

Victoria to New South Wales Interconnector West (VNI West) (NSW)

Technical paper 3 – Addendum Landscape Character and Visual Impact Assessment





Victoria to New South Wales Interconnector West (VNI West) (NSW) Amendment Report

Technical paper 3 – Addendum landscape character and visual impact assessment



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Abbreviations

Project term / Acronym	Definition
DPE	(NSW) Department of Planning and Environment (until January 2024)
DPHI	(NSW) Department of Planning, Housing and Infrastructure (post January 2024)
EIS	Environmental Impact Statement
LCVIA	Landscape Character and Visual Impact Assessment
LCZ	Landscape Character Zone
LEP	Local Environmental Plan
LGA	Local Government Area
LiDAR	Light Detection and Ranging
LSPS	Local Strategic Planning Statement
SEARs	Secretary's Environmental Assessment Requirements issued by the Department of Planning, Housing and Industry.
SWREZ	South West Renewable Energy Zone
WTG	Wind turbine generator

Glossary of terms

Project term	Definition
access routes	Roads providing the access to and from the project footprint.
access tracks	Temporary and permanent tracks that would be used to access transmission lines.
amended project (the)	The VNI West (NSW) project, as described in the Amendment Report, inclusive of the proposed amendments and refinements to the EIS project.
amended project footprint (the)	The area that has been assumed for the purpose of the Amendment Report to be directly affected by the construction and operation of the amended project. It includes the indicative location for project infrastructure, the area that would be directly disturbed during construction and easement requirements for operation. The amended project footprint has been developed to achieve a level of flexibility for future design refinement.
amendment	A change in what the proponent is seeking approval for following public exhibition of the EIS. It requires changes to the project description in the EIS and amendments to the associated infrastructure application.
Critical State Significant Infrastructure	Critical State Significant Infrastructure (CSSI) projects are high priority infrastructure projects that are essential to the State for economic, social or environmental reasons.
cumulative impact	The combined impacts of the project on a matter with other relevant future projects.
EIS project (the)	The project as described in the EIS (publicly exhibited in August 2025)
EIS project footprint (the)	The area that was assumed for the purpose of the EIS project to be directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.
interconnector	An electricity interconnector is a connection that allows power to flow in both directions between regions in the National Electricity Market (NEM), in this case between NSW and Victoria, providing access to a larger number of electricity generators and greater ability to meet varying demand where and when it is needed most.
landholder(s)	People who own properties/land.
landscape	‘A holistic area comprising its various parts including landform, vegetation, buildings, villages, towns, cities and infrastructure’. (NSW DPHI 2024)
landscape character	‘Landscape character is the distinct, recognisable and consistent pattern of elements in the landscape that make one landscape different from another. This includes physical elements, such as geology, soil, climate, flora and fauna, and the way these elements interact with each other. It also encompasses human influences, such as historical, cultural and economic activities that have shaped the land. Landscape character is an objective assessment of the physical and visual attributes of the landscape.’ (NSW DPHI, 2024)
landscape character zone	‘An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby’. (Transport for NSW 2023)
Technical Supplement	<i>Transmission Guideline, Technical Supplement for Landscape Character and Visual Impact Assessment</i> (NSW DPHI 2024) (the Technical Supplement). This guideline was released in November 2024 and provides guidance for the assessment of landscape character and a detailed methodology for the assessment of visual impacts of transmission projects.

Project term	Definition
Transgrid (or 'the proponent')	The manager and operator of the high voltage electricity transmission network in New South Wales and the Australian Capital Territory with connections to Victoria and Queensland. Transgrid manages the network that is the backbone of the National Energy Market, which enables energy trading between Australia's three largest states along the east coast.
project study area (the)	Encompasses the project footprint and a buffer zone which has been applied to identify the constraints which may or may not be indirectly impacted by the project.
transmission line alignment	The location of the transmission line structures along the middle of the transmission line easement.
transmission line corridor	A general 200 m wide corridor along the length of the transmission line within which the transmission line, structures and easement would be located.
transmission line easement	The area surrounding and including the transmission lines that allows access, construction and maintenance work to take place. The easement grants a right of access and for construction, maintenance and operation of the transmission line and other operational assets. The easements for the new 500 kV transmission line between the NSW/Victorian border and the expanded Dinawan substation would typically be 70 m wide. However, transposition locations would require wider easements up to 110 m wide. The replacement of the 330 kV transmission line between Ivydale Road, Wagga and the future Gugaa 500 kV substation, Livingstone Gully Road, would occur within the existing 60 m wide easement.
transmission line structure	Proposed free standing structures to support the transmission lines.
VNI West	An interconnector of about 480 km between the power grids of NSW and Victoria. Specifically, VNI West would connect the EnergyConnect (NSW – Eastern section) project (at the Dinawan substation in NSW) with the Western Renewables Link proposal (at Bulgana in Victoria) via a new substation near Kerang (in Victoria).
VNI West NSW ('the amended project')	The NSW component of VNI West includes: • a new 500 kV transmission line connection between the NSW/Victorian border and Transgrid's Dinawan substation (currently under construction as part of the EnergyConnect (NSW – Eastern section) project) • replacement of a section of existing single circuit 330 kV transmission line to a double circuit 330 kV line generally between Ivydale Road in Gregadoo and Transgrid's future Gugaa 500 kV substation (which is subject to a separate planning approval as part of the HumeLink project) • expansion of the Dinawan 330 kV substation to include a new 500 kV switchyard, modifications to the existing 330 kV switchyard, including new 330 kV switch bays to accommodate the South West REZ expansion works • installation of new shunt reactor units at the existing Wagga 330 kV substation • connection and transmission line diversion works at both the existing Wagga 330 kV substation and the future Gugaa 500 kV substation to connect the new transmission line infrastructure • ancillary activities to support construction and operation of the project.

Executive summary

This addendum landscape character and visual impact assessment (LCVIA) considers the proposed amendments and refinements to the Victoria to NSW Interconnector West (VNI West) project (the amended project), and whether the amended project would result in changes to assessment findings or mitigation measures described in *Technical Paper 3 – Landscape character and visual impact assessment* (IRIS, 2025) prepared for the EIS.

The methodology applied in this addendum is consistent with the methodology in *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS, and (where applicable) was undertaken in accordance with the *Transmission Guideline, Technical Supplement for Landscape Character and Visual Assessment* (DPHI, 2024) (the Technical Supplement).

Changes to landscape character impacts

Landscape character zones (LCZs) were identified in Chapter 5.1.1 of *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS. Those LCZs potentially affected by the proposed amendments and refinements were reassessed for impacts during the day and at night and include:

- four LCZs within the NSW/Victorian border to Dinawan component of the project (LCZ1 Murry River rural valley; LCZ2 Moulamein rural plains; LCZ3 Hay open rural plains and LCZ4 Delta Creek rural plains)
- one LCZ within the network augmentation works component of the project (LCZ5 Wagga Wagga rural fringe).

A summary of the landscape character impacts of the proposed amendments and refinements is provided in Table 3-5 to Table 3-8. The assessment results show a **reduction** from **low** to **negligible** landscape character impact to the LCZ5 Wagga Wagga rural fringe during construction, due to the removal of the temporary worker accommodation facility. Otherwise, there are **no changes to landscape character impacts** identified in Chapter 5.1.2 and 5.1.3 of *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS.

Additional areas that were not previously assessed in *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS, would be affected by the proposed amendments and refinements and the landscape character impacts have been identified. This includes:

- the Gregadoo to Book Book rural valleys landscape character area (LCA) - This addendum assessment determined there would be **minor impact** on the landscape character of the Gregadoo to Book Book rural valleys LCA due to the extended use of the Tarcutta temporary worker accommodation (AC03), which has been established and in use by the Humelink project, during construction in the day or at night
- an additional Deniliquin light industrial area LCZ – Due to the inclusion of the Deniliquin laydown area, an additional LCZ was considered for this additional facility. This addendum assessment determined the use of the laydown area at this location **would be consistent** with the character and activities of this site and surrounding area.

Changes to visual impacts

Public and private views were assessed in Chapter 6 of *Technical Paper 3 – Landscape character and visual impact assessment* prepared for the EIS. The proposed amendments and refinements would potentially alter the assessment of views during construction. These changes to visual impacts are described in Chapter 4 of this amendment report.

Overall, the amended project would have visual impacts that are consistent with outcomes presented in *Technical Paper 3 – Landscape character and visual impact*, apart from the following changes:

- the removal of the day and night time visual impacts during construction due to the removal of the Fisher Lane, Wetuppa compound previously proposed for the NSW / Victorian border to Dinawan substation section of the project. This includes the elimination of the visual impacts to private viewpoints VNI25, VNI26 and VNI27
- the removal of the day and night time visual impacts during construction due to the removal of the combined temporary worker accommodation facilities and construction compounds on Gregadoo Road and Livingstone Gully Road, Gregadoo
- the addition of a temporary worker accommodation at Tarcutta would cause some visual impacts during the day and at night to three neighbouring dwellings and from Mates Gully Road.

Changes to cumulative assessment

An assessment of cumulative impacts was presented in Chapter 7, *Technical Paper 3 – Landscape character and visual impact* of the EIS. Since the exhibition of the EIS, four additional projects have been identified in the vicinity of VNI West, and the status of some previously identified projects have changed. The compounding effect of the amended project, in combination with previously identified and additional projects, was considered and any changes to cumulative impacts are described in Chapter 5.

There were **no changes to the cumulative impacts** identified in *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS for previously identified projects. In addition, the **amended project would not increase landscape character or visual impacts** for the four additional projects identified as the permanent visual and landscape character impacts of these projects would be limited by distance, their location, and nature of these projects.

Mitigation measures

Mitigation measures were included in Chapter 8 of *Technical Paper 3 – Landscape character and visual impact*. As determined in this addendum, changes to landscape character and visual impacts due to the proposed amendments and refinements would be minor and mainly result in a reduction in visual impact. Therefore, there are **no changes to the mitigation measures** proposed. The proposed mitigation measures presented in *Technical Paper 3* are shown in Table 6-1.

1. Introduction

This chapter provides the background to VNI West (NSW), a description of the key features of the project as amended since the public exhibition of the EIS and outlines the purpose and structure of this addendum assessment.

1.1. Background

Transgrid and VicGrid 'VNI West' (formerly Transmission Company Victoria) are jointly developing a new electrical connection between NSW and Victoria called the Victoria to NSW Interconnector West project (VNI West). VNI West would form a second transmission link between NSW and Victoria to harness clean, low-cost electricity from Renewable Energy Zones (REZs) in both states and improve the reliability and security of electricity supply. VNI West is a priority project for the Australian Energy Market Operator (AEMO) and the Commonwealth and NSW and Victorian governments.

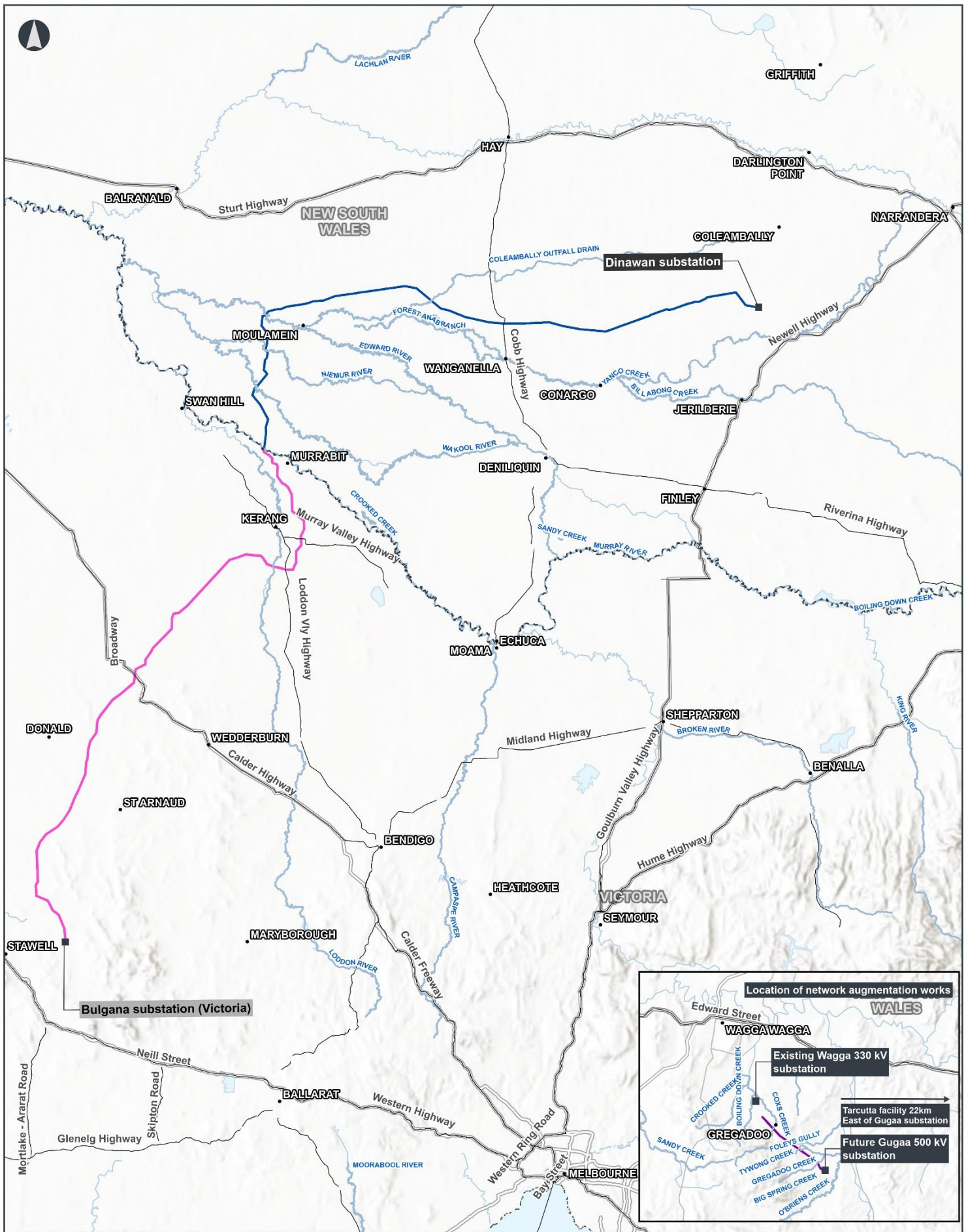
VNI West proposes the construction, operation and ongoing maintenance of a high voltage, 500 kV double circuit overhead transmission line that would connect the high voltage electricity grids in NSW and Victoria. Specifically, VNI West would connect the Western Renewables Link proposal at Bulgana in Victoria with the EnergyConnect (NSW – Eastern section) project (SSI-9172452) at Dinawan substation in NSW. The connection would be made via a new substation near Kerang in Victoria. Transgrid is responsible for seeking the required planning approval and delivering the NSW component of VNI West (referred to as 'VNI West (NSW)').

VNI West (NSW) would be located across four local government area (LGAs) which consist of the following: Edward River, Murray River, Murrumbidgee, and Wagga Wagga LGAs. Figure 1-1 shows the location of the project.

An EIS was prepared to support Transgrid's application for approval of VNI West (NSW) in accordance with the requirements of Part 5, Division 5.2 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS was placed on public exhibition by the NSW Department of Planning, Housing and Infrastructure (NSW DPHI) for a period of 28 days between 1 August 2025 and 29 August 2025.

Transgrid has identified several proposed amendments and refinements to the EIS project that reflect functional improvements to the design and construction methodology. The amendments and refinements have been made in response to feedback received from landholders and other key stakeholders; ongoing discussion with EnergyCo regarding infrastructure requirements to support the South West REZ and greater clarity regarding the announced delay to the VNI West (Victoria) project on 30 June 2025 (refer to section 1.3).

The project, inclusive of the proposed amendments and refinements, is referred to as the 'amended project' and is the subject of this revised technical paper.

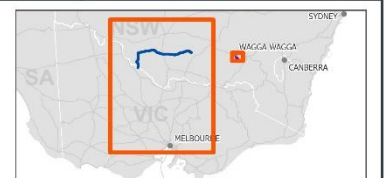


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VNI West (NSW)

Figure 1.1
Location of the amended project

Legend

- Project transmission line corridor (NSW/Victorian border to Dinawan substation)
- Victorian project transmission line corridor (subject to separate assessment)
- Network augmentation between the existing Wagga 330 kV substation and future Gugaa 500 kV substation
- NSW/Victorian border
- Substation
- Watercourse
- Roads



1.2. The project as exhibited

The key components of the project, as outlined in the EIS (referred to as the 'EIS project') included:

- transmission line works comprising:
 - a new 500 kV double circuit overhead transmission line, around 240 kilometres in length between the NSW/Victorian border near Murrabit, and the Dinawan substation
 - replacement of around nine kilometres of an existing 330 kV single circuit overhead transmission line (Line 51) generally between Ivydale Road (south of the existing Wagga 330 kV substation) and the future Gugaa 500 kV substation, Livingstone Gully Road with a new 330 kV double circuit overhead transmission line
- substation works comprising:
 - connection and line diversion works at the Dinawan substation to allow for connection of the proposed 500 kV switchyard
 - expansion of the Dinawan substation to include a new 500 kV switchyard and two new 330 kV transformer bays
 - connection and line diversion work at the existing Wagga 330 kV substation and at the future Gugaa 500 kV substation to allow for connection to the newly replaced Line 51
- ancillary activities comprising:
 - new and upgraded temporary and permanent access tracks
 - construction of utilities infrastructure and power supply
 - installation and operation of two telecommunication facilities (optical repeater sites) along the transmission line between the NSW/Victorian border and Dinawan substation including connections to the local power supply
 - temporary facilities required for construction of the project including construction compounds, combined temporary worker accommodation facilities and construction compounds, laydown and staging areas, stockpiling areas, concrete batching plants, brake and winch sites, site offices, parking areas, and utilities supplies.

Tarcutta temporary worker accommodation facility (AC03)

It should be noted that Transgrid had, through the development of the Amendment Report and this addendum technical paper, proposed to re-use the Tarcutta temporary worker accommodation facility (AC03) established as part of the Humelink project (SSI-36656827) for works within the Wagga Wagga LGA.

However, in response to more recent stakeholder and community feedback, it will no longer be carried forward as an accommodation option for the amended project. The project is actively considering alternative temporary worker accommodation options, which may include the use of existing facilities where suitable. The potential adaptive use of construction compounds will also be considered. Any such facilities, that have not been assessed, would be subject to further assessment, as per the approach described in Chapter 25 (Environmental Management) of the EIS.

As such, references to the Tarcutta temporary worker accommodation facility (AC03) should be disregarded throughout the Amendment Report and Technical paper 3 – Addendum landscape character and visual impact assessment.

1.3. Overview of the proposed amendments and refinements

Since the public exhibition of the EIS, several amendments and refinements to the project have been proposed, these are described in Table 1-1 below. Further information is provided in Chapter 3 (Description of the amended project) of the Amendment Report.

TABLE 1-1 OVERVIEW OF PROPOSED AMENDMENTS AND REFINEMENTS

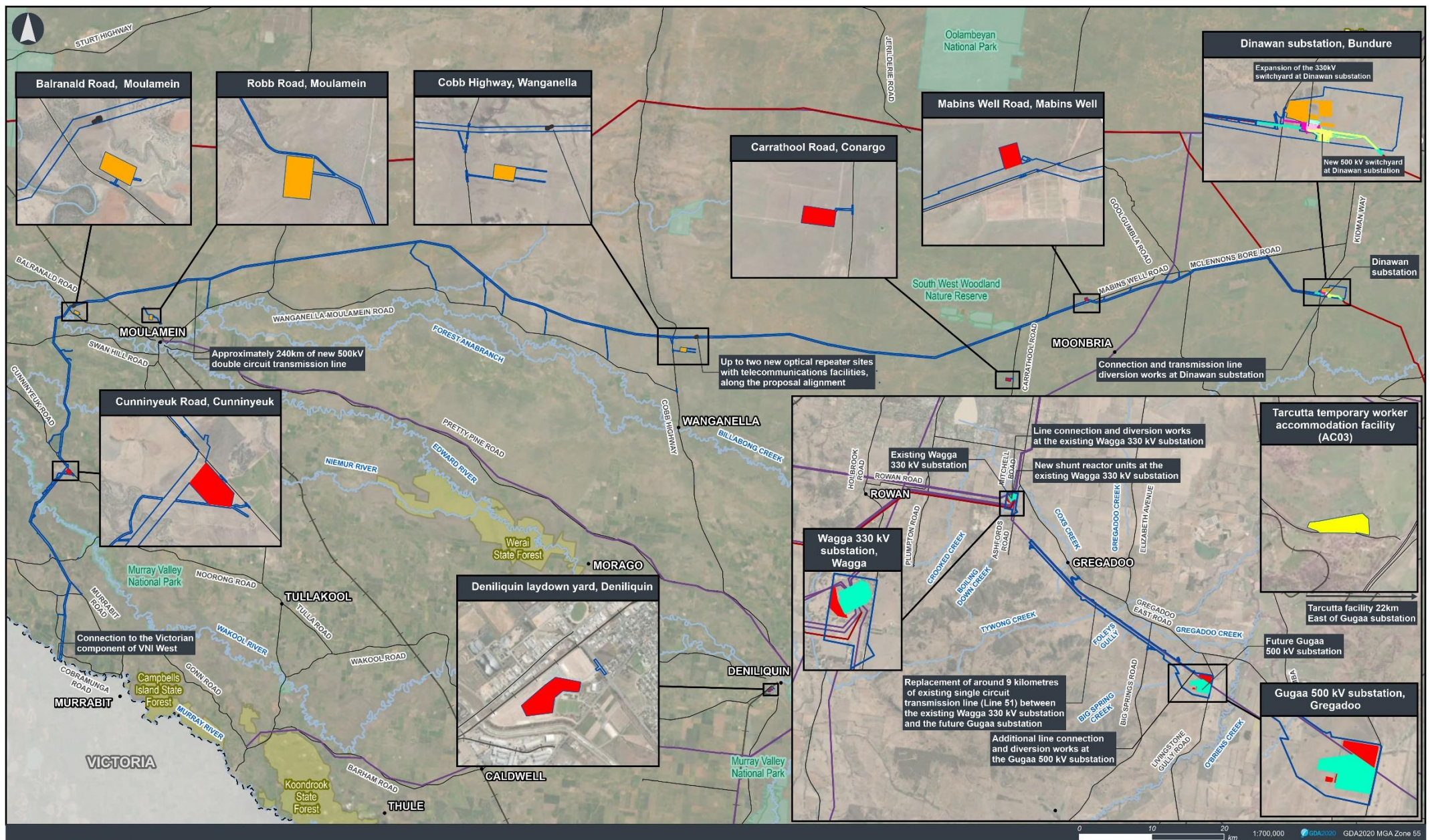
Amendment / refinement	Description
Amendments	
Inclusion of additional substation elements at the Dinawan substation to allow connection with the South West REZ	The amended project would expand the 500 kV switchyard area described in the EIS to include an additional 500/330 kV transformer, and an additional expansion of the Dinawan 330 kV switchyard, to support connection of generators in the South West REZ to the transmission network, noting that the transmission lines to connect the generators would be subject to separate planning approvals by others. The additional infrastructure to connect the South West REZ 330 kV generator transmission lines would include new 330 kV switchbays, and other high voltage switchgear and supporting infrastructure.
Installation of new shunt reactors at the existing Wagga 330 kV substation	The amended project includes the installation of two new shunt reactors at the existing Wagga 330 kV substation. Construction of the shunt reactors would require a new internal access road including an additional connection to Ashfords Road, earthworks associated with the extension of the substation bench and foundations, additional drainage works to integrate into the existing site drainage, modification of the existing spill containment system and reconfiguration of existing security fencing.
Inclusion of additional road and intersection improvements/upgrades along construction access routes	The amended project would include a number of local road and intersection improvements including: • minor road widening at Fisher Lane, Wetuppa, Robb Road, Moulamein and McLennons Bore Road, and Argoon Road • intersection work at: - Sturt Highway and Maude Road, Maude - Cobb Highway and Wanganella-Moulamein Road - Kidman Way and Cadell Road, Bundure - Kidman Way and Newell Highway, Bundure - Murrabit Road and Cobramunga Road, Cobramunga - Noorong Road and Nacurrie Road South, Wetuppa - Cunninyeuk Road and Wood Lane, Cunninyeuk - Swan Hill Road and Kaylock Road, Mallan - Berambong Road and Balranald Road, Moulamein - Wanganella-Moulamein Road and Maude Road, Moulamein - McLennons Bore Road and Cadell Road, Argoon • upgrades and/or replacement of existing cattle grids along Wanganella-Moulamein Road and Willurah Road.

Amendment / refinement	Description
Revision to the number and location of combined temporary worker accommodation facilities and construction compounds	The amended project would include a series of changes to the combined temporary worker accommodation facilities and construction compounds required to construct the project. The proposed changes include: • an additional combined temporary worker accommodation facility and construction compound option along Robb Road, Moulamein • combining the two Cobb Highway, Wanganella temporary worker accommodation facilities and construction compounds into one site within a reduced overall area • expansion of the Dinawan substation combined temporary worker accommodation facility and construction compound to allow for integration with the EnergyConnect (NSW – Eastern section) project temporary construction facilities • removal of the three previously identified combined temporary worker accommodation facilities and construction compound options along Gregadoo East Road and Livingstone Gully Road, Gregadoo previously proposed to accommodate workers for the network augmentation works component of the project, with construction workers proposed to be accommodated within available accommodation options within Wagga Wagga. However, the amended project would also include the potential use of the Tarcutta temporary worker accommodation facility (AC03) – established as part of the HumeLink project – as an option for temporary worker accommodation for the network augmentation works. The amended project would also include a series of changes to construction compound-only sites from those described and assessed in the EIS including: • removal of the Fisher Lane, Wetuppa construction compound as a potential option • inclusion of an additional option for a construction compound along Carrathool Road, Conargo • relocation of the Mabins Well Road, Mabins Well construction compound around five km east of its previously proposed location • minor expansion of the proposed construction compound along Cunninyeuk Road, Cunninyeuk • inclusion of a new construction compound along Livingstone Gully Road, Gregadoo adjacent to the future Gugaa 500 kV substation • inclusion of an additional construction compound adjacent to the existing Wagga 330 kV substation site • use of an existing construction storage compound in Deniliquin to allow for the storage and staged provision of construction materials such as transmission line components and transmission line cabling.
Refinements	
Refinement of the EIS project footprint and the indicative disturbance footprint	Further design refinements have resulted in refinements to the project footprint and indicative disturbance footprint. These changes include: • minor changes to the transmission line structure locations • minor adjustment to the location of the two telecommunication facilities • refinement to the size of the transmission line structure construction pads and locations of some brake and winch sites • inclusion of areas for the proposed ‘hurdle’ structures during construction (noting the use of hurdles was identified in the EIS, however the indicative areas required was not included in the EIS indicative disturbance footprint).

Amendment / refinement	Description
Updates to construction staging	The amended project is proposed to be delivered in two main stages to both better support the ongoing delivery of renewable energy projects associated with the South West REZ as well as reflect the timing of, and connection to, the VNI West (Victoria) project. Stage 1 of the amended project includes early works, the proposed Dinawan substation expansion and network augmentation works. Stage 1 is expected to commence in mid-2027 and expected to take around 28 months, aiming to be completed by mid-2029. <i>Stage 2 includes the construction of the new 500 kV transmission line between the NSW/Victorian border and Dinawan substation as well as the proposed new shunt reactors at the existing Wagga 330 kV substation. Stage 2 is proposed to commence in mid-2028 and expected to take around 35 months. Completion is targeted to occur in late 2030 to align with the timeframe for VNI West (Victoria).</i>
Rationalisation of access tracks for both the 500 kV and 330 kV (network augmentation works) components of the project	A number of previously proposed access tracks presented in the EIS have been rationalised for the amended project. A small number of new access tracks have also been proposed. The rationalisation of access tracks has typically included moving a number of tracks that were located outside the 200 m transmission line corridor to within the amended transmission line corridor, parallel to the existing transmission line and ultimately within the proposed final transmission line easement for the project.
Updates to construction traffic routes and over-size over-mass (OSOM) haulage routes	A number of construction traffic routes have been removed or replaced where the nominated road was considered to be unsuitable for the proposed volume of construction vehicles, or where an alternative route would provide a more suitable option. Similarly, a review of the OSOM routes proposed to be used for the amended project has resulted in changes to the OSOM routes proposed as part of the EIS. New OSOM routes to the existing Wagga 330 kV substation are also proposed to support delivery of the new shunt reactors.

The project, inclusive of the proposed amendments and refinements, is referred to as the 'amended project'. A detailed description of the amended project is provided in Appendix A (Updated project description) of the Amendment Report.

Figure 1-2 shows the key components of the amended project.



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VNI West (NSW)

Figure 1.2
Overview of amended
VNI West (NSW)

1.4. Purpose and structure of this report

The purpose of this addendum is to support the VNI West (NSW) Amendment Report through an assessment of the potential landscape character and visual impacts of the proposed amendments and refinements and to respond to submissions received during the exhibition of the EIS. This addendum also considers whether the proposed amendments and refinements would result in any changes to the predicted landscape character and visual impacts described in the EIS project, and whether any changes to mitigation measures are required. This addendum supplements the information provided in *Technical paper 3: Landscape character and visual impact assessment* exhibited part of the EIS. This addendum should be read in conjunction with the EIS for the EIS project and specifically *Technical paper 3: Landscape character and visual impact assessment* (Technical Paper 3).

The structure and content of this addendum is as follows:

- Chapter 1 – Introduction: Provides an introduction to this addendum technical paper
- Chapter 2 – Methodology: Provides a screening of the amended project and an outline of methodology used in this addendum
- Chapter 3 – Changes to landscape character impacts: Determines if there are changes to the assessment of landscape character impacts presented in *Technical Paper 3*, due to the amended project
- Chapter 4 – Changes to visual impacts: Determines if there are changes to the assessment of visual impacts presented in *Technical Paper 3*, due to the amendments and refinements
- Chapter 5 – Changes to cumulative impacts: Determines if there are changes to the assessment of cumulative visual impact presented in *Technical Paper 3*, due to the amendments and refinements
- Chapter 6 – Management and mitigation measures: Updates the mitigation measures presented in *Technical Paper 3*, due to the amendments and refinements

This addendum addresses the Secretary's Environmental Assessment Requirements (SEARs) issued on 13 August 2024.

2. Methodology

This section includes a screening assessment which determines whether the proposed amendments and refinements may affect landscape character and visual impacts, and describes the methodology used to assess the proposed amendments and refinements where additional assessment is required. This section also notes where the methodology used to assess these impacts is consistent with the methodology used for the EIS project.

2.1. Screening assessment

Table 2-1 provides a screening of the proposed amendments and refinements. The relevance of each amendment/refinement to landscape character and visual amenity is outlined to determine the level of assessment required in this addendum.

TABLE 2-1 SCREENING ASSESSMENT – LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT

Amendment / refinement	Relevance to addendum technical report	Level of assessment
Amendments		
Inclusion of additional substation elements at the Dinawan substation to allow connection with the South West REZ	The amendment at Dinawan substation may alter landscape character and visual amenity during daytime construction and operation. However, there would be: - no change to the assessment of landscape character impacts identified in the EIS as the additional elements would be consistent in character of the EIS project and occur within the same overall footprint previously assessed at this location - no change to the assessment of visual impacts as the additional elements would be consistent with the magnitude of change in views to Dinawan substation described for the EIS project.	No additional assessment required
Installation of new shunt reactors at the existing Wagga 330 kV substation	The amendment at the existing Wagga 330kV substation may alter landscape character and visual amenity, during construction and operation including:: - potential changes to the landscape character impacts identified in the EIS during daytime construction and operation - potential change to the visual impacts identified in the EIS during construction and operation due the proposed components of the Wagga 330 kV substation.	Updated landscape character assessment during daytime construction and operation (Chapter 3 of this addendum) Updated visual assessment during daytime construction (Chapter 4 of this addendum)

Amendment / refinement	Relevance to addendum technical report	Level of assessment
Inclusion of additional road and intersection improvements/upgrades along construction access routes	The additional road and intersection improvement/upgrades would result in: - no change to the landscape character impacts identified in the EIS, as road and intersection improvements / upgrades were considered generally within the assessment of landscape character impacts. The scope of the improvements and upgrades to the road network are consistent with works that would be expected within a rural area with minimal visual influence and characteristics, consistent with the existing road network - no change to the assessment of visual impact for the EIS as the methodology for visual impact assessment considers the visibility of the transmission line structures and does not specifically account for visual changes due to associated roads or intersection improvements/upgrades.	No additional assessment required
Revision to the number and locations of combined temporary worker accommodation facilities and construction compounds	The revisions to the combined temporary worker accommodation facilities and construction compounds would change landscape character impacts and visual impacts during construction. There would be: - potential changes to the landscape character impacts identified in the EIS during construction (day and night) as changes are proposed to the combined temporary worker accommodation facilities / construction compounds, including the removal of some sites and the addition of new sites - potential changes to the visual impacts identified in the EIS for public and private viewpoints with views of previously identified combined temporary worker accommodation facilities / construction compounds that are now removed from the amended project, relocated or consist of new combined temporary worker accommodation facilities / construction compounds - no change to the assessment of impacts to landscape character during operation.	- Updated and revised assessment of landscape character impacts during construction, day and night (Chapter 3 of this addendum) - Updated and revised assessment of visual impacts during construction, day and night (Chapter 4 of this addendum)

Amendment / refinement	Relevance to addendum technical report	Level of assessment
Refinements		
Refinement of the EIS project footprint and the indicative disturbance footprint	The refinement would result in: - no changes to the landscape character impacts identified in the EIS during operation as the refined transmission line structure locations are indicative and subject to change during detailed design. The landscape character assessment considered the impact of the transmission line corridor, which is not changing. The relatively minor refinements to the amended project footprint and amended indicative disturbance footprint are consistent with the EIS and the assessment of the transmission line on landscape character - no change to the assessment of impacts to landscape character during construction - no changes to private viewpoint impacts as the transmission line corridor that was used to determine the rural setback and simple assessment analysis remains largely unchanged compared to the EIS. The indicative transmission line structure locations used for the intermediate and detailed assessment may have moved slightly in some locations but remain indicative and subject to change during detailed design - no change to the public viewpoint impacts as the transmission line structures are indicative and the transmission line corridor remains largely unchanged compared to the EIS.	Further detail provided relating to the assessment of visual impacts (see Chapter 4 of this addendum). A full updated assessment is not warranted.
Updates to construction staging	The updated delivery schedule would result in longer construction activity in the vicinity of the Dinawan substation and existing Wagga 330 kV substation. Full commissioning would occur by late 2030 (compared to late 2029). The refinement would not change the landscape character and visual impacts associated with construction. There would be: - no change to the landscape character impacts identified in the EIS during construction as impacts for different construction stages were not specifically identified. Although construction at the substations may be longer, construction impacts to landscape character would remain temporary, as identified in the EIS, and the duration of construction impacts on landscape character (except for works at existing substations) would not increase - no change to the visual impacts identified in the EIS during construction as impacts for different construction stages was not specifically identified. The visual impacts of construction would be temporary, as identified in the EIS, and the duration of construction impacts to identified viewpoints (except for works at existing substations) would not increase - no change to the cumulative assessment as the duration of construction was not specifically identified, and the potential overlap of VNI West with the other project construction is assumed indicatively.	No additional assessment required

Amendment / refinement	Relevance to addendum technical report	Level of assessment
Rationalisation of access tracks for both the 500 kV and 330 kV (network augmentation works) components of the project	The proposed refinement would not change the landscape character and visual impacts associated with access tracks. There would be: - no change to the landscape character impacts identified in the EIS as access tracks were considered generally and their relocation would be consistent with the anticipated character changes anticipated for the EIS project - no change to the assessment of visual impacts identified for the EIS as the methodology for visual impact assessment considers the visibility of the transmission line structures and does not specifically account for visual changes due to associated access tracks.	No additional assessment required
Updates to construction traffic routes and over-size over-mass (OSOM) haulage routes	The amendment would not change the landscape and visual impacts associated construction traffic routes. There would be: - no change to the landscape character impacts identified in the EIS as the assessment considered haulage routes and OSOM routes within a 5 km landscape character study area. The presence of construction and OSOM routes within the amended study area is generally consistent with what was anticipated for the EIS project - no change to the assessment of visual impacts identified for the EIS as the methodology for visual impact assessment considers the visibility of the transmission line structures and does not specifically account for visual changes due to haulage routes and OSOM routes.	No additional assessment required

2.2. Overview of methodology

The methodology used for this addendum is consistent with the methodology described in Chapter 3, *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS.

2.2.1. Landscape character impact assessment methodology

The landscape character impact assessment methodology was described in Chapter 3.2 of *Technical Paper 3 – Landscape character and visual impact assessment* prepared for the EIS. The methodology to assess landscape character impacts of the proposed amendments and refinements is consistent with the methodology and follows the process outlined in the Transmission Guideline, *Technical Supplement for Landscape Character and Visual Assessment* (DPHI 2024) (the Technical Supplement).

In summary, the methodology required identification of landscape character zones within five kilometres of the project; identification of each character zone's 'sensitivity' to change; and identification of the 'magnitude of change' anticipated due to the project. The level of impact was determined by combining sensitivity and magnitude of change levels as shown in Table 2-2.

TABLE 2-2 LANDSCAPE CHARACTER IMPACT LEVELS - DAYTIME

	High sensitivity	Moderate sensitivity	Low sensitivity	Very low sensitivity
Very high magnitude	High	High	Moderate	Moderate
High magnitude	High	Moderate	Moderate	Low
Moderate magnitude	Moderate	Moderate	Low	Low
Low magnitude	Moderate	Low	Low	Negligible
Very low magnitude	Low	Low	Negligible	Negligible

These steps were followed to determine the level of impact to landscape character during construction and operation, during the daytime. Night-time level of impact was determined by combining sensitivity and magnitude of change levels as shown in Table 2-3.

TABLE 2-3 LANDSCAPE CHARACTER IMPACT LEVELS – NIGHT-TIME

	High sensitivity (A0: Intrinsically dark, A1: Dark)	Moderate sensitivity (A2: Low district brightness)	Low sensitivity (A3: Medium district brightness)	Very low sensitivity (A4: High district brightness)
Very high magnitude	High	High	Moderate	Moderate
High magnitude	High	Moderate	Moderate	Low
Moderate magnitude	Moderate	Moderate	Low	Low
Low magnitude	Moderate	Low	Low	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

2.2.2. Visual impact assessment methodology

2.2.2.1. Daytime visual impacts

NSW / Victorian border to Dinawan substation

The visual impact assessment methodology for this component of the project was described in Chapter 3.3.1 of *Technical Paper 3 – Landscape character and visual impact assessment* prepared for the EIS. The methodology used to assess visual impacts of the proposed amendments and refinements is consistent with that methodology.

In summary, the methodology to assess the impact of the operational project on daytime views followed the process prescribed in the Technical Supplement. This methodology involves two steps, a rural setback assessment and a proportionate visual impact assessment.

For the proportionate visual impact assessment, there are three sequential assessment types: simple, intermediate and detailed:

- the simple assessment identified and categorised receivers within four kilometres of the project and identified the potential magnitude of the project on each receiver's view using desktop tools from the Technical Supplement. Receivers with a moderate or higher rating proceeded to intermediate assessment
- the intermediate assessment identified the 'sensitivity' of each viewpoint using desktop analysis and 'magnitude of change' measured using worst case scenario modelling (a 180 degree panorama using landform without trees or other features). The level of impact was then determined by combining

sensitivity and magnitude of change levels. Receivers with a moderate or higher rating proceeded to detailed assessment

- the detailed assessment was based on a site inspection to confirm receiver sensitivity and magnitude of change was confirmed through the preparation of photomontages.

The level of impact was determined by combining sensitivity and magnitude of change levels as shown in Table 2-4.

TABLE 2-4 VISUAL IMPACT LEVELS (BASED ON THE TECHNICAL SUPPLEMENT)

	High visual sensitivity	Moderate visual sensitivity	Low visual sensitivity	Very low visual sensitivity
Very high magnitude	High	High	Moderate	Moderate
High magnitude	High	Moderate	Moderate	Low
Moderate magnitude	Moderate	Moderate	Low	Low
Low magnitude	Moderate	Low	Low	Very low
Very low magnitude	Low	Low	Very low	Very low

2.2.2.2. Network augmentation between the existing Wagga 330 kV substation and the future Gugaa 500 kV substation

The visual impact assessment methodology for this component of the project was described in Chapter 3.3.2 of *Technical Paper 3 – Landscape character and visual impact assessment* prepared for the EIS. The methodology used to assess visual impacts for the proposed amendments and refinements is consistent with that methodology.

The Technical Supplement does not apply to the augmentation of existing transmission lines or development immediately adjacent to existing transmission lines and therefore does not apply to this component. However, as the amended project would be located alongside the HumeLink transmission line and connected to the future Gugaa 500 kV substation, Livingstone Gully Road (part of the HumeLink project), an assessment of landscape character and visual impacts has been undertaken using the methodology used for the HumeLink EIS, *Technical Report 08, Landscape Character and Visual Impact Assessment Addendum* (Iris, 2024).

This involved a representative viewpoint assessment that identified if there is any incremental increase in the impacts due to the augmented line. The level of visual impact was determined by combining the level of sensitivity of the representative viewpoint, with the magnitude of change that would result from the project, as shown in the matrix in Table 2-5.

TABLE 2-5 VISUAL IMPACT LEVELS, NETWORK AUGMENTATION WORKS – PUBLIC VIEWS

		Sensitivity				
		National	State	Regional	Local	Neighbourhood
Magnitude	Very high magnitude	Very high	Very high	High	High-moderate	Moderate
	High magnitude	Very high	High	High-moderate	Moderate	Moderate-low
	Moderate magnitude	High	High-moderate	Moderate	Moderate-low	Low
	Low magnitude	High-moderate	Moderate	Moderate-low	Low	Negligible
	Very low magnitude	Negligible	Negligible	Negligible	Negligible	Negligible

For private viewpoints the impacts were assigned using the levels described in Table 2-6.

TABLE 2-6 VISUAL IMPACT LEVELS, NETWORK AUGMENTATION WORKS – PRIVATE VIEWS

Visual impact level	Description of combined impact
High	The project results in an overwhelming reduction in the amenity of the view / or fundamental change in the amenity of a primary view from a dwelling (or viewed from multiple primary viewing locations around the dwelling) with moderate to high scenic qualities.
High-moderate	Potential for a substantial reduction in the amenity of a primary view from a dwelling, or view with moderate or high scenic quality.
Moderate	Potential for a considerable reduction in the amenity of a primary view with moderate existing scenic qualities.
Low	Potential for a noticeable reduction in the amenity of a primary view or a view of lower existing scenic quality.
Negligible	No change visible or the infrastructure would be visible and there would be no change to the amenity of a primary view.

2.2.2.3. Night time visual impacts

For the assessment of night time visual impacts, this addendum includes an update to the general discussion contained in the EIS. This includes describing the potential visibility of the proposed amendments and refinements at night and the identification of those dwellings that may experience a view to areas of the amendments that would be lit at night during construction and operation. This assessment draws upon the findings of the private dwelling assessment and night-time landscape character impact assessment.

2.2.2.4. Visual impacts during construction

In addition to the operational visual impact assessment required by the Technical Supplement, a general discussion of the potential visual impacts of the proposed amendments and refinements during construction has been included. This includes a general assessment of the visual effects of the revised construction compounds and combined temporary worker accommodation facilities on surrounding public roads and private viewpoints.

3. Changes to landscape character impacts

3.1. NSW / Victorian border to Dinawan substation

3.1.1. Landscape character zones (LCZs)

Four broad landscape character zones (LCZ) were identified in *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS for this component of the project:

- Murray River rural valley LCZ1
- Moulamein rural plains LCZ2
- Hay open rural plains LCZ3
- Delta Creek rural plains LCZ4.

There is no change to these LCZs or their sensitivity as described in *Technical Paper 3 – Landscape character and visual impact assessment*.

The proposed amendments and refinements affect an additional area in Deniliquin that was not previously identified or assessed in *Technical Paper 3 – Landscape character and visual impact assessment*. The Deniliquin laydown yard is located in the Deniliquin light industrial area LCZ. The landscape character of this area, and its landscape sensitivity, is described in the following paragraphs.

Deniliquin light industrial area LCZ

The proposed Deniliquin laydown yard is located on the south western outskirts of the township of Deniliquin (see Attachment A). This area has a predominantly flat landform and is characterised by existing light industrial uses including an existing construction storage compound. This landscape is dissected by a railway to the northwest of the site, and a canal to the south which is separated from the site by a dense corridor of mature trees. The site is separated from Barham Road by light industrial uses, and from the residential areas to the north by a corridor of mature trees along Ochertyre Street. There is open space to the south, including a Rugby club and fields, and Rotary Park.

This LCZ has a very low landscape sensitivity as it has no specific valued scenic elements or landscape features and has characteristics of predominantly low scenic quality.

3.1.2. Changes to landscape character impacts during daytime construction

The changes to landscape character impacts during daytime construction due to the relevant proposed amendments and refinements are outlined in Table 3-1. This addendum assessment confirms that there would be no changes to the landscape character impacts identified in the EIS.

3.1.3. Changes to landscape character impacts during construction at night

The changes to landscape character impacts during construction at night due to the amendments and refinements are outlined in Table 3-2. This revised assessment confirms that there would be no changes to the landscape character impacts identified in the EIS.

TABLE 3-1 AMENDED LANDSCAPE CHARACTER IMPACT ASSESSMENT DURING CONSTRUCTION - DAYTIME

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (increase / no change / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ1 - Murray River rural valley	Moderate	Moderate	Moderate	Refinement of the EIS project footprint and the indicative disturbance footprint	<u>Moderate (no change)</u> Overall, there would continue to be a moderate magnitude of change to this LCZ. This is consistent with the outcomes presented in Chapter 5.1.2 of the <i>Technical Paper 3 – Landscape character and visual impact assessment</i> of the EIS.	<u>Moderate (no change)</u>
LCZ2 - Moulamein rural plains	Low	Moderate	Low	- New combined temporary worker accommodation facility and construction compound proposed at Robb Road, Moulamein (optional site) as an alternative to the Balranald Road, Moulamein combined compound and temporary worker accommodation facility. Both site options would accommodate the same number of workers and activities and only one site would proceed - The removal of the Fisher Lane, Wetuppa construction compound.	<u>Moderate (no change)</u> Changes to the magnitude described for the EIS project: - The Robb Road site and the Balranald Road site options would have a consistent character and would both be located on largely cleared sites. The change to landscape character would be similar, although the Robb Road site is located on a smaller road and may be experienced by fewer road users. - Area of construction impact is reduced overall due to removal of the Fisher Lane construction compound. Overall, while the Fisher Lane construction compound would be removed, there would continue to be construction activity across this LCZ resulting in a moderate magnitude of change. This is consistent with the outcomes presented in Chapter 5.1.2, <i>Technical Paper 3 – Landscape character and impact assessment</i> of the EIS.	<u>Low (no change)</u>

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (increase / no change / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ3 - Hay open rural plains	Low	Moderate	Low	The two Cobb Highway, Wanganella combined temporary worker accommodation facilities and construction compounds would be consolidated into one overall site within a reduced overall area.	Moderate (no change) Changes to the magnitude described for the EIS project: There would be a smaller impact area overall (reduced around 45% compared to previous two sites) and a reduced effect on landscape character. Overall, while the extent of the combined temporary worker accommodation facilities and construction compounds and consequently its effect on landscape character would be reduced, there would continue to be a moderate magnitude of change to this LCZ. This is consistent with the with the outcomes presented in Chapter 5.1.2, <i>Technical Paper 3 – Landscape character and visual impact assessment</i> of the EIS.	Low (no change)

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (increase / no change / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ4 - Delta Creek rural plains	Low	Moderate	Low	- Expansion of the Dinawan substation combined temporary worker accommodation facility and construction compound within Dinawan substation site to include a portion of the existing construction compound and combined temporary worker accommodation facility established as part of the EnergyConnect (NSW – Eastern section). - Inclusion of an additional option for a construction compound along Carrathool Road, Conargo. - Relocation of the previously proposed construction compound along Mabins Well Road, Mabins Well.	Moderate (no change) Changes to the magnitude described for the EIS project: - The increased combined temporary worker accommodation facility and construction compound within the Dinawan substation site would be consistent with the character changes, and overall area assessed for the EIS project, being an area of intensive energy infrastructure and construction activity. - The proposed construction compound along Carrathool Road, Conargo would be consistent with the character of compound facilities identified in the EIS, albeit located in another area of this LCZ and potentially adding another area of construction character activity. - The previously proposed construction compound along Mabins Well Road, Mabins Well would be relocated and consistent in character with what was proposed in the EIS. Overall, the number of combined temporary worker accommodation facilities and construction compounds proposed for the amended project and consequently its effect on landscape character would reduce compared to the EIS. There would continue to be construction across the LCZ that would result in a moderate magnitude of change to the landscape character of this LCZ. This magnitude level is consistent with the outcomes presented in Chapter 5.1.2, <i>Technical Paper 3 – Landscape character and visual impact assessment</i> of the EIS.	Low (no change)

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (increase / no change / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
Deniliquin light industrial area LCZ	Very low	N/A	N/A	Use of an existing construction laydown area in Deniliquin to allow for the storage and staged provision of construction materials such as transmission line components and transmission line cabling.	Negligible The site at Deniliquin is an existing storage facility in an industrial area. The proposed project activity would be consistent with the character of other uses in this area and the character of the built form and activities expected in a light industrial area. The magnitude of change would therefore be negligible.	Negligible

Note, the colours used in this table match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

TABLE 3-2 AMENDED LANDSCAPE CHARACTER IMPACT ASSESSMENT DURING CONSTRUCTION – NIGHT-TIME

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (no change / increased / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ1 - Murray River rural valley	Moderate	Negligible	Negligible	No changes to the nighttime activity assumed for the EIS project.	Negligible (no change)	Negligible (no change)
LCZ2 - Moulamein rural plains	Moderate	Moderate	Moderate	- Alternative proposed combined temporary worker accommodation facility and construction compound at Robb Road, Moulamein (optional site). - Removal of the Fisher Lane, Wetuppa construction compound.	Moderate (no change) Changes to the magnitude described for the EIS project: - Potential additional lighting at the Robb Road site (optional site) would be similar to the extent of lighting identified for the Balranald Road site in the EIS. Both sites are set back from residential areas and have similar landscape characteristics. Only one of these combined temporary worker accommodation facility and construction compounds would proceed. - There would be less lighting due to the removal of the Fisher Lane, Wetuppa construction compound. Overall, the level of lighting at night would be similar to that presented in Chapter 5.1.3, <i>Technical Paper 3 – Landscape character and visual impact assessment</i> of the EIS. There would continue to be a moderate magnitude of change to this LCZ, consistent with the EIS.	Moderate (no change)

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (no change / increased / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ3 - Hay open rural plains	Moderate	Moderate	Moderate	The two Cobb Highway, Wanganella combined temporary worker accommodation facilities and construction compounds would be consolidated into one overall site within a reduced overall area. This would reduce the extent of lighting in this area of the LCZ.	Moderate (no change) Changes to the magnitude described for the EIS project: There would be a smaller area over which there is bright lighting (reduced around 45% compared to previous two sites) and a reduced effect on landscape character at night. Overall, while the extent of the combined temporary worker accommodation facilities and construction compounds and consequently its effect on landscape character at night would be reduced, the presence of this facility at night would continue to cause a moderate magnitude of change to this LCZ. This is consistent with the outcomes presented in Chapter 5.1.3, <i>Technical Paper 3 – Landscape character and visual impact assessment</i> of the EIS.	Moderate (no change)

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (no change / increased / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ4 - Delta Creek rural plains	Moderate	Moderate	Moderate	- Expansion of the Dinawan substation combined temporary worker accommodation facility and construction compound within Dinawan substation site to include a portion of the existing construction compound and combined temporary worker accommodation facility established as part of the EnergyConnect (NSW – Eastern section) project as an option. - Inclusion of an additional option for a construction compound along Carrathool Road, Conargo - Relocation of the previously proposed construction compound along Mabins Well Road, Mabins Well	Moderate (no change) Changes to the magnitude described for the EIS project: - The additional lighting from the expanded Dinawan substation combined temporary worker accommodation facility and construction compound would be consistent with the change in the landscape character anticipated in the EIS. - The overall number of sites at Mabins Well Road would remain the same and have a similar effect on landscape character at night. The optional construction compound (including site offices, amenities and construction support facilities) along Carrathool Road, Conargo, may operate outside standard construction hours, requiring lighting. This additional lighting would be consistent with the types of lighting anticipated to occur within this LCZ in the EIS.	Moderate (no change)
Deniliquin light industrial area LCZ	Very low A4: High district brightness, being an industrial area	N/A	N/A	use of an existing construction storage compound in Deniliquin to allow for the storage and staged provision of construction materials such as transmission line components and transmission line cabling.	Negligible Any nighttime activity at this site would be consistent with the character of other uses in this area and activity expected in a light industrial area. The magnitude of change on this LCZ would be negligible.	Negligible

Note, the colours used in this table match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

3.2. Network augmentation works between the existing Wagga 330 kV substation and the future Gugaa 500 kV substation, Livingstone Gully Road

3.2.1. Landscape character zones (LCZs)

Three broad LCZs were identified in *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS for this component of the project. These are:

- Wagga Wagga rural fringe LCZ
- Gregadoo Great Dividing Range foothills LCZ
- Gregadoo river valleys LCZ.

There are no amendments or refinements within the Gregadoo Great Dividing Range foothills LCZ or Gregadoo river valleys LCZ. The description of the Wagga Wagga rural fringe LCZ and its sensitivity is as previously described in *Technical Paper 3 – Landscape character and visual impact assessment*.

The amended project also affects an area in Tarcutta that was not previously identified or assessed in *Technical Paper 3 – Landscape character and visual impact assessment*. The Tarcutta accommodation facility and compound (AC03) is located in the Gregadoo to Book Book rural valley LCZ. The existing landscape character of this area, and its landscape sensitivity, are described in the following paragraphs.

The Gregadoo to Book Book rural valleys LCZ

The Gregadoo to Book Book rural valleys LCZ is located to the south east of Wagga Wagga, and contains undulating landform, with several small hills and larger peaks such as Mount Flakney (533 metres above Australian height datum (mAHD)) and Mount Coreinbob (463 mAHD) (see attachment C and Attachment D). The area has been partially cleared of vegetation and is generally under agricultural use, mainly for grazing pastures with some areas of dryland farming. There is a temporary worker accommodation facility within this area, established as a part of the HumeLink project.

This LCZ has low local landscape sensitivity, that is, its landscape features are valued and experienced by concentrations of residents and local recreational users; and it includes places of local scenic value and local landscape features (not widely recognised or experienced beyond the local area).

3.2.2. Changes to landscape character impacts during daytime construction

The changes to landscape character impacts during daytime construction due to the amendments and refinements are outlined in Table 3-3. This revised assessment identifies:

- the impact on the LCZ5 Wagga Wagga Rural fringe due would reduce from low to negligible due to the removal of the three previously identified combined temporary worker accommodation facility and construction compound options along Gregadoo Road and Livingstone Gully Road, Gregadoo.
- a low impact on the landscape character of the Gregadoo to Book Book rural valleys character area (LCZ) due to the potential use of a worker accommodation facility at Tarcutta. This impact was not included in the EIS.

Overall, there would be no changes to the landscape character impacts identified in the EIS due to the amendments and refinements during daytime construction.

3.2.3.Changes to landscape character impacts during construction at night

The changes to the landscape character impacts during construction at night are outlined in Table 3-4. This revised assessment identifies a reduced magnitude of change on LCZ5 Wagga Wagga Rural fringe. The resulting level of landscape character impact, however, remains unchanged. Overall, there would be no changes to the landscape character impacts identified in the EIS due to the proposed amendment and refinements during construction at night, and a minor change to the night time landscape character of the Gregadoo to Book Book rural valleys LCZ due to the potential use of a worker accommodation facility at Tarcutta.

TABLE 3-3 AMENDMENTS AND REFINEMENTS LANDSCAPE CHARACTER IMPACT ASSESSMENT DURING CONSTRUCTION - DAYTIME

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements project assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (no change / increased / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ5 - Wagga Wagga rural fringe	Very low	Moderate	Low	- Removal of the three previously identified options for a combined temporary worker accommodation facility and construction compound i.e. two potential sites along Gregadoo Road and one potential site on Livingstone Gully Road, Gregadoo. - Inclusion of a new construction compound along Livingstone Gully Road, Gregadoo adjacent to the future Gugaa 500 kV substation. - Additional construction compound at the existing Wagga 330 kV substation.	Low (reduced magnitude of change) Changes to the magnitude described for the EIS project: - Additional construction compound at the existing Wagga 330 kV substation would occur in a site already affected by energy infrastructure and would not have a notable effect on landscape character. - There would no longer be a combined temporary worker accommodation facility in this LCZ which would reduce the level of impact on landscape character identified for the EIS project. Overall, as there would no longer be a combined temporary worker accommodation facility, the amount of construction activity within this LCZ would be substantially reduced. This is a reduction from the magnitude of change presented in Chapter 5.2.2, <i>Technical Paper 3 – Landscape character and visual impact assessment</i> of the EIS.	Negligible (impact decreased)
Gregadoo to Book Book rural valleys (note: ratings from <i>Technical Report 08, Landscape Character and Visual Impact Assessment Addendum</i> (Iris, 2024))	Low	N/A	N/A	Temporary worker accommodation facility at Tarcutta (currently the site of temporary worker accommodation facility for the HumeLink project) located about 1.5 km south-west of Tarcutta, north of Mates Gully Road.	Moderate Magnitude of change: - The amended project includes the extended use of part of this site for temporary worker accommodation facility, which would have visual characteristics similar to the accommodation currently location on the site. - This facility would occupy a very small area of the current facility, which is set back from the road (behind the compound).	Low

Note, the colours used in this table match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

TABLE 3-4 AMENDMENTS AND REFINEMENTS LANDSCAPE CHARACTER IMPACTS DURING CONSTRUCTION – NIGHT-TIME

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (no change / increased / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
LCZ5 - Wagga Wagga rural fringe	Low	Moderate	Low	- Removal of the three previously identified combined temporary worker accommodation facility and construction compound options along Gregadoo Road and Livingstone Gully Road, Gregadoo - Inclusion of a new construction compound along Livingstone Gully Road, Gregadoo adjacent to the proposed Gugaa substation - Inclusion of an additional construction compound at Wagga 330 kV substation.	Negligible (reduced magnitude of change) Changes to the magnitude described for the EIS project: - Additional construction compound at Wagga 330 kV substation would occur in a site already affected by energy infrastructure and any additional lighting would be absorbed into the character of this area at night. - Additional construction compound along Livingstone Gully Road, Gregadoo, would be located adjacent to the proposed Gugaa substation and minimal night works would be undertaken at this location. - There would no longer be a combined temporary worker accommodation facility which would substantially reduce the lighting required for the project and reduce the impacts on landscape character at night. Overall, there would no longer be a combined temporary worker accommodation facility in this LCZ and the magnitude of change would be negligible at night. This magnitude level is reduced from the outcomes presented in Chapter 5.2.3, Technical Paper 3 – Landscape character and visual impact.	Negligible (reduced) Overall, this LCZ has a low sensitivity and there would be a low landscape character impact due to the presence of construction. This impact is reduced from the outcomes presented in Chapter 5.2.3, <i>Technical Paper 3 – Landscape character and visual impact</i>

Landscape character zone	Landscape sensitivity	EIS project assessment		Amendments and refinements assessment		
		Magnitude of change	Landscape character impact	Relevant amendments and refinements	Magnitude of change (no change / increased / decreased from EIS)	Landscape character impact (no change / increased / decreased from EIS)
Gregadoo to Book Book rural valleys landscape character area	Moderate E2: Low district brightness	N/A	N/A	Temporary worker accommodation facility at Tarcutta (currently the site of temporary worker accommodation facility for the HumeLink project) located about 1.5 km south-west of Tarcutta, north of Mates Gully Road.	Moderate - The amended project includes the extended use of part of this site for temporary worker accommodation facility, which would have visual characteristics similar to the accommodation currently location on the site. This would include bright lighting at night. - This brightly lit facility would occupy a very small area of the current facility, which is set back from the road (behind the compound).	Moderate

Note, the colours used in this table match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

3.3. Summary of changes to landscape character impacts

Table 3-5 to Table 3-8 contain a summary of the revised assessment to landscape character.

TABLE 3-5 NSW/VICTORIAN BORDER TO DINAWAN SUBSTATION: SUMMARY OF LANDSCAPE CHARACTER IMPACTS - DAYTIME DURING CONSTRUCTION

		EIS project		Amendments and refinements		Change from EIS Project
Landscape character zone	Sensitivity	Magnitude	Impact	Magnitude	Impact	
Murray River rural valley LCZ1	Moderate	Moderate	Moderate	Moderate	Moderate	No change
Moulamein rural plains LCZ2	Low	Moderate	Low	Moderate	Low	No change
Hay open rural plains LCZ3	Low	Moderate	Low	Moderate	Low	No change
Delta Creek rural plains LCZ4	Low	Moderate	Low	Moderate	Low	No change
Deniliquin light industrial LCZ	Very low	N/A	N/A	Negligible	Negligible	No impact

TABLE 3-6 NSW/VICTORIAN BORDER TO DINAWAN SUBSTATION: SUMMARY OF LANDSCAPE CHARACTER IMPACTS – NIGHT TIME DURING CONSTRUCTION

		EIS project		Amendments and refinements		Change from EIS Project
Landscape character zone	Sensitivity	Magnitude	Impact	Magnitude	Impact	
Murray River rural valley LCZ1	Moderate	Negligible	Negligible	Moderate	Negligible	No change
Moulamein rural plains LCZ2	Moderate	Moderate	Moderate	Moderate	Moderate	No change
Hay open rural plains LCZ3	Moderate	Moderate	Moderate	Moderate	Moderate	No change
Delta Creek rural plains LCZ4	Moderate	Moderate	Moderate	Moderate	Moderate	No change
Deniliquin light industrial LCZ	Very low	N/A	N/A	Negligible	Negligible	No impact

TABLE 3-7 NETWORK AUGMENTATION WORKS: SUMMARY OF LANDSCAPE CHARACTER IMPACTS - DAYTIME DURING CONSTRUCTION

		EIS project		Amendments and refinements		Change from EIS Project
Landscape character zone	Sensitivity	Magnitude	Impact	Magnitude	Impact	
Wagga Wagga rural fringe LCZ5	Very low	Moderate	Low	Low	Negligible	Reduced impact
Gregadoo to Book Book rural valley LCZ	Low	N/A	N/A	Moderate	Low	New impact

TABLE 3-8 NETWORK AUGMENTATION WORKS - SUMMARY OF LANDSCAPE CHARACTER IMPACTS – NIGHT TIME DURING CONSTRUCTION

		EIS project		Amendments and refinements		Change from EIS Project
Landscape character zone	Sensitivity	Magnitude	Impact	Magnitude	Impact	
Wagga Wagga rural fringe LCZ5	Low	Moderate	Low	Low	Low	No change
Gregadoo to Book Book rural valley LCZ	Moderate	N/A	N/A	Moderate	Moderate	New impact

Note, the colours used in these tables match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

Overall, the construction impacts on landscape character from the amendments and refinements are generally consistent with the EIS project apart from new landscape character impacts to the Gregadoo to Book Book rural valley LCZ for the Tarcutta temporary worker accommodation facility. This includes a low landscape character impact during the day, and moderate landscape character impact at night during construction. There are no additional landscape character impacts anticipated at the new Deniliquin light industrial area LCZ.

4. Changes to visual impacts

4.1. NSW / Victorian border to Dinawan substation

4.1.1. Changes to visual impacts

As noted in Section 2, Table 2-1 of this addendum, there is the potential for changes to visual impacts during construction in the daytime and at night. There are no changes to views during operation or from the air during construction or operations.

4.1.1.1. Relevant amendments and refinements

The following amendments and refinements are relevant to the assessment of visual impacts during construction:

- removal of the Fisher Lane, Wetuppa construction compound as a potential compound option
- inclusion of an additional combined temporary worker accommodation facility and construction compound option along Robb Road, Moulamein
- combining the two Cobb Highway, Wanganella combined temporary worker accommodation facilities and construction compounds into one overall site within a reduced overall area
- inclusion of an additional option for a construction compound along Carrathool Road, Conargo
- relocation of the previously proposed construction compound along Mabins Well Road, Mabins Well
- minor expansion of the proposed construction compound along Cunninyeuk Road, Cunninyeuk
- expansion of the Dinawan substation combined temporary worker accommodation facility and construction compound
- use of an existing construction storage compound in Deniliquin to allow for the storage and staged provision of construction materials such as transmission line components and cabling.

These amendments and refinements may alter views during the day from public and private viewpoints.

The locations of the revised construction compounds and combined temporary worker accommodation facilities and construction compounds are shown on Figure 1-2.

4.1.1.2. Impacts to daytime public views during construction

Technical Paper 3 – Landscape character and visual impact assessment identified temporary visual impacts from local roads and highways that would have views towards the proposed construction compounds or combined compound and temporary worker accommodation facilities, including those from: Fisher Lane; Cunninyeuk Road; Balranald Road; the Cobb Highway Mabins Well Road; Kidman Way and Cadell Road. These impacts were identified as low and very low.

The following discussion identifies the changes to the assessment of visual impact during construction due to the proposed amendments and refinements.

Magnitude of change:

The proposed amendments and refinements would result in the following changes to the visual impact magnitude described for the EIS project:

- impacts to views from Fisher Lane due to the Fisher Lane, Wetuppa construction compound would not occur
- impacts to views from Balranald Road to the combined construction compound and temporary worker accommodation facility at Balranald Road, Moulamein would remain as described for the EIS project
- potential impact to views from Robb Road to the temporary worker accommodation facility and construction compound at Robb Road, Moulamein

- impacts to views from the Cobb Highway would be reduced as the Cobb Highway, Wanganella temporary worker accommodation facility and construction compound would be combined and reduced in size
- impact on views from Mabins Well Road to Mabins Well Road, Mabins Well construction compound would occur in a different location but have a similar effect on views
- impact on views from Kidman Way and Cadell Road would be of a similar level to the EIS project s while the Dinawan substation combined temporary worker accommodation facility and construction compound would be larger, it would have a consistent character being located near and incorporating areas that are currently being utilized as a laydown and construction compound for the EnergyConnect (NSW-Eastern section) project. Views in this area are currently characterised by construction and energy infrastructure, allowing for the absorption of the project into views
- there would be limited views to the Deniliquin laydown area from surrounding roads, with views mostly screened by mature trees along Ochertyre Street to the north (see Attachment A). There would be views from the Rugby Club and Rotary park to the south of the site. These views currently include the character of light industry and construction compound activities currently being undertaken on the site. As the site would be consistent in character with these existing views, there would be no visual impacts associated with the proposed use of the Deniliquin laydown yard.
- The magnitude of change would reduce in views where temporary worker accommodation and construction compounds are removed from the project (such as the Fisher Lane, Wetuppa construction compound) or are reduced in size (such as the Cobb Highway, Wanganella combined construction compound). The magnitude of change would remain unchanged where additional locations identified are in already disturbed areas (such as the Dinawan substation combined worker accommodation and construction compound).

Visual impact:

Overall, there would continue to be temporary visual impacts from local roads and highways that would view one of the proposed construction compounds or combined compound and temporary worker accommodation facilities. There would be a lower visual impact overall due to the reduced number and reduced area of the combined compound and temporary worker accommodation facilities. The visual impacts due to these construction facilities would be low and very low, consistent with the findings in the EIS.

4.1.1.3. Impacts to private daytime views during construction

For the EIS project, temporary visual impacts were identified from:

- private dwellings with a view to the Fisher Lane, Wetuppa compound from three private dwellings (VNI25, VNI26 and VNI27) and from Fisher Lane, which provides access to these dwellings
- the other temporary construction compounds or temporary worker accommodation facilities proposed in the EIS project were not located in proximity to any private dwellings i.e. there are no dwellings within two kilometres of these temporary facilities, and there were no potential visual impacts identified for the EIS project.

Magnitude of change:

The proposed amendments and refinements would result in the following changes to the visual magnitude described for the EIS project:

- the visual impacts from the three identified private dwellings VNI25, VNI26 and VNI27 would be removed due to the removal of the Fisher Lane, Wetuppa construction compound
- there are no further private dwellings identified with a visual impact due to the amended and refined temporary compound or combined compound and temporary worker accommodation facilities. This includes:
 - combined temporary worker accommodation facility and construction compound option along Robb Road, Moulamein, which is several kilometres from the nearest dwelling
 - the construction compound on Carrathool Road, Conargo site which is located several kilometres from the nearest dwelling
 - the construction storage site at Deniliquin which is over 250 metres from the nearest residential area and visually separated from this area by dense mature trees along Ochertyre Road to the north of the site, and intervening land with the potential for similar light industrial uses (see Attachment A)
 - the relocated construction compound along Mabins Well Road, Mabins Well, which is 2.8 kilometres away from the nearest residence (VNI063).

Visual impact:

The proposed amendments and refinements remove the Fisher Lane, Wetuppa compound from the amendments and refinements and the visual impacts previously identified to private dwellings during construction. This would be a lower level of visual impact from private viewpoints than what was identified for the EIS project.

4.1.1.4. Changes to visual impacts during construction at night

For the EIS project temporary visual impacts at night were identified from:

- public roads and dwellings with a view to one of the proposed construction compounds or combined compound and temporary worker accommodation facilities
- partly obstructed views to the Fisher Lane, Wetuppa construction compound from Fisher Lane and the nearby private dwellings (VNI25, VNI26 and VNI27).

Magnitude of change:

The proposed amendments and refinements would result in the following changes to the visual magnitude of change described for the EIS project:

- the Fisher Lane, Wetuppa compound has been removed from the project together with any night time visual impacts
- the magnitude of change would reduce in views from the Cobb Highway at night as the size of the Cobb Highway, Wanganella combined temporary worker accommodation facility and construction compound is reduced.

Due to their remote location, there would be limited visibility at night from the:

- additional combined temporary worker accommodation facility and construction compound option along Robb Road, Moulamein
- additional option for a construction compound along Carrathool Road, Conargo
- relocated previously proposed construction compound along Mabins Well Road, Mabins Well
- expanded Dinawan substation combined temporary worker accommodation facility and construction compound.

Visual impact:

The proposed amendments and refinements remove the Fisher Lane, Wetuppa compound from the project and the visual impacts previously identified to private dwellings during construction. This is a lower impact from these private viewpoints than what was identified in the EIS.

There would also be a lower impact on the views from the Cobb Highway.

4.1.1.5. Changes to visual impacts during operation

Relevant amendments and refinements:

- refinement of the EIS project footprint and the indicative disturbance footprint including minor changes to the indicative transmission line structure locations.

As noted in Chapter 2.1 of this addendum, as the transmission line corridor is largely unchanged for the amended project; the minor nature of the changes to the indicative transmission line structure locations, a revised assessment of the visual impacts during operation has not been undertaken. It should be noted that although the transmission line structure locations and other aspects of the indicative disturbance footprint have been revised, the area remains indicative at this stage. The final disturbance area would be confirmed during finalisation of the design and construction methodology and would be developed as part of the consideration of avoidance and impact minimisation.

The following section of this report provides some additional detail to support the screening assessment.

Public viewpoint impacts

Technical Paper 3 – Landscape character and visual impact assessment identified nine representative public viewpoints that would view the project. Due to the minor nature of the changes and indicative nature of the transmission line structure locations, no additional public viewpoints are required to confirm the visual impacts of the amendments and refinements.

The minor adjustments to the indicative transmission line structure locations would be visible in three of the public viewpoints that were assessed. They are:

- Viewpoint 3 View east from Cunninyeuk Road
- Viewpoint 4 View east along Swan Hill Road
- Viewpoint 5 View south along Maude Road.

In these views, the minor adjustment to the indicative transmission line structure locations would only slightly change the position of the indicative transmission line structures but would not alter the results of the visual impact assessment prepared for the EIS project. Table 4-1 includes a summary of EIS assessment of these viewpoints and notes the nature of the minor changes to the indicative transmission line structure locations.

As well as using indicative transmission line structure locations, the photomontages used for the detailed assessment of the public viewpoints relied upon a 3D model of the transmission line structure that was modelled at the tallest height anticipated for the project, and with the most visually obtrusive structure of those structures likely to be used on the project. The private viewpoint detailed assessment in the EIS is conservative.

TABLE 4-1 PUBLIC VIEWPOINT ASSESSMENT – DAYTIME

No.	Location	EIS project				Amendments and refinements
		Visual sensitivity	Occupied cells	Magnitude of change	Visual impact rating	Change to indicative transmission line structure location
3	View east from Cunninyeuk Road	Very low	52	Very high	Moderate	No change to visual impact rating Indicative transmission line structure is slightly closer (about 40m) to the photograph location
4	View east along Swan Hill Road	Very low	8	Low	Very low	No change to visual impact rating Indicative transmission line structure is slightly closer (about 50m) to the photograph location but not closer to the road
5	View south along Maude Road	Very low	25	Moderate	Low	No change to visual impact rating One transmission line structure slightly closer (about 20m) to the road

Note, the colours used in this table match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

As shown in Table 4-1 the EIS identified a very low visual impact from Viewpoint 3, View east from Cunninyeuk Road; and a low visual impact from Viewpoint 5: View south along Maude Road. The minor changes to the indicative transmission line structure locations would not alter these impacts.

Viewpoint 3 was identified as having a Moderate visual impact (see Table 4-1). The minor changes to the indicative location of the transmission line structures would also continue to result in a moderate visual impact due to the small change to the position of the indicative structure and the magnitude of change being very high, the maximum magnitude of change level (refer to Chapter 2, Methodology).

4.1.1.6. Private viewpoint impacts

For the EIS project there were no non-easement affected dwellings within rural setback. The minor refinements of the project footprint do not change the location of the transmission line corridor that was used for this calculation. Therefore, there continue to be no dwellings within the rural setback.

Similarly, the simple assessment undertaken in the EIS was undertaken for each dwelling, using the distance from the transmission line corridor combined with the maximum transmission structure height (76 metres) to identify a conservative field of view which was then used for the calculation of potential visual impact. As these distances and assumed structure height have not changed there would be no changes to the private viewpoint impact assessment.

Following the simple assessment in *Technical Paper 3 – Landscape character and visual impact assessment* of the EIS, three dwellings were identified as requiring an intermediate visual assessment. These three dwellings are shown in Table 4.2. Two of these dwellings (VNI010 and VNI038) were screened by vegetation and there was no visual impact (see Figure 4-2). The amended project, including any minor changes to the location of the indicative transmission line structures, would continue to have no visual impact.

TABLE 4.2 SUMMARY OF INTERMEDIATE ASSESSMENT – NSW/VICTORIAN BORDER TO DINAWAN SUBSTATION

Dwelling ID.	Distance to project footprint (metres)	Sensitivity	Bare earth		3D modelled view (with existing vegetation)	
			Magnitude of change	Potential visual impact rating	Magnitude of change	Potential visual impact rating
VNI010	468	Moderate	-	-	Nil	No impact
VNI025	693	Moderate	Moderate	Moderate	Very low	Low
VNI038	509	Moderate	Moderate	Moderate	Nil	No impact

Note, the colours used in this table match the colours in the Methodology tables, refer to Chapter 2 of this Addendum Technical Paper.

The intermediate assessment of VNI025 contained within the EIS confirmed that there would be a very low magnitude of change and a Low visual impact. The amended project, including any minor changes to the location of the indicative transmission line structures (in this case the nearest transmission line structures moves away from this receiver) would continue to be low (see Figure 4-2).

No further assessment is required. The amendments and refinements do not alter the assessment results for the EIS project.



FIGURE 4-1 AMENDED PROJECT FOOTPRINT AND INDICATIVE DISTURBANCE FOOTPRINT IN THE VICINITY OF VNI010



FIGURE 4-2 AMENDED PROJECT FOOTPRINT AND INDICATIVE DISTURBANCE FOOTPRINT IN THE VICINITY OF VNI038



FIGURE 4-3 AMENDED PROJECT FOOTPRINT AND INDICATIVE DISTURBANCE FOOTPRINT IN THE VICINITY OF VNI025

4.2. Network augmentation between the existing Wagga 330 kV substation and future Gugaa 500 kV substation, Livingstone Gully Road

4.2.1.Changes to visual impacts during construction

As noted in Section 2, Table 2-1 of this addendum, there is the potential for changes to visual impacts during construction in the daytime and at night. There are no changes to impacts during construction, to views from the air during construction or operations.

Relevant amendments and refinements:

- removal of the three previously identified combined temporary worker accommodation facilities and construction compound options along Gregadoo Road and Livingstone Gully Road, Gregadoo
- inclusion of a new construction compound along Livingstone Gully Road, Gregadoo adjacent to the future Gugaa 500 kV substation
- inclusion of new shunt reactors at the existing Wagga 330 kV substation and an additional construction compound adjacent to the existing Wagga 330 kV substation
- potential use of the Tarcutta accommodation facility (AC03) – established as part of the HumeLink project.

Magnitude of change:

The proposed amendments and refinements would result in the following changes to the visual magnitude of change described for the EIS project:

- all visual impacts from local roads and private dwellings identified to the three previously identified combined temporary worker accommodation facility and construction compounds for the EIS project would be removed
- the new construction compound along Livingstone Gully Road may be visible near the Gugaa 500 kV substation in views from surrounding dwellings and roads, however, this would not increase the overall magnitude of change due to the extensive construction already assumed for this area in the EIS
- the new shunt reactors and construction compound at the existing Wagga 330 kV substation site would have limited visibility from surrounding areas and be compatible with the character of the existing substation and other construction works occurring in the vicinity (see Attachment B). The dwellings closest to this substation would have limited views to the amendments and refinements due to intervening vegetation and landform
- potential use of the Tarcutta accommodation facility and compound (AC03) – established as part of the HumeLink project would potentially be visible from the three nearby dwellings. There would be a temporary visual impact from these dwellings during construction due to the continued use of the worker accommodation facility in this location (see Attachment C and Attachment D).

Visual impact:

The proposed amendments and refinements remove the temporary worker accommodation facility from the project at Gregadoo Road and locate the construction compounds near and within an existing and future substation at Wagga and Gugaa. There would be a temporary visual impact caused by the temporary worker accommodation facility proposed at Tarcutta.

Overall, these changes would result in a reduction in visual impacts from the project during construction in views between Wagga and Gugaa, and a visual impact for three additional dwellings the vicinity of the Tarcutta temporary worker accommodation facility.

4.2.2.Changes to visual impacts during construction at night

Due to the removal of the three previously identified combined temporary worker accommodation facilities and construction compound options along Gregadoo Road and Livingstone Gully Road, Gregadoo, there would:

- no longer be temporary changes to views from Gregadoo Road East and Livingstone Gully Road due to the removal of the Gregadoo Road facility
- no longer be temporary changes temporary visual impacts from private dwellings with a view to the proposed combined worker accommodation facility and construction compound, including views from VNI108 and VNI102, VNI103, VNI112, VNI114, VNI115 and VNI118; VNI157, VNI163, VNI160 and VNI161
- be temporary visual impacts from Mates Gully Road and dwellings with a view to the proposed additional worker accommodation facility at Tarcutta, which would be brightly lit at night. There would also be a temporary visual impact from three dwellings, VNI528; VNI529 and VNI530, who are located in close proximity to this proposed facility (see Attachment C and Attachment D).

4.2.2.1. Changes to visual impacts during operation

Relevant amendments and refinements:

- refinement of transmission line structure locations (along the amended transmission line corridor)

Visual impact:

The assessment of visual impact undertaken in the EIS for the network augmentation works between the existing Wagga 330 kV substation and future Gugaa 500 kV substation did not rely upon a methodology that took into consideration the exact transmission line structure locations.

Generally, the overall construction footprint and number of transmission line structures are consistent with what was assessed for the EIS project. The minor changes to transmission line structure positions do not affect the identified visual impacts from private or public viewpoints.

4.3. Summary of changes to visual impacts

Overall, the proposed amendments and refinements would have visual impacts that are consistent with outcomes presented in the *Technical Paper 3 – Landscape character and visual impact*, apart from the following changes:

- the removal of the day and night time visual impacts during construction due to the removal of the Fisher Lane, Wetuppa compound previously proposed for the NSW/Victorian border to Dinawan substation component. This includes the elimination of the visual impacts to private viewpoints VNI25, VNI26 and VNI27
- the removal of the day and night time visual impacts during construction due to the removal of the temporary worker accommodation facilities on Gregadoo Road and Livingstone Gully Road, Gregadoo
- the addition of temporary worker accommodation facility at Tarcutta would cause some additional visual impacts during the day and at night to three neighbouring dwellings and from Mates Gully Road.

5. Changes to cumulative impacts

An assessment of cumulative impacts was presented in Chapter 7 of *Technical Paper 3 – Landscape character and visual impact* of the EIS. The assessment considered the compounding effect of the project in combination with other projects in the vicinity (approved and subject to environmental assessment).

5.1. Additional projects in the vicinity

Relevant projects considered as having the potential to result in cumulative impacts with the EIS project were listed in Table 7.1, Chapter 7 of *Technical Paper 3 – Landscape character and visual impact* of the EIS.

Since the exhibition of the EIS, the planning status, environmental assessment documentation and/or estimated construction and operation timeframes of relevant future projects identified in the cumulative impact assessment have been updated as these projects progress through the planning system. A series of additional relevant future projects, in accordance with the Cumulative Impact Assessment Guidelines have also been identified and are described in Chapter 6 of the Amendment Report.

Four additional projects were identified for the assessment, including:

- Riverina Redevelopment Program
- Gregadoo Waste Management Centre Renewal
- Riverina Storage Pipeline (SSI-88716456)
- Booorooban (Saltbush) Wind Farm (SSD-70636459).

Booorooban (Saltbush) Wind Farm is closest to the NSW/Victoria border to Dinawan substation component of the project. The remaining projects are closest to the network augmentation works component of the project.

5.2. Changes to assessment of cumulative impacts

5.2.1. Previously identified projects

Table 7.2 and Table 7.3, Chapter 7 of *Technical Paper 3 – Landscape character and visual impact* of the EIS, described the cumulative impacts of the project with the previously identified relevant futures projects. The findings of this cumulative impact assessment have been reviewed in relation to the proposed amendments and refinements. The proposed amendments and refinements identified in the screening assessment (see Table 2-1), primarily affect landscape character and views during the construction phase of the project. As the proposed amendments and refinements do not alter the landscape character impacts of the VNI West project and reduce the visual impacts of the project during construction, there would be **no change** to the cumulative impacts identified in *Technical Paper 3 – Landscape character and visual impact* of the EIS.

Similarly, during operation, the proposed amendments and refinements identified in the screening assessment (see Table 2-1), result in impacts that are consistent in scale and nature with the impacts described for the EIS project. Therefore, there is **no change** to the assessment of cumulative impacts for previously identified projects.

5.2.2. Additional projects

Table 5-1 and Table 5-2 include a summary of the cumulative impacts of the VNI West amended project with the four additional projects. The assessment identifies the scale and nature of the cumulative impacts, as well as the project's contribution to these impacts. It is acknowledged that landholders hosting wind or solar farm projects would have entered into voluntary negotiated agreements with each respective developer.

Overall, there would not be an additional or increased cumulative landscape character or visual impacts due to the four additional projects identified.

In summary:

- the Boooroorban (Saltbush) Wind Farm is located over 18 kilometres from the amended project, while there is the potential for these projects to be seen sequentially, which would have a similar cumulative effect to what was identified in the EIS due in relation to the wind energy projects
- the landscape character and visual impacts of the Riverina Redevelopment Program; Gregadoo Waste Management; and Riverina Storage Pipeline projects would be limited as they would occur within existing sites used for a similar purpose or are underground and unlikely to be seen in the same views as the project.

TABLE 5-1 SUMMARY OF CHANGES TO CUMULATIVE IMPACTS – NSW/VICTORIAN BORDER TO DINAWAN SUBSTATION

Relevant future project	Description	Distance / interface	Cumulative impacts
Yanco Delta Wind Farm (MOD 2) (SSD-41743746)	Development of a proposed 1,500 MW wind farm comprising around 208 wind turbines (with a maximum tip height of up to 270 m), BESS and associated infrastructure across an area of around 42,000 ha.	The project traverses through the Yanco Delta Wind Farm project area and involves connection work to the Dinawan 330 kV substation	If approved, the changes to the Yanco Delta Wind Farm wind turbine layout would not alter the cumulative visual and landscape character impacts identified in the EIS as the number, height and extent of the wind turbines in the vicinity of VNI west (amended project)_ would not change. The Yanco Delta Wind Farm Mod 2 would also include additional transmission lines and an expansion of the proposed works at the Dinawan 330kV substation. The scale of this additional work would be consistent with the character of this area and these changes would not alter the visual impact from any public or private viewpoints. Overall, these changes would not have a material effect on the assessment of cumulative landscape character and visual impacts described in the EIS.
Boooroorban (Saltbush) Wind Farm (SSD-70636459)	Proposed 400 MW wind farm with co-located solar farm and battery within South Wes REZ	Over 18 kilometres north of the VNI disturbance footprint at closest.	Comprising up to 68 wind turbines, the Boooroorban Wind Farm's wind turbines would potentially be visible from some viewpoints that view the project (in clear visibility conditions). It is, however, very unlikely the amended project's transmission line structures would be visible from Boooroorban Wind Farm, as transmission line structures have very limited visibility over long distances. They may, however, be seen sequentially when travelling through the landscape. The cumulative visual impact of the amended project to views of Boooroorban (Saltbush) Wind Farm would therefore be minimal at this distance. The project is located within a renewable energy zone, and wind energy projects could be expected to be a visual component and consistent with the character of the zone.

TABLE 5-2 SUMMARY OF CHANGES TO CUMULATIVE IMPACTS – NETWORK AUGMENTATION WORKS

Relevant future project	Description	Distance / interface	Cumulative impacts
Riverina Redevelopment Program	Expansion of facilities and infrastructure at the Royal Australian Air Force (RAAF) Base Wagga, Blamey Barracks, Kapooka and the Albury Wodonga Military Area.	Around 9.4 kilometres north-west of the VNI West disturbance area	The Riverina Redevelopment Program occurs within existing RAAF sites already occupied by Defence. The project upgrades aging building infrastructure and would not have an impact on landscape character or visual impact beyond the existing RAAF sites identified. There would be no cumulative landscape character or visual impact with the amendments and refinements Amended project.
Gregadoo Waste Management Centre Renewal	Upgrades to an existing Wagga Wagga Council waste management centre	Adjacent to the VNI West disturbance area (within around 300 metres) south of Wagga Wagga 33kV substation	The Gregadoo Waste Management Centre Renewal occurs within an existing Council waste management site already in use for waste management. The project includes construction of new waste cells, rehabilitation of an access road, and new plant and storage shed. The project would not have an impact on landscape character or visual impact beyond the existing waste management site. There would be no cumulative landscape character or visual impact with the Amended project.
Riverina Storage Pipeline (SSI-88716456)	Construction of a loop of 112 km gas storage pipeline to store 200-500 terajoule of energy	Almost 14 kilometres west of the VNI disturbance footprint. The majority of the pipeline would be sited at Cloughs Road, Yarragundy, and extend to Uranquity.	The proposed gas storage pipeline (approximately 112 kilometres in length) would be buried and the project includes water storage dams and colocation of compression facilities with existing facilities. The operational pipeline and its associated infrastructure would not be visible from the amended project and would not alter the landscape character of the study area. There would be no cumulative landscape character or visual impact with the Amended project.

6. Management and mitigation measures

6.1. Mitigation measures

Mitigation measures were included in *Technical Paper 3 – Landscape character and visual impact* (refer to Table 6-1). As the changes to landscape character and visual impacts are minor, there are no changes to the mitigation measures required due to the proposed amendments and refinements. The proposed mitigation measures presented in *Technical Paper 3* are shown in Table 6-1.

TABLE 6-1 PROPOSED MITIGATION MEASURES

Reference	Impact	Mitigation measures	Timing	Applicable location(s)
LV1	Visual impact from vegetation clearing	Vegetation clearance for the project will be limited to the minimum extent necessary for construction and operation to maximise existing visual screening and retention of the existing landscape character. Retained vegetation will be clearly demarcated on site as 'exclusion zones' prior to the commencement of construction. Construction personnel will be made aware of exclusion zones as part of environmental site induction(s).	Pre-construction, construction, operation	All locations
LV2	Visual impact from access tracks	Temporary and permanent access tracks will be designed to minimise vegetation removal, changes to landform, and visual impacts where practicable.	Pre-construction and construction	All locations
LV3	Visual and landscape character impacts due to loss of protected trees	The Tree Protection Zone of retained trees within or immediately adjacent to the disturbance area will be managed in accordance with AS 4970-2009 Protection of Trees on Development Sites where practicable to minimise the impact of the works on the long-term health of these trees.	Pre-construction and construction	All locations
LV4	Disturbance from construction lighting	Lighting at construction compounds and temporary workforce accommodation facility (s) will be designed and operated in accordance with Australian and New Zealand Standard AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting.	Pre-construction and construction	Construction compound and temporary workforce accommodation facility(s)

References

- Australian Institute of Landscape Architects Queensland, 2018, *Guidance Note for Landscape and Visual Assessment*
- IRIS Visual Planning and Design, 2023, *HumeLink - EIS Technical Report 8: Landscape Character and Visual Impact Assessment*
- IRIS Visual Planning and Design, 2024, *HumeLink - Technical Report 08, Landscape Character and Visual Impact Assessment Addendum*
- IRIS Visual Planning and Design, 2025, *Victoria to New South Wales Interconnector West (VNI West) (NSW) - Technical Paper 3 – Landscape character and visual impact assessment of the EIS.*
- Landscape Institute and Institute of Environmental Management and Assessment, 2013, *Guidelines for Landscape and Visual Impact Assessment*, Third Edition.
- NSW Department of Planning, Housing and Infrastructure (NSW DPHI), 2024, *Transmission Guideline: Technical Supplement for Landscape and Visual Impact Assessment*
- NSW Environmental Planning and Assessment Act 1979 (EP&A Act)*
- Standards Australia Committee, 2023, *AS4282: 2023 Australian/New Zealand Standard: Control of the obtrusive effects of outdoor lighting.*
- Transgrid, 2024, *Victoria to NSW Interconnector West (VNI West) (NSW) Final Route Report - NSW*
- Transport for New South Wales (TfNSW), 2023, *Guideline for landscape character and visual impact assessment, Environmental impact assessment practice note EIA-N04*

Attachments

Attachment A - Location of existing construction storage compound site in Deniliquin



North



Amended project footprint

Contour (20m)

Contour (5m)

0 0.5
Kilometres

Attachment B - Location of Amended project footprint at the existing Wagga 330 kV substation



North



Amended project footprint



Dwellings



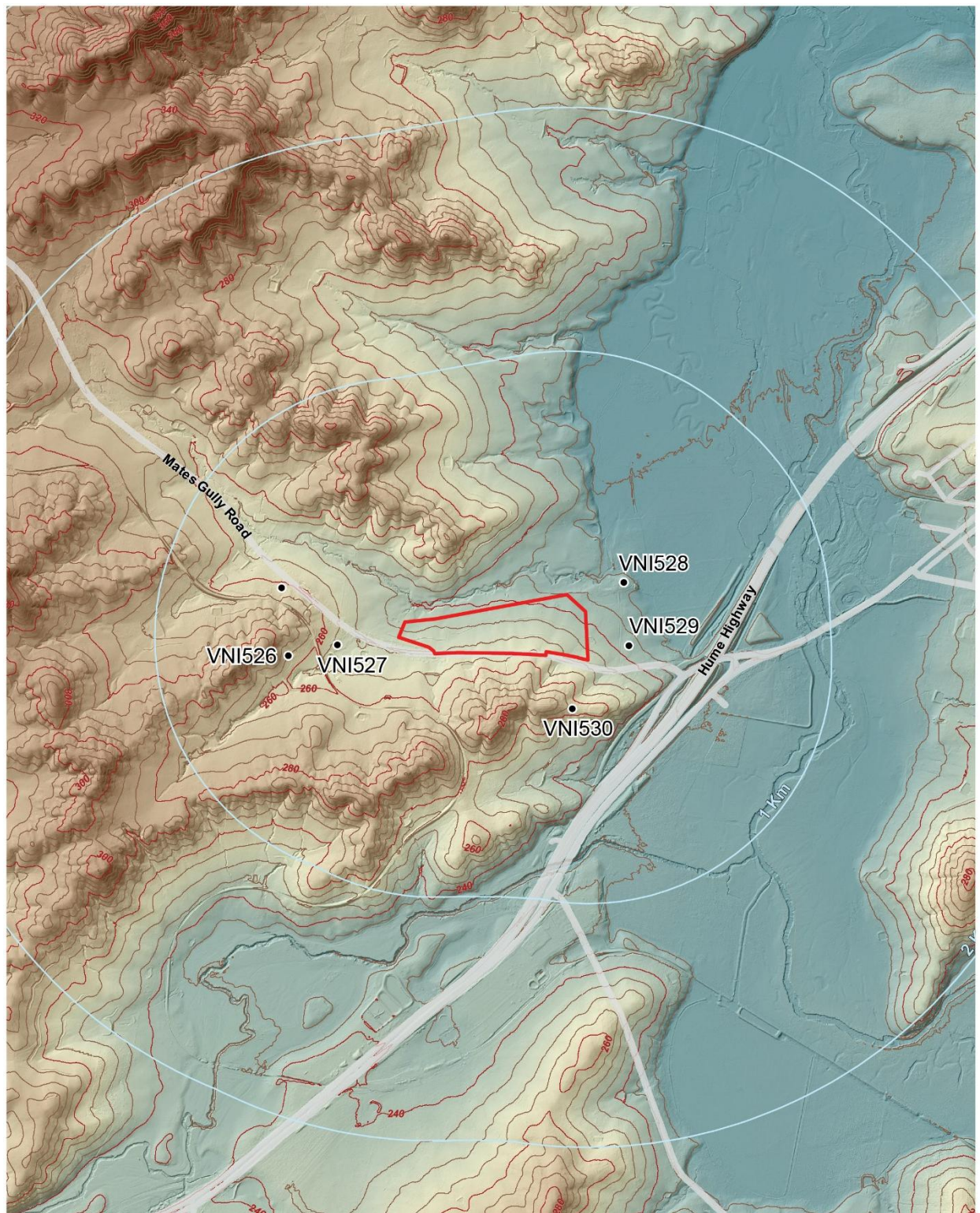
Contour (20m)



Contour (5m)

0 0.5
Kilometres

Attachment C - Location of the Tarcutta accommodation facility – Topography



North



Amended project footprint



Dwellings



Contour (20m)



Contour (5m)

Elevation:



High

Low

0 0.5

Kilometres

Attachment D - Location of the Tarcutta accommodation facility - Air photograph



North



Amended project footprint



Dwellings



Contour (20m)



Contour (5m)

0 0.5
Kilometres