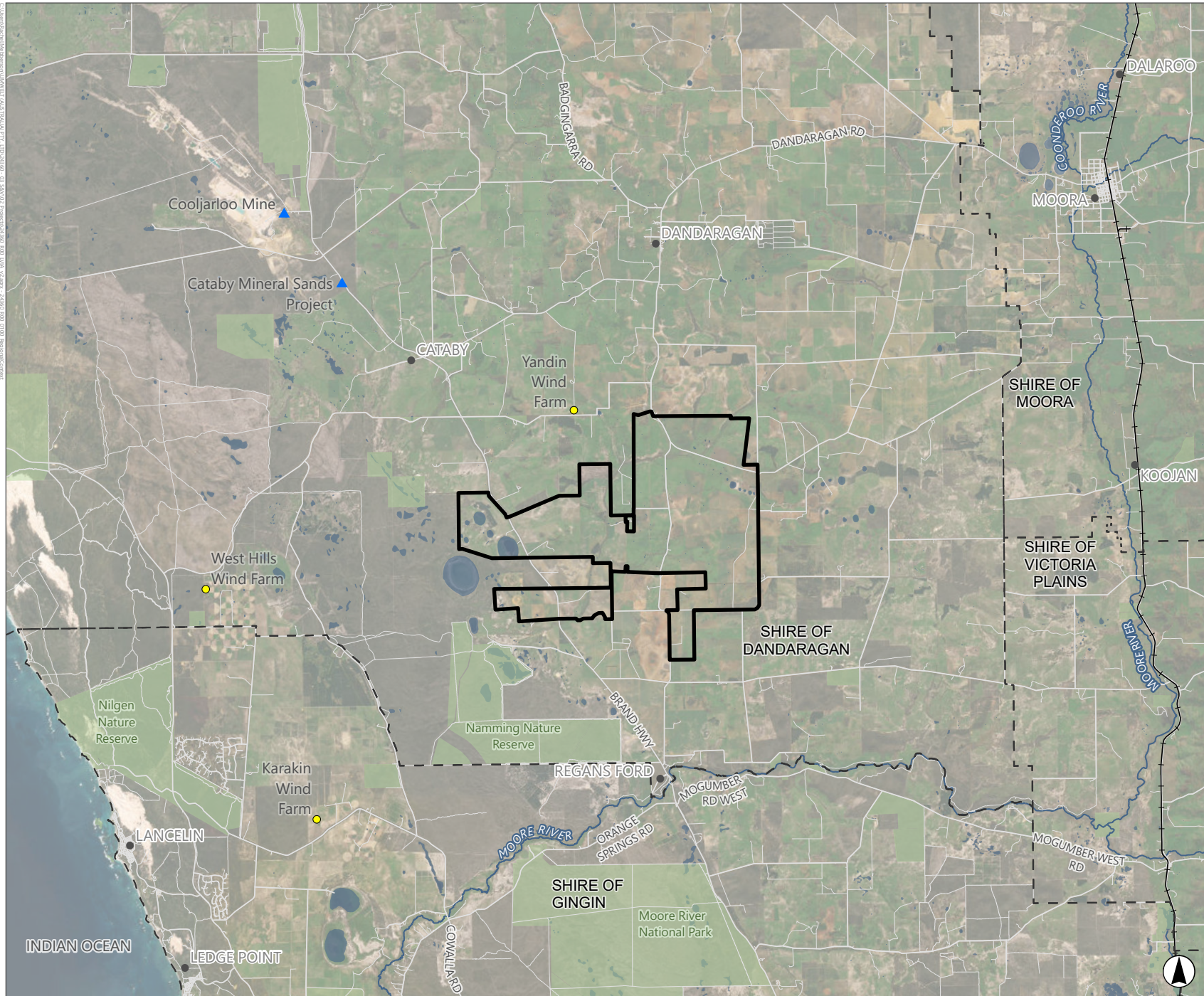
Figure 9: Blade Tip VAM Assessment – Number of Visible Turbines

Figure 10: Hub Height VAM Assessment – Zone of Theoretical Visibility

Figure 11: Hub Height VAM Assessment – Number of Visible Turbines

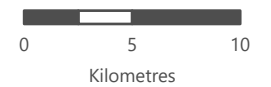
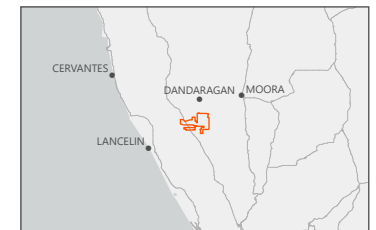
Figure 12: Cumulative Impact Assessment

**FIGURE 1**  
Regional Context



**Legend**

- Existing Wind Farm Developments
- ▲ Existing Mine Developments
- Populated Place
- Local Road / Track
- Major Road
- Railway
- Watercourse
- ⌈ ⌋ Local Government Area
- ▭ Project Area
- Waterbody
- Legislated Lands and Waters



Scale 1:350,000 at A4  
GDA2020 MGA Zone 50

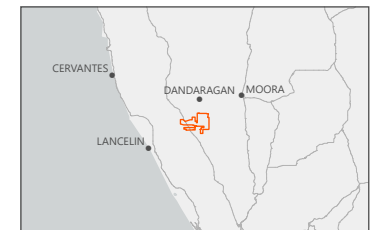
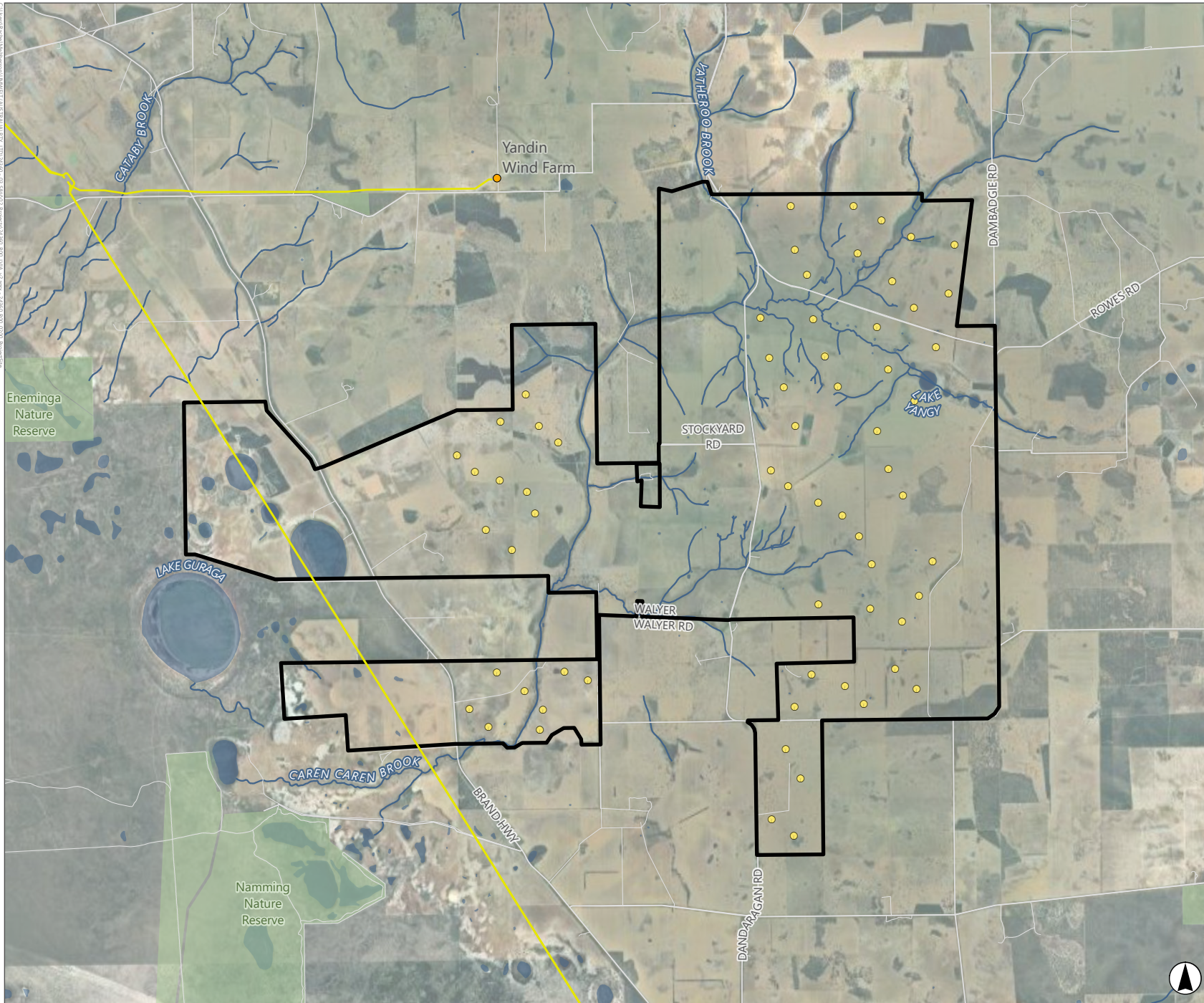
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**FIGURE 2**  
Project Site

**Legend**

- Proposed Wind Turbine Generators
- Existing Wind Farm Developments
- Overhead Transmission Line
- Local Road / Track
- Major Road
- Watercourse
- Project Area
- Waterbody
- Legislated Lands and Waters

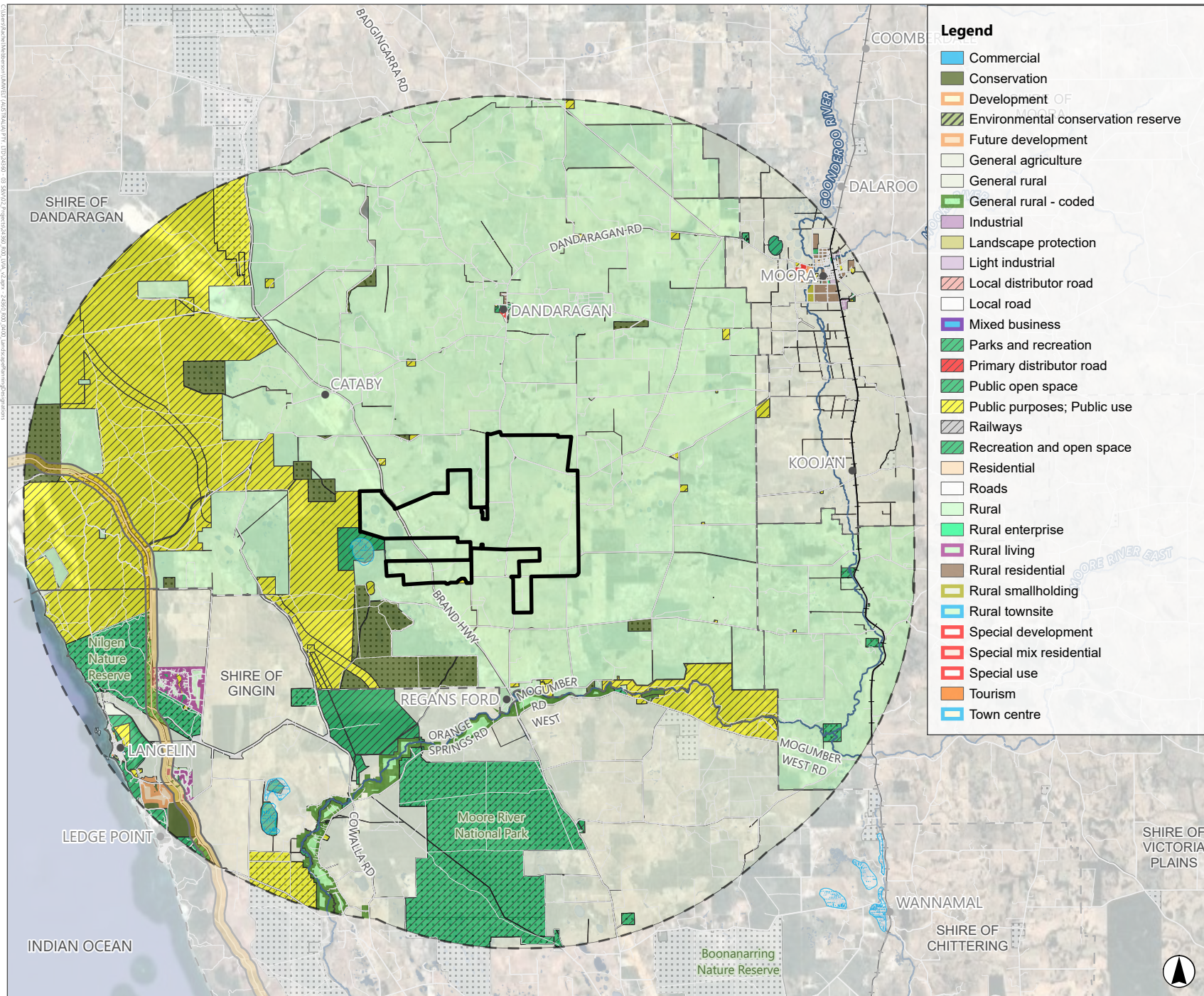


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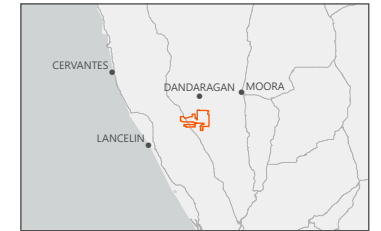


**FIGURE 4**  
Landscape Planning Designations



- Legend**
- Commercial
  - Conservation
  - Development
  - Environmental conservation reserve
  - Future development
  - General agriculture
  - General rural
  - General rural - coded
  - Industrial
  - Landscape protection
  - Light industrial
  - Local distributor road
  - Local road
  - Mixed business
  - Parks and recreation
  - Primary distributor road
  - Public open space
  - Public purposes; Public use
  - Railways
  - Recreation and open space
  - Residential
  - Roads
  - Rural
  - Rural enterprise
  - Rural living
  - Rural residential
  - Rural smallholding
  - Rural townsite
  - Special development
  - Special mix residential
  - Special use
  - Tourism
  - Town centre

- Legend**
- Populated Place
  - Local Road / Track
  - Major Road
  - + Railway
  - Watercourse
  - Local Government Area
  - LVIA Study Area (30km)
  - Project Area
  - Indian Ocean Drive Management Area
  - Waterbody
  - Nationally Important Wetlands
  - Legislated Lands and Waters



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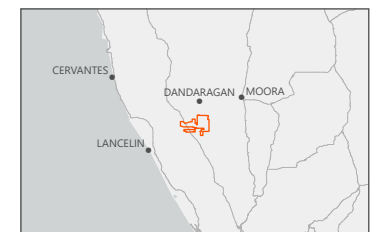
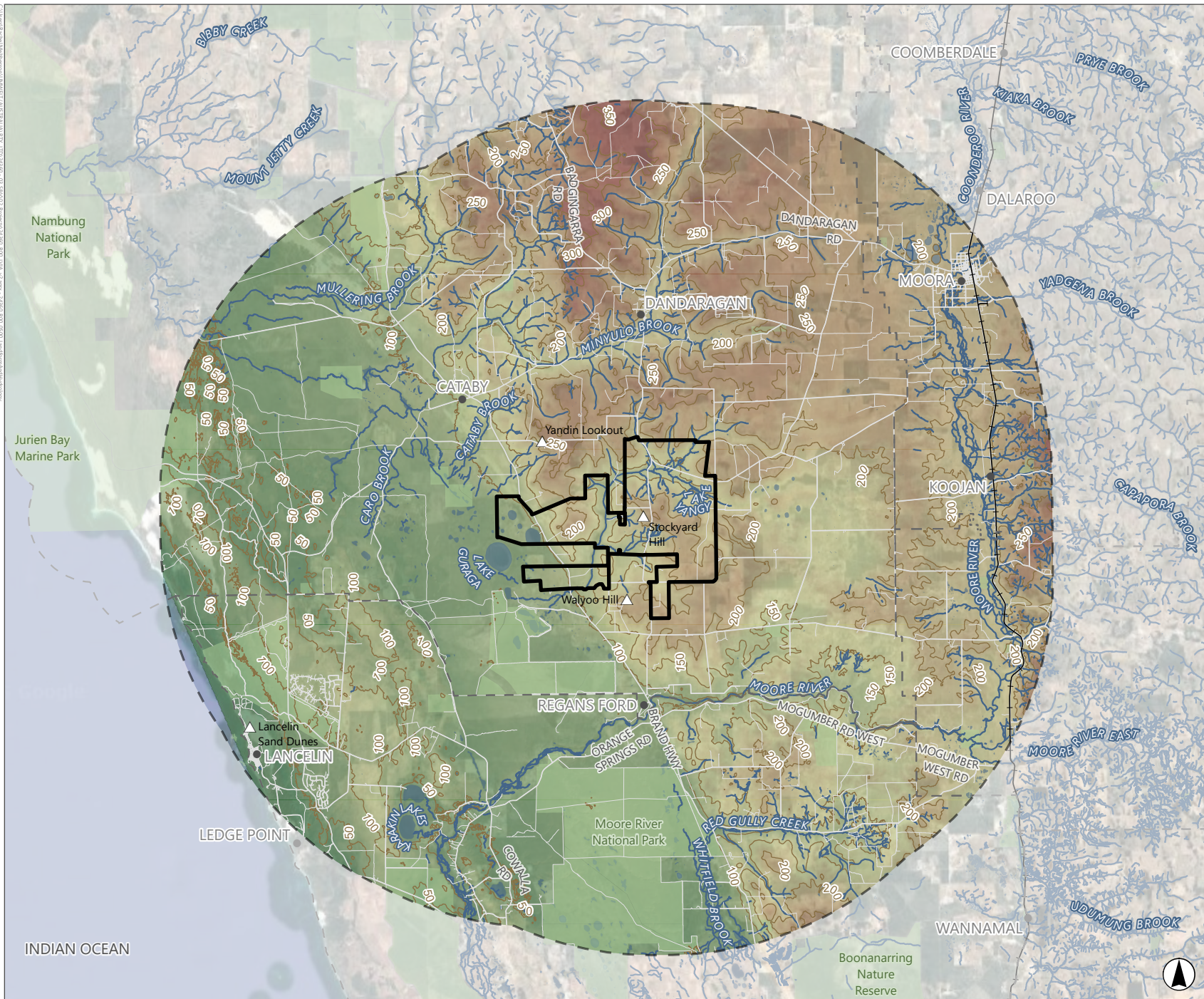
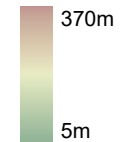
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**FIGURE 5**  
Landform and Hydrology Context

**Legend**

- △ Topographic Points of Interest
- Populated Place
- Local Road / Track
- Major Road
- Railway
- Watercourse
- Contours (50m)
- ▭ Local Government Area
- ▭ LVIA Study Area (30km)
- ▭ Project Area
- Waterbody
- Legislated Lands and Waters

**Elevation Surface (m)**



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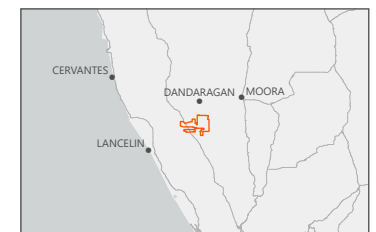
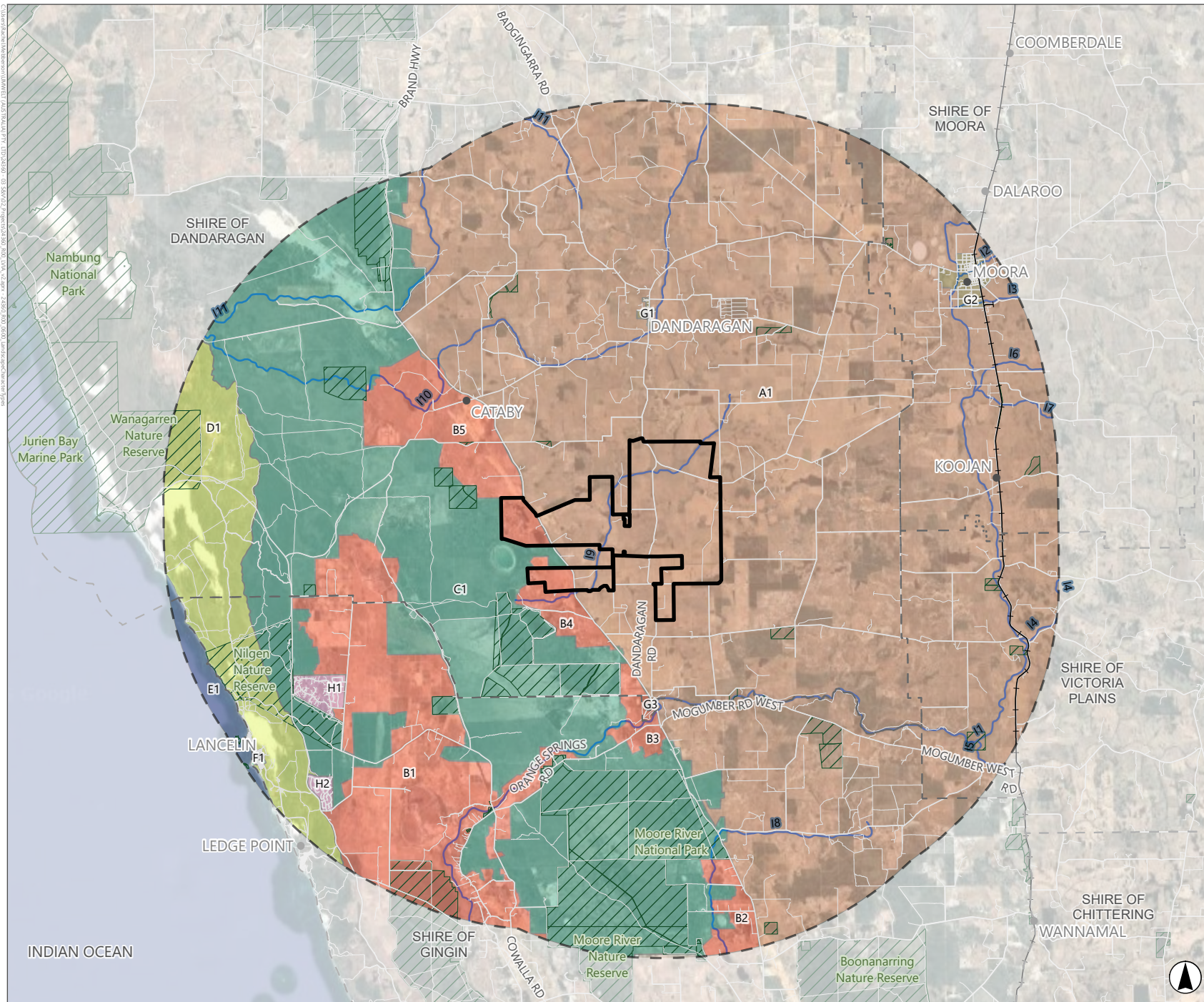
**FIGURE 6**  
Landscape Character Types

**Legend**

- Populated Place
- Local Road / Track
- Major Road
- + Railway
- ▭ Local Government Area
- ▭ LVIA Study Area (30km)
- ▭ Project Area
- ▨ Legislated Lands and Waters

**Landscape Character Types**

- LCT A Rural and Forested Uplands
- LCT B Rural Coastal Plain
- LCT C Forested Coastal Plains
- LCT D Coastal Dune Systems
- LCT E Marine Areas and Islands
- LCT F Coastal Settlements
- LCT G Rural Settlements
- LCT H Rural Living Estates
- LCT I Major Watercourses



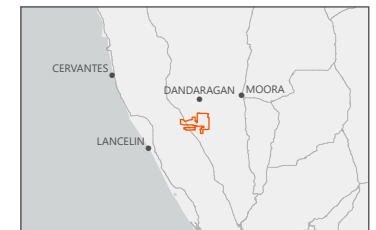
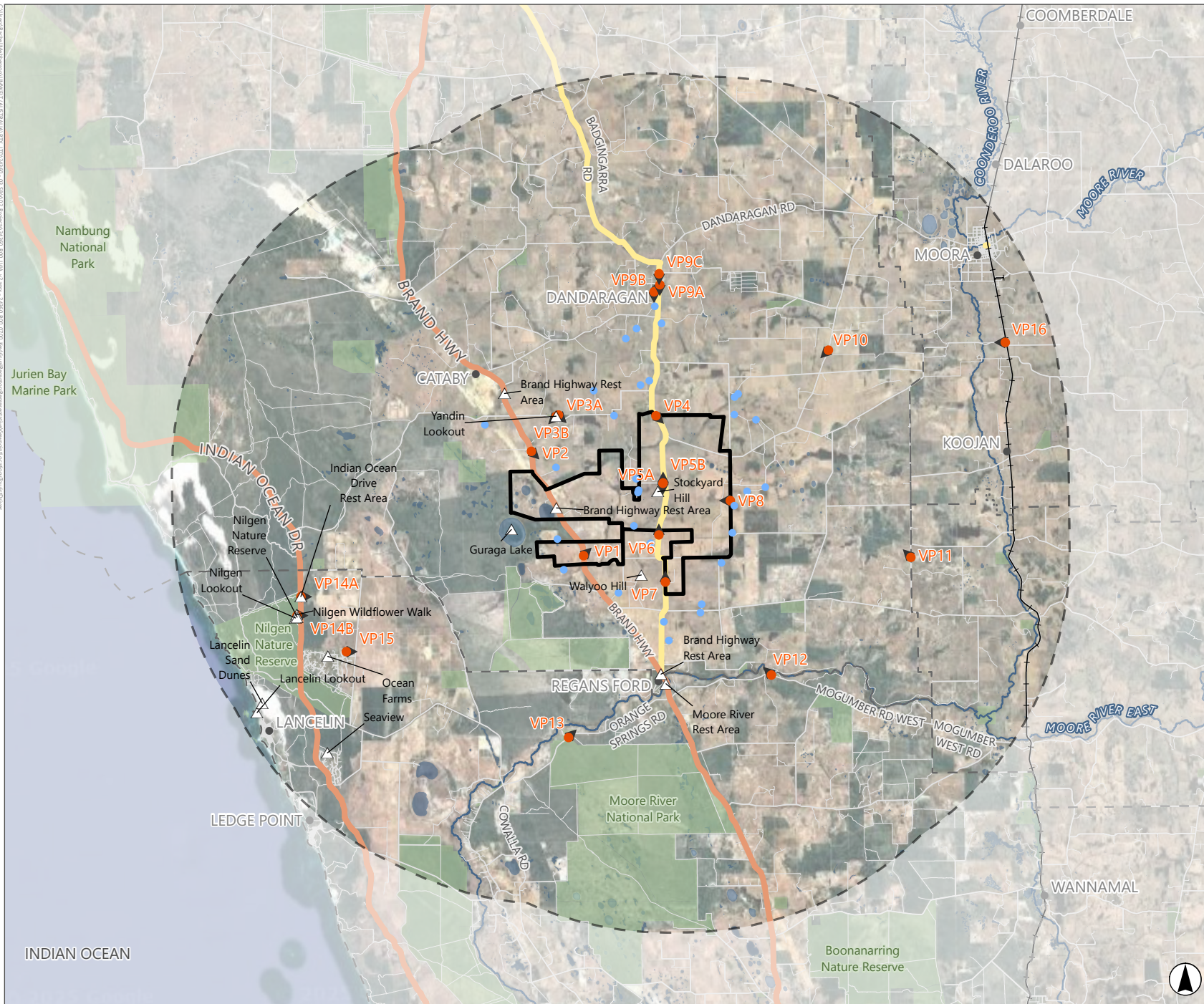
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**FIGURE 7**  
Key Visual Receptors,  
Representative Viewpoint  
Locations and Tourist  
Drives

**Legend**

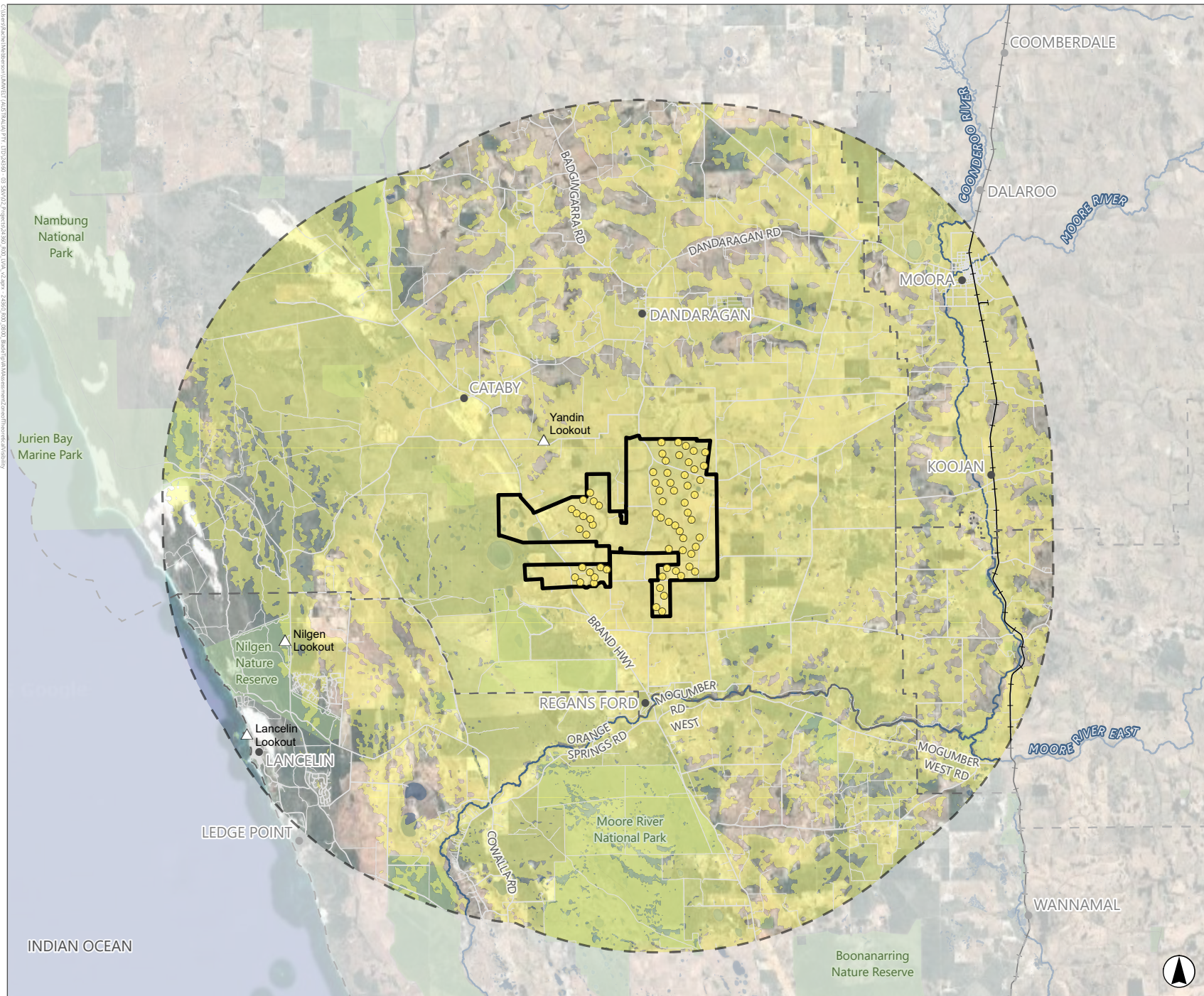
- Uninvolved Residential Dwellings
- △ Points of Interest
- ◆ Representative Viewpoints
- Populated Place
- State Strategic Scenic Routes
- Dandaragan Way Scenic Drive
- Local Road / Track
- Major Road
- Railway
- Watercourse
- Local Government Area
- LVIA Study Area (30km)
- Project Area
- Waterbody
- Legislated Lands and Waters



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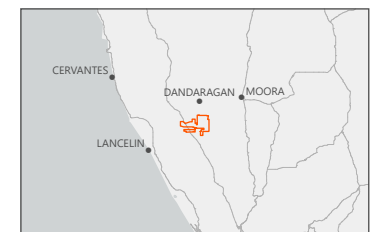
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**FIGURE 8**  
Blade Tip VAM  
Assessment - Zone of  
Theoretical Visibility



**Legend**

- Proposed Wind Turbine Generators
- Populated Place
- △ Lookouts
- Local Road / Track
- Major Road
- + Railway
- Watercourse
- Local Government Area
- LVIA Study Area (30km)
- Project Area
- Waterbody
- Legislated Lands and Waters
- Zone of Theoretical Visibility of WTG Blade Tips



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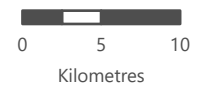
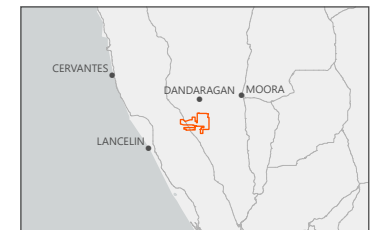
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**FIGURE 9**  
Blade Tip VAM  
Assessment - Number of  
Visible Turbines

**Legend**

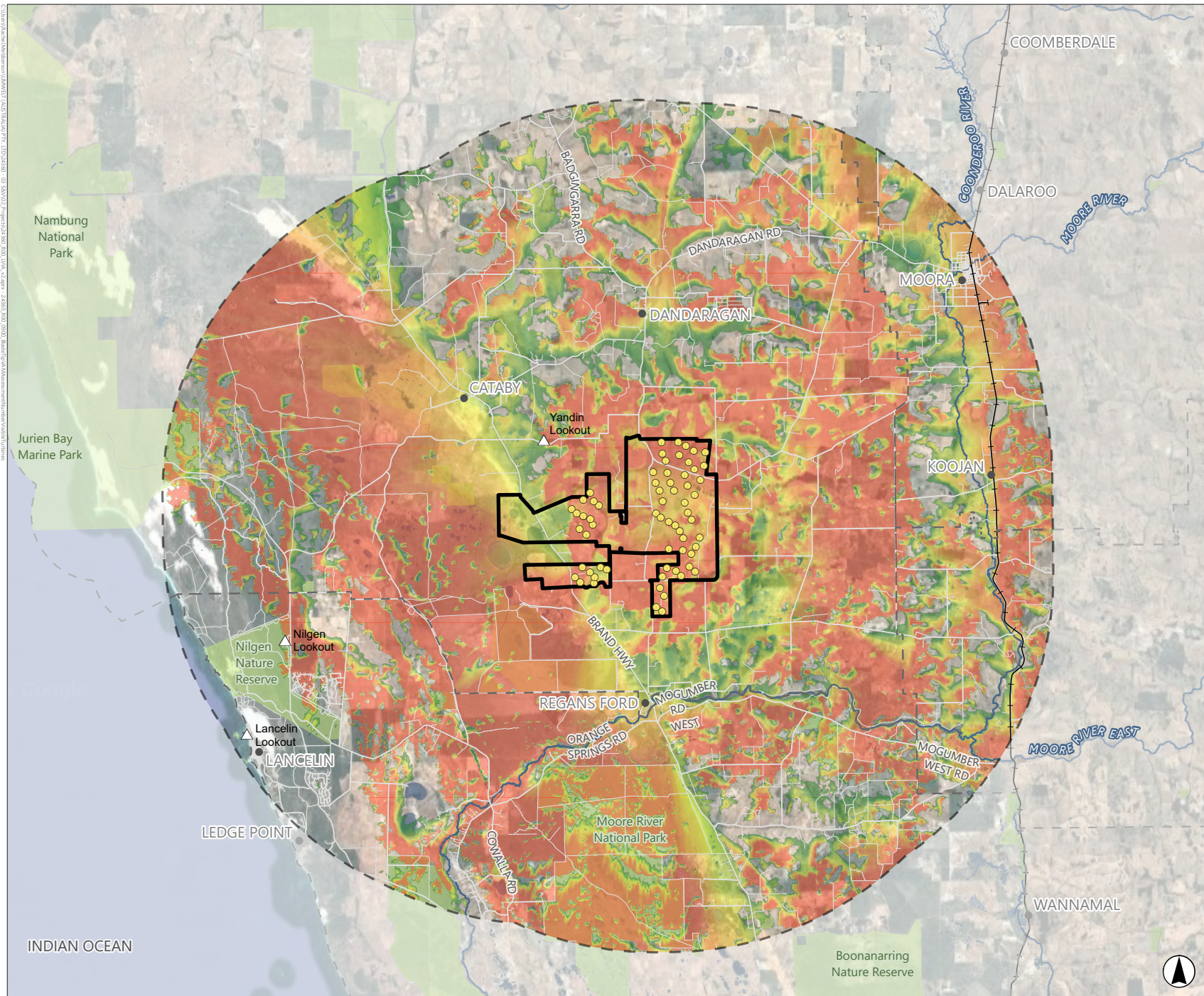
- Proposed Wind Turbine Generators
- Populated Place
- △ Lookouts
- Local Road / Track
- Major Road
- Railway
- Watercourse
- ▭ Local Government Area
- ▭ LVIA Study Area (30km)
- ▭ Project Area
- ▭ Waterbody
- ▭ Legislated Lands and Waters

**Number of Theoretical Visible Turbines (Blade Tip)**



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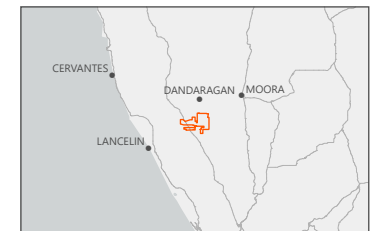
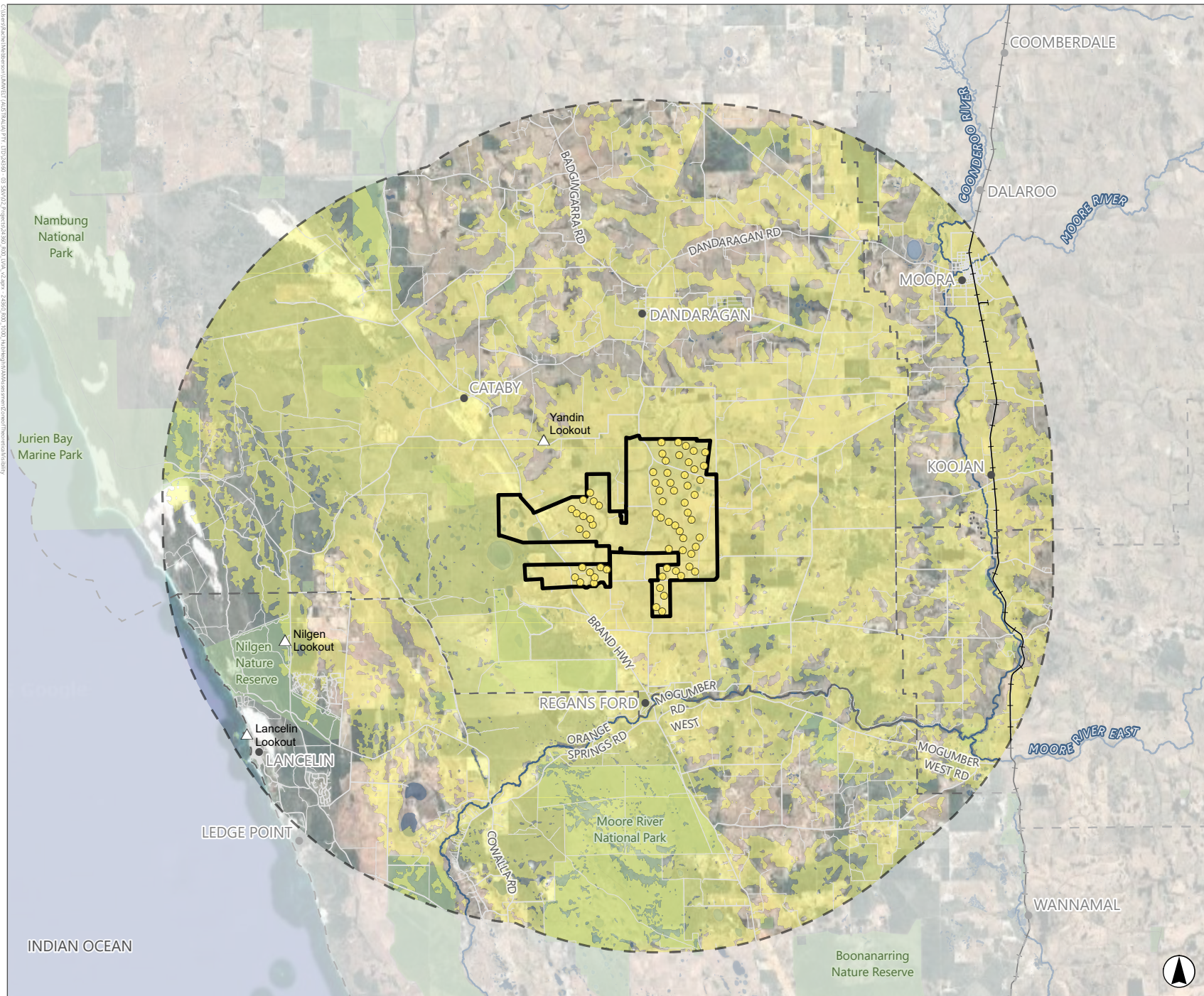
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**FIGURE 10**  
 Hub Height VAM  
 Assessment - Zone of  
 Theoretical Visibility

**Legend**

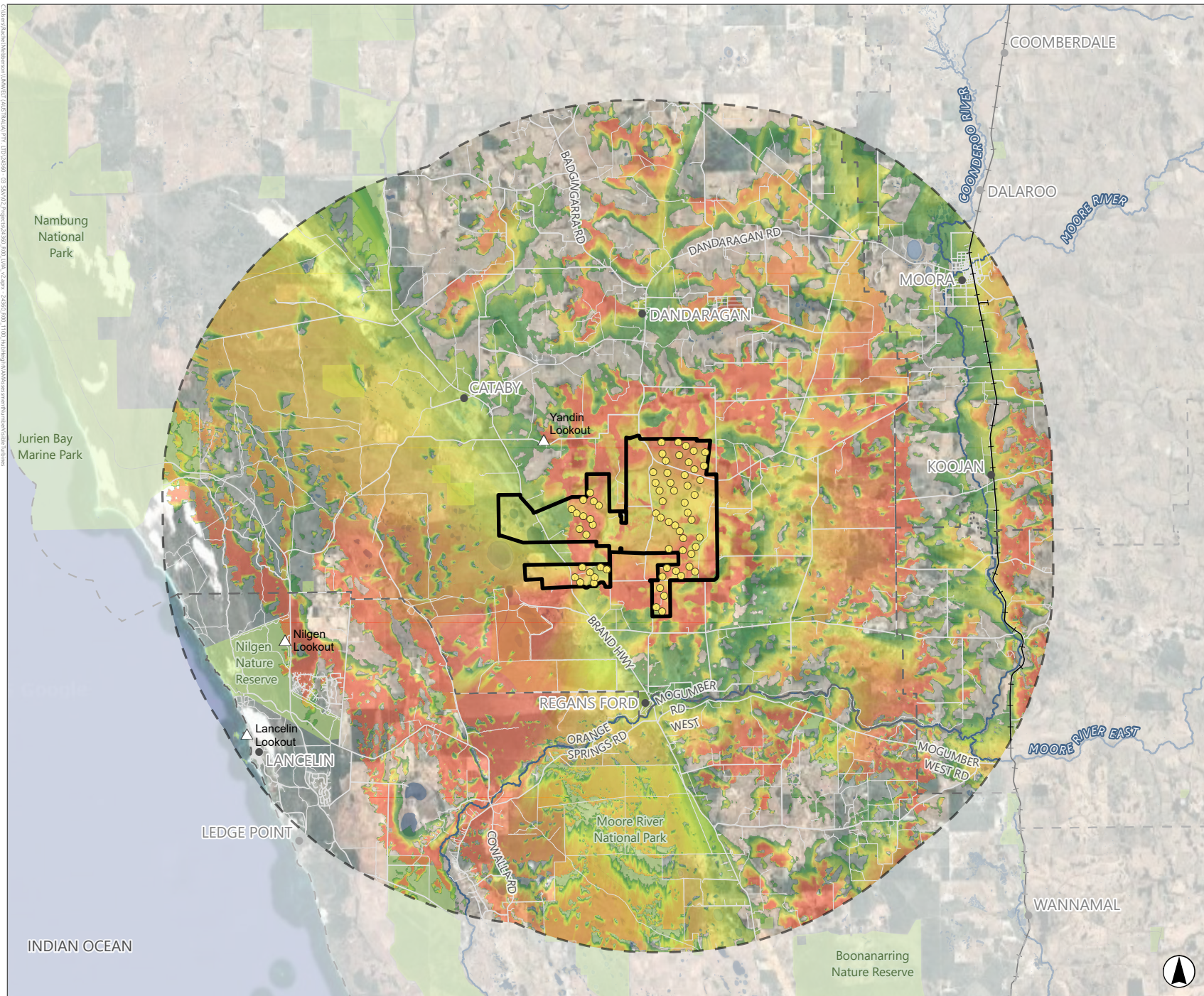
- Proposed Wind Turbine Generators
- Populated Place
- △ Lookouts
- Local Road / Track
- Major Road
- + Railway
- Watercourse
- Local Government Area
- LVIA Study Area (30km)
- Project Area
- Waterbody
- Legislated Lands and Waters
- Zone of Theoretical Visibility of WTG Hub Heights



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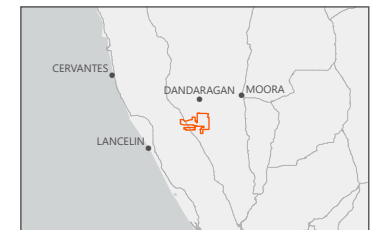
**FIGURE 11**  
 Hub Height VAM  
 Assessment - Number of  
 Visible Turbines



**Legend**

- Proposed Wind Turbine Generators
- Populated Place
- △ Lookouts
- Local Road / Track
- Major Road
- Railway
- Watercourse
- Local Government Area
- LVIA Study Area (30km)
- Project Area
- Waterbody
- Legislated Lands and Waters

**Number of Theoretical Visible Turbines (Hub Heights)**



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