



Proposed Goulburn River Solar Farm

Addendum

LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT

Prepared for Umwelt Pty Limited
2023

envisage

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Contents

1	Introduction	3
1.1	Purpose of this report.....	3
1.2	Methodology	3
2	Proposed amendments	4
3	Landscape character impact with amendments.....	10
3.1	Amendments that may affect landscape character.....	10
3.2	Landscape character zones.....	10
3.3	Assessment of landscape character impact.....	11
4	Visual impact with amendments.....	13
4.1	Amendments that may affect views	13
4.2	Assessment viewpoints	13
4.3	Assessment of impact	17
4.4	Performance objectives and mitigation.....	21
4.5	Residual visual impact	21
4.6	Cumulative visual impact.....	21
5	Key findings.....	24
5.1	Summary of visual changes.....	24
5.2	Landscape character impact with amendments.....	24
5.3	Visual impact with amendments.....	25
5.4	Performance objectives	26
6	References.....	27
	Appendix A.....	28

Figures

Figure 2-1: Location of Proposed Amendments	4
Figure 2-2: Proposed vegetation clearance, Golden Highway / Ringwood Road intersection	7
Figure 2-3: Proposed tree clearance, Ringwood Road	8
Figure 2-4: Proposed disturbance footprint, Wollara Road	9
Figure 3-1: Photographs illustrating landscape character in the vicinity of proposed road upgrades	10
Figure 4-1: Receivers – Wollara Road.....	15
Figure 4-2: Receivers – Ringwood Road	16

Tables

Table 1-1: Matrix of impact.....	3
Table 2-1: Description of Amended Project and visible changes	5
Table 3-1: Assessment of landscape character impacts.....	12
Table 4-1: Visibility of R9 and R21	13
Table 4-2: Consolidated viewpoints for assessment.....	16
Table 4-3: Updated visual impact assessment – Project with amendments	18
Table 4-4: Mitigation measures	22
Table 5-1: Summary of assessment of landscape character impacts	25
Table 5-2: Summary of visual impact assessment impacts.....	26

1.1 Purpose of this report

This report is an addendum to the landscape character and visual impact assessment (LCVIA¹) which assessed a proposed Solar Farm and Battery Energy Storage System (BESS) at Goulburn River near Merriwa (the EIS Project). The LCVIA informed the Environmental Impact Statement (EIS) and development application for the Project, submitted to the Department of Planning and Environment (DPE) for determination in May 2023.

Following exhibition of the Project, amendments have been proposed by the proponent, Lightsource Development Services Australia Pty Ltd (Lightsource bp), to address community and agency submissions, and technical aspects of the Project. Amendments include road upgrades and modifications to the solar array and BESS (referred to as the 'Amended Project').

This addendum to the LCVIA describes and assesses the potential landscape character and visual impacts that may result from the Amended Project in the following sections:

- Section 2** Describes the proposed amendments.
- Section 3** Addresses potential change to landscape character impacts.
- Section 4** Addresses potential change to visual impact, including lighting and cumulative impact.

1.2 Methodology

The methodology applied in this addendum is consistent with that applied in the LCVIA, and follows the methodology prescribed in *Technical Supplement – Landscape and Visual Impact Assessment* which accompanies the NSW Government's *Large-Scale Solar Guideline* (August 2022). In summary, impact is determined by combining *sensitivity* to change, with the *magnitude of change* that would result from the Project. The possible level of impact ranges from 'high' to 'very low' as shown in [Table 1-1](#).

Table 1-1: Matrix of impact²

	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

However, the *Technical Supplement* applies only to large-scale solar farms, and the amendments include road upgrades located beyond the Project Area. Therefore, an alternative NSW Government methodology has been applied to assess the road upgrades: '*Guideline for Landscape Character and Visual Impact Assessment - Environmental Impact Assessment Guidance Note EIA-N04*'; Transport for NSW, 2020.

The Transport for NSW methodology is similar to the *Technical Supplement*, in that it combines ratings of *sensitivity* and *magnitude* of change, however, it uses qualitative assessment (of scale, distance and contrast) to determine *magnitude* rather than quantitative cell count within a 180-degree photomontage.

An additional site inspection was undertaken 1 September 2023 to view the locations affected by the proposed amendments. The day of the inspection was dry and sunny.

¹ Envisage Consulting, April 2023, *Goulburn River Solar Farm, Landscape Character and Visual Impact Assessment*. The LCVIA is referred to in this report as the 'original assessment'.

² Table 9 from the *Technical Supplement*. Colour added by Envisage

Lightsource bp propose the following amendments to the EIS Project:

- 1 Upgrading the intersection of the Golden Highway and Ringwood Road.
- 2 Additional upgrades to Ringwood Road.
- 3 Upgrading parts of Wollara Road.
- 4 Increasing BESS capacity (centralised BESS).
- 5 The option of a decentralised BESS (and the choice to host both centralised and decentralised BESS units)
- 6 Minor Project layout modifications (which, together, reduce the size of the development footprint by around 7 ha), being:
 - a. Re-aligning the Project Area to avoid a Travelling Stock Route.
 - b. Relocating solar arrays within the development footprint to avoid habitat.
- 7 Increasing the width of two internal access roads to approximately 10 m.
- 8 Constructing an additional transmission tower adjacent to the BESS/substation.
- 9 Revised approach for workforce accommodation.

The location of proposed amendments is shown in Figure 2-1. Visual changes associated with the Amended Project (compared to the EIS Project), are described in Table 2-1.

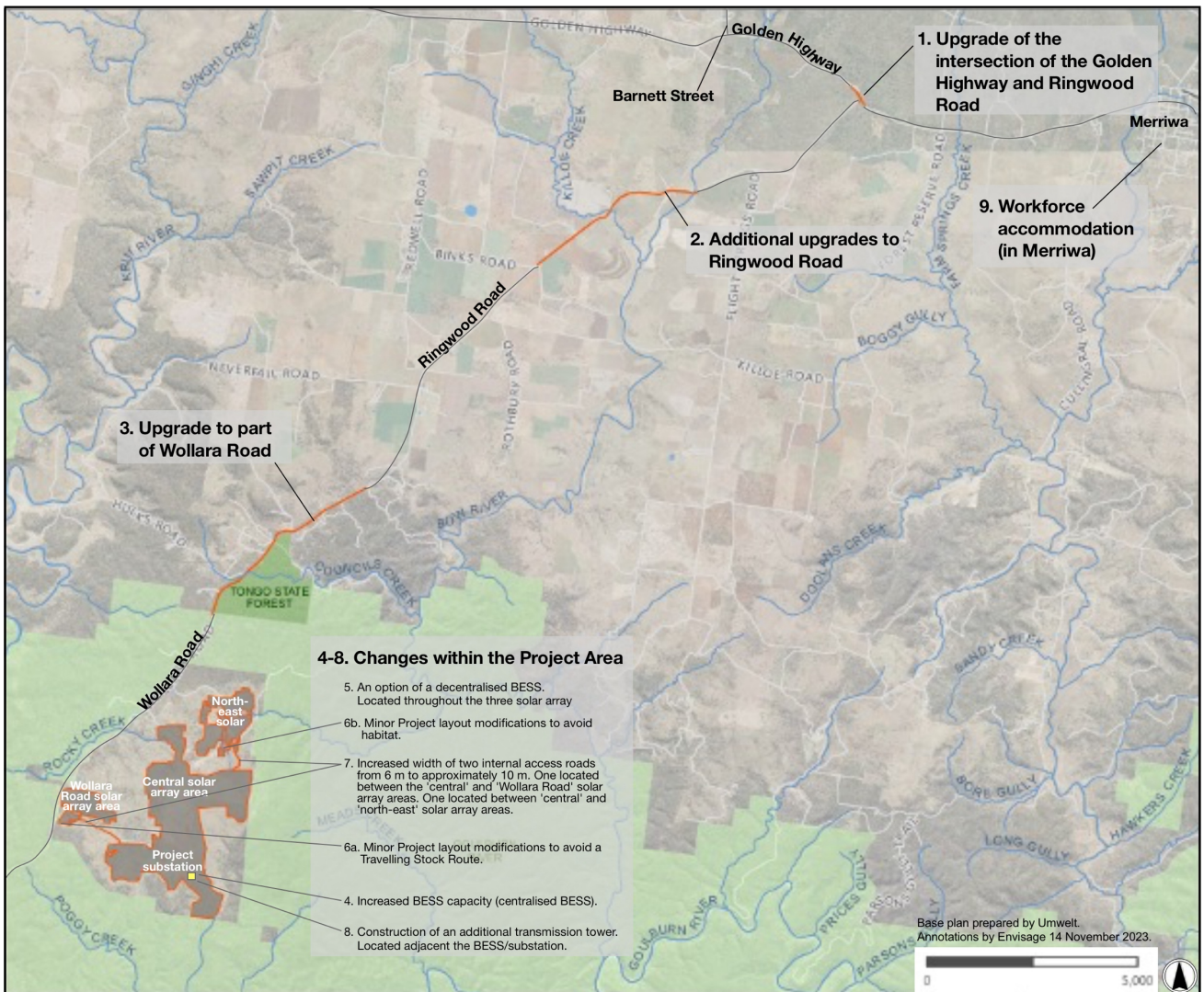


Figure 2-1: Location of Proposed Amendments

Table 2-1: Description of Amended Project and visible changes

Amendment	Description of amendment / Visual changes compared to EIS Project	Assessment required? / Where addressed
1. Golden Highway and Ringwood Road upgrade	<p>The EIS Project did not include an upgrade to the intersection of Ringwood Road and the Golden Highway. An intersection upgrade is now proposed to:</p> <ol style="list-style-type: none"> Facilitate 'left in left out' movement of construction vehicles (includes the use of a vehicle turn-around facility on Barnett Street) Improve safety/sight lines at the intersection. <p>The Amended Project includes:</p> <ul style="list-style-type: none"> Pruning of vegetation and likely removal of around 6 mature trees on the western side of the intersection and pruning of vegetation on the eastern side of the intersection. The proposed vegetation clearance area is shown on Figure 2-2. Embankment shaping (cut and fill) for a wider road surface, including minor lane widening on the eastern side of the intersection, a new 325 m long acceleration lane and extension of the deceleration lane on the western side of the intersection. Formalisation of a bus stop. Relocating power poles. 	<p>The potential impact to landscape character is assessed in Section 3.</p> <p>The potential impact to views is assessed in Section 4.</p>
2. Additional upgrades to Ringwood Road.	<p>The EIS Project included a 1.8 km upgrade to Ringwood Road (between Bow River and Killoe Creek). Ringwood Road is a local sealed road around 5.5 m wide. The Amended Project includes additional works on Ringwood Road comprising realignment, widening, and sealing of an additional 1.6 km section between Killoe Creek and Binks Road, increasing the total length of Ringwood Road to be upgraded to 3.4 km.</p> <p>The proposed road upgrade involves:</p> <ul style="list-style-type: none"> Widening an existing 5.5 m sealed road to 8 m for an additional 1.8 km The upgrade being fully within the existing road corridor. No change to the EIS Project inclusions of a stockpile, temporary construction side tracks, and possible additional signage. Removal of approximately 20 trees. The proposed tree clearance area is shown on Figure 2-3. 	<p>The potential impact to landscape character is assessed in Section 3.</p> <p>The potential impact to views is assessed in Section 4.</p>
3. Upgrade to part of Wollara Road.	<p>The EIS Project did not include an upgrade to Wollara Road. Wollara Road is a local, partly sealed road. The Amended Project includes an upgrade to realign, widen, and seal a 4.7 km unpaved section of Wollara Road between the Goulburn River National Park boundary and 1621 Wollara Road (around 2 km north of the Project Area, to around 6.7 km north of the Project Area).</p> <p>The proposed road upgrade involves:</p> <ul style="list-style-type: none"> Changing an unsealed road surface to an 8 m wide, bitumen-sealed road surface with 0.5 m unsealed shoulders (4.7 km long). The upgrade being fully within the existing road corridor. Removing vegetation within the road corridor for 4.7 km. The proposed disturbance area is shown on Figure 2-4. 	<p>The potential impact to landscape character is assessed in Section 3.</p> <p>The potential impact to views is assessed in Section 4.</p>
4. Increased capacity of centralised BESS	<p>The EIS Project included a centralised BESS with 280 MWp / 570 MWh capacity, housed in approximately 33 BESS containers, adjacent to the substation, not seen from public viewpoints. The Amended Project increases the capacity of the centralised BESS by 170 MWp / 330 MWh to 450 MWp / 900 MWh, and:</p> <ul style="list-style-type: none"> Does not increase the size of the development footprint. Does not change the number, height, or type of BESS modules proposed. Would remain located adjacent to the proposed substation, not seen from public viewpoints. 	<p>There is no change to the LCVIA assessment of impact to landscape character or views.</p>
5. Decentralised BESS	<p>The EIS Project did not include a decentralised BESS, or the option to host both centralised and decentralised BESS units). The Amended Project includes a decentralised BESS option with 560 battery containers and 560 DC-DC converters located next to inverters within the development footprint. An additional 36 inverters would be required. The capacity of the proposed decentralised BESS option would be 580 MWp / 1160 MWh.</p> <p>The proposed decentralised BESS and additional inverters:</p> <ul style="list-style-type: none"> Would not change the development footprint. Would not exacerbate the extent of visual change to occur in the landscape (from agricultural to solar farm). May be seen from Wollara Road. 	<p>There is no change to the LCVIA assessment of landscape character from the proposed decentralised BESS, or the option to host both centralised and decentralised BESS</p> <p>The potential impact to views is assessed in Section 4</p>

Amendment	Description of amendment / Visual changes compared to EIS Project	Assessment required? / Where addressed
6. Project layout modifications	<p>The EIS Project development footprint occupied around 799.5 ha located within three distinct, cleared areas:</p> <ul style="list-style-type: none"> • 1 x adjacent to Wollara Road (the smallest of the three areas) • 1 x centrally located (the largest of the three areas) • 1 x an area in the north-east. <p>Only one of the three areas (the area adjacent to Wollara Road) would be seen from external viewpoints.</p> <p>The Amended Project would:</p> <ol style="list-style-type: none"> a) Remove Project infrastructure (including fencing, landscaping, and solar panels) from Travelling Stock Route (TSR44841) within the area adjacent to Wollara Road. b) Relocate solar panels from the north-east area to previously unused areas (also within the north-east) to increase avoidance of plant community types and threatened species habitat. <p>Proposed amendments to the layout:</p> <ul style="list-style-type: none"> • Reduce the Project Area from 2,000 ha to 1996.5 ha and the development footprint from approximately 799.5 ha to approximately 792.2 ha (around 7.3 ha). • Changes to avoid threatened species habitat (in the north-east) would not be seen from public viewpoints. • Changes to avoid the TSR (adjacent to Wollara Road) may result in a visible change. Under the EIS Project the panels were located south-west of the existing residence. Under the Amended Project the panels would be relocated to the east of the existing residence. Therefore, there would be fewer panels in the immediate vicinity of Wollara Road. • Changes do not alter the height, or type of solar modules proposed, and general extent of agricultural area affected by the Project, and therefore, do not change the predicted impact to landscape character determined in the original Proposal. 	<p>There is no change to the LCVIA assessment of impact to landscape character.</p> <p>The potential impact to views is assessed in Section 4.</p>
7. Increased width of two internal access roads	<p>The EIS Project included internal access tracks (4 m and 6 m wide) allowing for site maintenance. The Amended Project increases the width of two internal access roads to approximately 10 m, to accommodate subterranean transmission corridors proposed to travel adjacent to the internal access roads.</p> <p>The proposed wider internal roads:</p> <ul style="list-style-type: none"> • Would not change the size of the development footprint. • Would not exacerbate the extent of visual change to occur in the landscape (from agricultural to solar farm). • One of the two proposed roads would be within the solar panel area adjacent to Wollara Road. • The other road would be located between the central and north-east solar array areas, not seen from external viewpoints. 	<p>There is no change to the LCVIA assessment of landscape character.</p> <p>The potential impact to views is assessed in Section 4.</p>
8. Construction of an additional transmission tower	<p>The EIS Project did not include new transmission towers. The Amended Project includes one new transmission tower to be installed within the existing 500 kV transmission line easement within the Project Area, adjacent to an existing transmission tower. The additional transmission tower would be constructed at a height of approximately 65 m, in line with the existing transmission towers.</p> <p>The additional transmission tower:</p> <ul style="list-style-type: none"> • Would not change the size of the development footprint. • Would be located adjacent to an existing tower, which is not seen from Wollara Road. • Would not be seen from accessible public locations. 	<p>There is no change to the LCVIA assessment of impact to landscape character or views.</p>
9. Workforce accommodation	<p>The original LCVIA scope did not include workforce accommodation. The Amended Project includes the option of using an accommodation camp for up to 300 personnel (in Merriwa), along with other alternative accommodation options in and around Merriwa. The workforce accommodation amendment is not within the scope to be assessed in this addendum to the LCVIA.</p>	<p>There is no change to the LCVIA assessment of impact to landscape character or views.</p>