

9 May 2024

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From: Alison Dodds, Envisage Consulting

Ref: 19822 Addendum

**Proposed Calala battery energy storage system**

Addendum to Landscape Character and Visual Impact Assessment

## 1.0 Purpose of this addendum

This report is an addendum to the *Landscape Character and Visual Impact Assessment (VIA)*<sup>1</sup> prepared to assess a proposed battery energy storage system (BESS), near Calala (the Project). The VIA informed the Environmental Impact Statement (EIS) and Project development application, submitted to the (former) Department of Planning and Environment for determination in 2023 (now the Department of Planning, Housing and Infrastructure).

Following the exhibition of the EIS Project, and in response to submissions received, the proponent, Equis, has amended the Project to reduce environmental impacts (referred to as the 'Amended Project'). This addendum describes changes to the assessed visual impact that result from the Amended Project.

## 2.0 Project amendments

Proposed amendments to the EIS Project are described in [Table 1](#). The Amended Project site plan is shown [Figure 1](#), and the Amended Project site layout is shown [Figure 2](#). The amended Project would be positioned on the same land parcel and generally within the same footprint, however, the BESS facility would be smaller in size and operate at a reduced output capacity.

*Table 1: Comparison of visible changes between EIS Project and Amended Project*

Project element	EIS Project	Amended Project	Description of <b>visual</b> change/s to be addressed in this addendum?
Batteries and associated equipment	Wartsila and SMA battery technology.	Tesla Megapack 2 XL.	Alternative battery technology; inclusion of fewer, narrower, battery enclosures; and reduced storage duration, has reduced battery area footprint by 60%.
	960 battery storage enclosures + 120 inverters and transformers + 6 Ring Main Units (RMU) and auxiliary transformers.	164 battery enclosures + 82 transformers + 16 RMU.	
	Battery enclosures 2.8 m tall x 3.2m wide.	Battery enclosures approx. 3 m tall x 1.6 m wide.	
	Storage duration 4-hour battery.	Storage duration 2-hour battery.	
	Maximum amount of stored energy = 1,200 MWh.	Maximum amount of stored energy = 600 MWh.	
	Colour matt grey or other rural landscape colour in matt finish. Pre-fabricated colourbond cladding.	Colour white. Pre-fabricated cladding material.	
Substation	About 100 m long x around 75 m long, housing components of various heights, including auxiliary transformers around 9 m high and narrow lightning masts around 25 m high.	No change.	No change.
Ancillary site buildings	Pre-fabricated site buildings: <ul style="list-style-type: none"> <li>- Control room and switchroom approximately 4.1 m wide x 6.3 m</li> </ul>	No change.	No change.

<sup>1</sup> Envisage Consulting, July 2022, *Proposed Calala Battery Energy Storage System, Landscape Character and Visual Impact Assessment*.

Project element	EIS Project	Amended Project	Description of <b>visual</b> change/s to be addressed in this addendum?
	<p>high x 12 m long for the control room and x 24.5 m long for the switchroom</p> <ul style="list-style-type: none"> <li>- Operations and maintenance building approximately 3 m wide x 2.7 m high x 25 m long.</li> <li>- Warehouse around 12 m wide x 12 m long x 6 m high.</li> </ul>		
Noise attenuation walls	<p>4 m tall noise walls proposed along the northern boundary of the BESS facility and around the transformer in the proposed substation (HV transformer noise wall).</p> <p>A 5 m tall noise walls proposed along the western boundary of the BESS facility.</p>	One noise wall proposed along the western boundary of the BESS facility, closer to the BESS than previous western noise wall position.	Removal of the northern noise wall and HV transformer noise wall. Repositioning and reduced extent of western noise wall.
Transmission poles	None proposed.	No change.	No change.
Setbacks and screening	Trees along the southern boundary of the BESS facility retained, but no additional landscaping or screening	New 5 m wide landscape area proposed along the southern boundary of the BESS facility.	Retention of existing trees along the southern boundary, and opportunity for landscape screening along southern boundary of the BESS facility.
	Transmission line along southern boundary (Lot 17 - BESS site)	Transmission line setback approximately 33 m from southern boundary to enable landscape screening along southern boundary.	
	Noise wall along western boundary of BESS facility.	New grassed earth mound proposed west of western noise wall. Mound would be approximately 130 m long and up to 5 m tall.	New grassed mound along western side of western noise wall.
	Asset Protection Zone (APZ):	APZ revised:	BESS facility located further from the southern boundary.
	<ul style="list-style-type: none"> <li>- 37 m wide north.</li> <li>- 26 m wide east.</li> <li>- 10 m wide south.</li> <li>- 22 m wide west.</li> </ul>	<ul style="list-style-type: none"> <li>- 10 m wide north.</li> <li>- 25 m wide east.</li> <li>- 20 m wide south.</li> <li>- 10 m wide west.</li> </ul> <p>Western and northern APZ reduced to 10 m wide, southern APZ increased to 20 m.</p>	
Tamworth substation connection	Underground connection to Tamworth substation.	Connection infrastructure at the Tamworth substation includes minor switchyard extension works.	No visual change to the BESS facility.
Civil works	Two construction laydown locations	Construction laydown area combined and repositioned, temporary stockpile area added.	No visible change to BESS Project on completion of construction.
	Benching to construct BESS facility. Excess soil disposed offsite.	Benching reduced and soil retained onsite.	Reduced BESS facility footprint. New grassed mound along western side of western noise wall.
Oversize Overmass (OSOM) vehicles	4 OSOM vehicle trips	7 OSOM vehicle trips.	No visible change to BESS Project Area.

Figure 1  
Amended Project site plan

PROPOSED CALALA BATTERY ENERGY STORAGE SYSTEM - ADDENDUM LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT

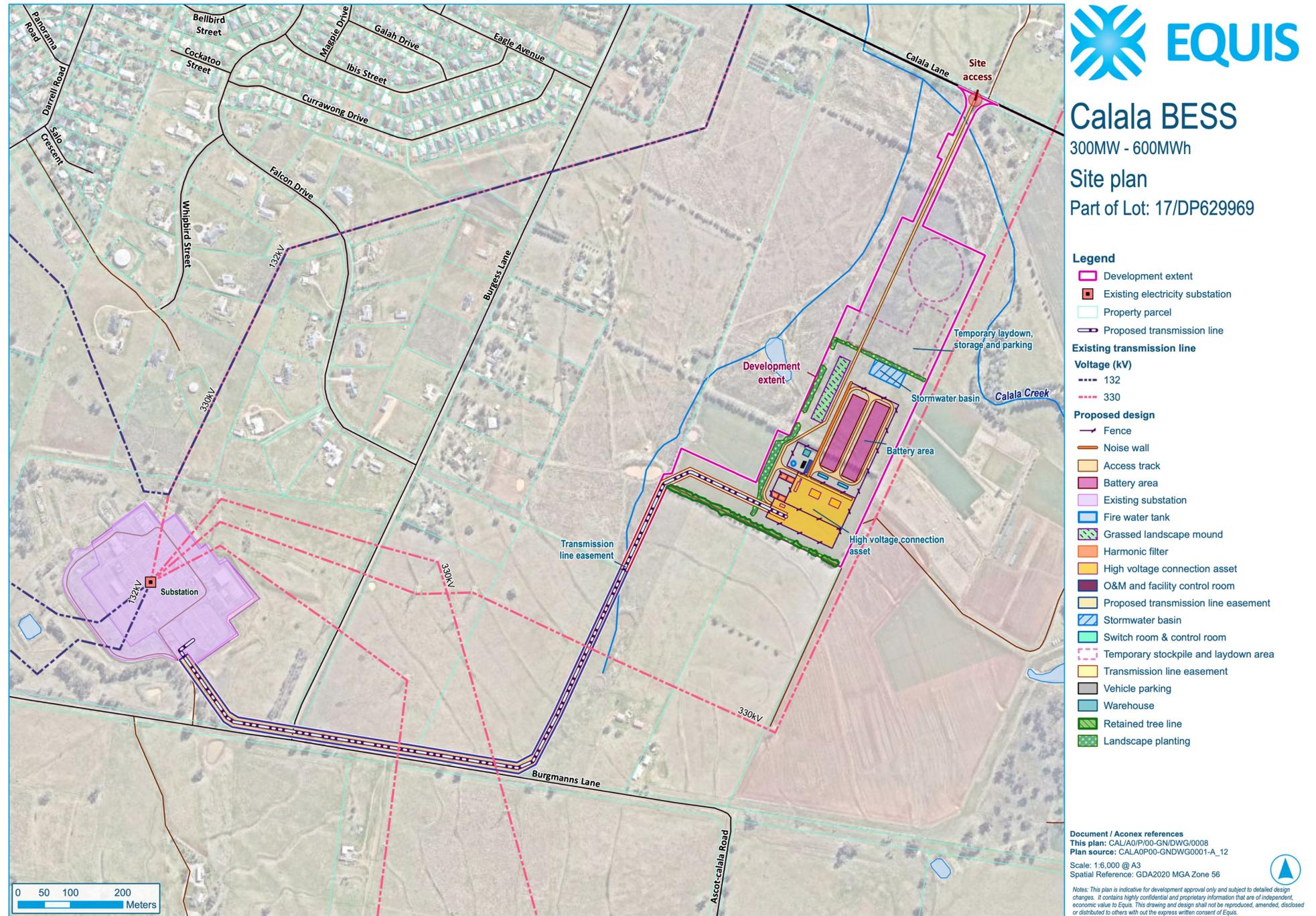


Figure 2  
**Amended Project site layout**

PROPOSED CALALA BATTERY ENERGY STORAGE SYSTEM - ADDENDUM LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT



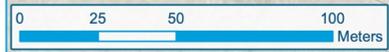
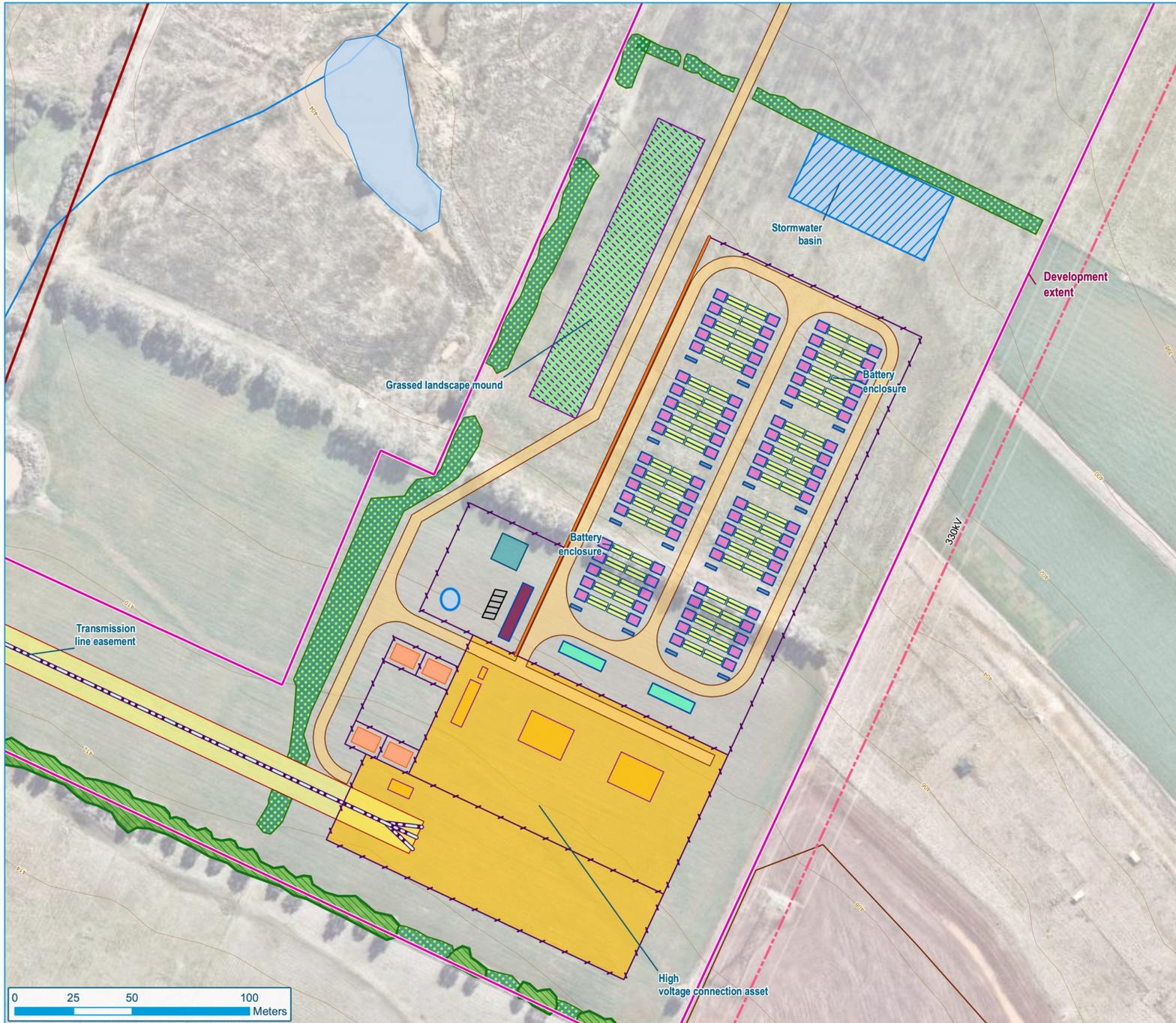
**Calala BESS**  
 300MW - 600MWh  
 Site layout  
 Part of Lot: 17/DP629969

**Legend**

- Development extent
- Subject site
- Existing transmission line**
- Voltage (kV)**
- 330
- Proposed design**
- Fence
- Noise wall
- Transmission line - underground (330 kV)
- Access track
- Battery enclosure
- Fire water tank
- Grassed landscape mound
- Harmonic filter
- High voltage connection asset
- Medium voltage switchgear
- Medium voltage transformer
- O&M and facility control room
- Stormwater basin
- Switch room & control room
- Transmission line easement
- Vehicle parking
- Warehouse
- Retained tree line
- Landscape planting

**Document / Aconex references**  
 This plan: CALA/FP00-GND/WG/0007  
 Plan source: CALA0P00-GND/WG0001-A\_12  
 Scale: 1:1,500 @ A3  
 Spatial Reference: GDA2020 MGA Zone 56

Notes: This plan is indicative for development approval only and subject to detailed design changes. It contains highly confidential and proprietary information that are of independent economic value to Equus. This drawing and design shall not be reproduced, amended, disclosed or distributed to others without the express written consent of Equus.



### 3.0 Amended landscape concept plan

The concept landscape plan included in the VIA has been updated to address the Amended Project layout with:

1. Landscape screening along the southern Amended Project boundary (the Amended Project set back from the southern boundary allows for 5 m wide landscape screening).
2. A 5 m high grassed mound along the western boundary, and
3. Revised landscape screening along the northern Amended Project boundary (the Amended Project no longer includes a northern noise wall).

The updated concept landscape plan is shown in [Figure 3](#). There is no change to the concept landscape planting strategy and species. As stated in the VIA, a detailed landscape plan would be prepared during the detailed design stage. Local Landcare and Council are to be consulted during development of the detailed landscape plan to refine the concept landscape plan.

### 4.0 Changes to visual impact

#### Amended Project's visual changes

Upon completion, the main **visual** changes associated with the Amended Project compared to the EIS Project would be:

- A smaller battery area (reduced by 60%).
- Battery enclosures lighter in colour.
- Removal of northern noise wall and HV transformer noise wall within the proposed substation, and repositioning of western noise wall.
- Retention of existing trees along the southern boundary.
- Setback of proposed infrastructure from southern boundary.
- Newly proposed landscaping along the southern boundary.
- Newly proposed 5 m high grassed earth mound along western side of Project Area..

#### Assessed viewpoints

The VIA identified and assessed 12 viewpoints with potential views of the EIS Project. The viewpoint locations are shown [Figure 4](#) and comprised:

- Four private residences (identified as R1, R8, R9 and R12)
- Three representative viewpoints (representing clusters of residences in the General Residential Zone, the Large Lot Residential Zone, and Nemingha / East Tamworth), and
- Five public (or institutional) viewpoints representing:
  - three surrounding roads (Burgess Lane, Burgmanns Lane and Calala Lane),
  - the closest public lookout (Flagstaff Mountain) and
  - institutional facilities to the east (Including Farrer Memorial High School, NSW Department of Primary Industries, Tamworth Agricultural Institute and NSW Office of Water).

These viewpoints have been re-assessed for the Amended Project (including the amended landscape concept plan). [Figure 5](#) includes a photograph of the existing view from several of the assessed viewpoints (these same images were included in the VIA).

Figure 3  
**Amended Project concept landscape**

PROPOSED CALALA BATTERY ENERGY STORAGE SYSTEM - LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT



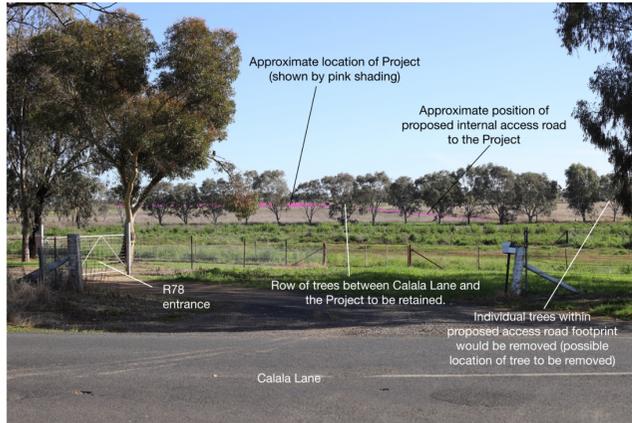
Figure 4  
VIA assessed viewpoints

PROPOSED CALALA BATTERY ENERGY STORAGE SYSTEM - LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT

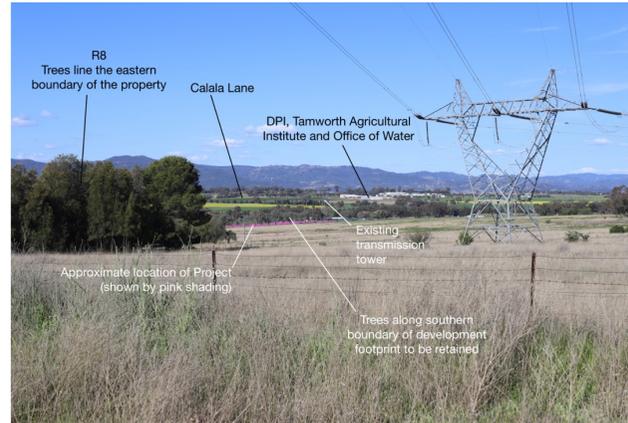


**Figure 5**  
**Photographs of existing view from some VIA assessed**

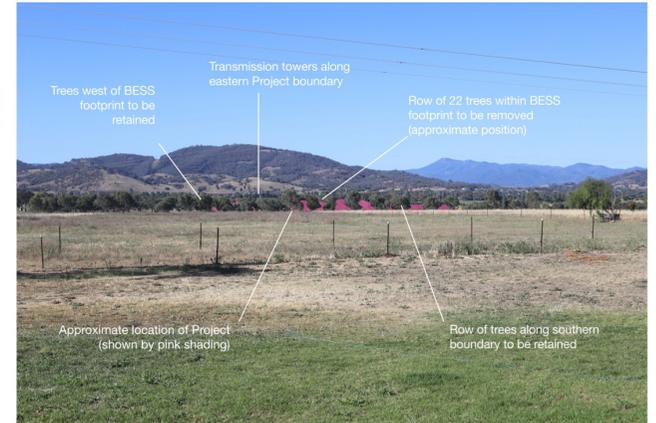
PROPOSED CALALA BATTERY ENERGY STORAGE SYSTEM - ADDENDUM LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT



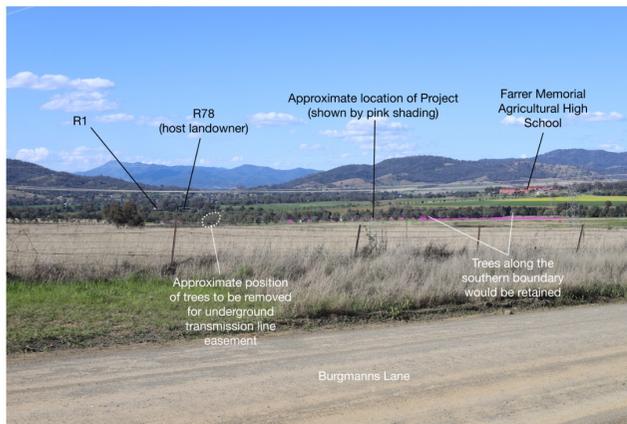
**R1 (private residential viewpoint): View from Calala Road entrance to R1 (nearest public viewpoint to R1), looking south**



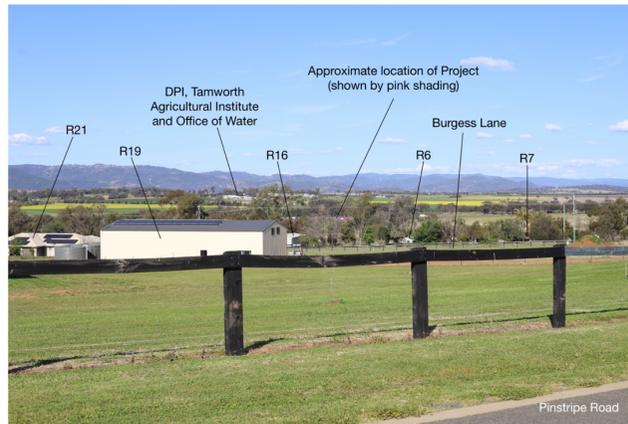
**R8 (private residential viewpoint) and Burgess Lane (public viewpoint): View from Burgess Lane (nearest public viewpoint to R8), looking east**



**R9 (private residential viewpoint): View from R9 residence, looking north**



**R12 (private residential viewpoint) and Burgmanns Lane (public viewpoint): View from Burgmanns Lane (nearest public viewpoint to R12), looking east**



**Large Lot Residential (representative viewpoint): View from Pinstripe Road looking east**



**Calala Lane travelling east (public viewpoint): View looking south**

## Assessment of impact

The assessment of visual impact is presented in [Table 2](#). The assessment determined:

- Sensitivity (presented in [Column A, Table 2](#)):
  - There is no change to the rating of sensitivity determined in the VIA for any viewpoint.
- Magnitude (presented in [Column B, Table 2](#)):
  - There is a reduction in magnitude rating for R9 with the Amended Project from *moderate* to *low*, due to the Project set back from the southern boundary, retention of trees along the southern boundary, and proposed landscape screening along the southern boundary.
  - There is no change to the VIA magnitude rating for all other viewpoints. The assessed level of magnitude for the EIS Project was already assessed as low.
- Visual impact (presented in [Column C, Table 2](#)):
  - There is a reduction in visual impact for R9 from *moderate* to *moderate-low*.
  - There is no change to the VIA rating of visual impact for other viewpoints.
- Residual impact (presented in [Column D, Table 2](#)):
  - Residual visual impacts refer to remaining adverse visual impacts following the implementation of all recommended mitigation measures. A residual rating has been added in this Addendum to show the long-term visual impact of the Amended Project, 5-7 years following construction and implementation of the landscape plan.
  - The residual impact to all viewpoints is *low*. Overtime, proposed landscape screening along the northern, western and southern Project boundaries, would further reduce visibility of the Project.

Table 2: Visual impact assessment – EIS Project compared to Amended Project

Viewpoint		Column A Sensitivity as per the VIA (EIS Project)	Column B Assessed magnitude of change to the view		Column C Assessed visual impact		Column D Residual impact (5-7 years following construction)
Viewpoint type	Viewpoint number (or name)		VIA (EIS Project)	Amended Project	VIA (EIS Project)	Amended Project	
Private residence	R1: Residence (Calala Lane)	Moderate	Low	Low. <u>No change</u> to magnitude rating.	Moderate- low	Moderate- low	Low
	R8: Residence (Burgess Lane eastern side)	Moderate	Low	Low. <u>No change</u> to magnitude rating, however, the Amended Project's retention of trees along the southern boundary and proposed landscape screening along the southern boundary, would likely reduce visibility of the Project.	Moderate- low	Moderate- low	Low
	R9: Residence (Burgmanns Lane northern side)	Moderate	Moderate	Low. <u>Magnitude of change is reduced</u> . The Amended Project's setback from the southern boundary enables retention of existing trees along the southern boundary, reducing initial visibility of the Project. However, the substation would likely still be visible through gaps in existing trees, and taller proposed elements (such as the 25 m high lightening masts) could be visible above the tree line (although they are very narrow and likely to be relatively inconspicuous at that distance (around 450 m from the residence)). Proposed landscape screening along the southern boundary would supplement the screening effect of existing trees, and overtime, reduce visibility of the Project	Moderate	Reduced to Moderate- low	Low
	R12: Residence (Burgmanns Lane southern side)	Moderate	Low	Low. <u>No change</u> to magnitude rating, however, the proposed smaller battery area footprint, retention of trees along the southern boundary, and proposed landscape screening would likely reduce visibility of the Project.	Moderate- low	Moderate- low	Low
Representative viewpoint	General Residential Zone	Low	Low	Low. <u>No change</u> to magnitude rating, however, the proposed 5 m high grass mound would potentially be visible, above, and in gaps between, existing trees, and would largely screen the Project. Overtime, proposed landscape planting west of the mound would screen the mound and the Project.	Low	Low	Low
	Large Lot Residential Zone	Low	Low	Low. <u>No change</u> to magnitude rating, however, the proposed smaller battery area footprint would likely reduce the extent of potential visibility of the Project.	Low	Low	Low
	Nemingha / East Tamworth	Low	Low	Low. <u>No change</u>	Low	Low	Low
Public / institutional viewpoint	Calala Lane	Low	Low	Low. <u>No change</u> to magnitude rating, however: - When travelling east along Calala Lane, the proposed 5 m high grass mound would potentially be visible, above, and in gaps between, existing trees, and would largely screen the Project. Overtime, proposed landscape planting west of the mound would screen the mound and the Project. When travelling west on Calala Lane, toward Tamworth, the proposed lighter colour of the BESS enclosures would be more visible in the landscape (at least initially), although the overall size of the battery area footprint would be smaller.	Low	Low	Low
	Burgess Lane	Low	Low	Low. <u>No change</u> to magnitude rating, however, the proposed smaller battery area footprint, and retention of trees along the southern boundary, would reduce potential visibility of the Project.	Low	Low	Low
	Burgmanns Lane	Low	Low	Low. <u>No change</u> to magnitude rating, however, the proposed smaller battery area footprint, retention of trees along the southern boundary and proposed landscaping along the southern boundary, would reduce potential visibility of the Project.	Low	Low	Low
	Institutional Facilities	Low	Low	Low. <u>No change</u> to magnitude rating, however, the proposed lighter colour of the BESS enclosures would be more visible in the landscape, although the overall size of the battery area footprint would be smaller.	Low	Low	Low
	Flagstaff Mountain Lookout	Low	Low	Low. <u>No change</u> to magnitude rating, however, the proposed lighter colour of the BESS enclosures would be more visible in the landscape, although the overall size of the battery area footprint would be smaller.	Low	Low	Low

## 5.0 Key findings

### EIS Project assessment findings

The VIA had determined the highest visual impact would be experienced by residents of four homes located on larger properties within a kilometre of the Project (R1, R8, R9 and R12). As private residents, they have relatively high sensitivity to major developments occurring within their vicinity. Therefore, even though the EIS Project would have resulted in a relatively small change in their view, their visual impact rating was at least moderate-low.

The highest assessed impact of the EIS Project was to R9 (at 'moderate'). R9 is elevated (around 12 m higher in elevation than the Project site) and around 450 m away from the proposed BESS facility. The EIS Project had removed trees along the southern Project boundary, increasing exposure of the Project site, and changing the outlook from R9 to include views of the proposed infrastructure, including the substation and battery enclosures.

### Amended Project assessment findings

The most significant visual changes associated with the Amended Project are a smaller battery area footprint (although the overall BESS facility footprint is generally the same), and setback of Project infrastructure (including the proposed underground transmission line and proposed substation) from the southern boundary, allowing retention of existing trees and opportunity for screening planting.

The retention of existing trees along the southern boundary, together with the Project setback from the southern boundary, would reduce initial visibility of the Project when viewed from the south (particularly from R9), and proposed screen planting (outlined in the amended landscape concept plan) along the southern boundary would enhance screening overtime. The assessed visual impact rating for R9 therefore reduces from *moderate* to *moderate-low* with the Amended Project.

The assessed visual impact rating for all other viewpoints did not change:

- Views of the Amended Project from the west and north would largely be screened by existing trees (as was the case with the EIS Project), and overtime, proposed landscape screening would further reduce visibility.
- Views from the north-west could possibly include the proposed 5 m high grassed mound, which would screen the Project, and which would eventually be screened by proposed landscape planting.
- When viewed from the east, (as was the case with the EIS Project), there are less existing trees in the landscape to screen the Amended Project (due to the existing overhead transmission line along the eastern Project boundary). Although the Amended Project battery area footprint has reduced, the lighter colour of the battery enclosures (compared to the EIS Project) could (at least initially) increase visibility. However, most viewers from the east would only have brief glimpses of the facility, while in transit, from at least around 480 m away.

Lighting associated with the Amended Project compared to the EIS Project did not change. Other changes associated with the Amended Project (such as removal of the northern noise wall, removal of the noise wall within the substation, and reducing and repositioning of the western noise wall), would have minimal visual change to the Project.

### Summary

The Amended Project has a smaller battery area footprint (therefore the extent of the BESS facility potentially in view has decreased), greater retention of existing trees (which provide an important screening function), and allows for additional landscape screening (which would increase screening and reduce visibility overtime).

The Amended Project results in a reduced visual impact to one viewpoint (R9) which had been assessed as the highest impact rating with the EIS Project, from *moderate* to *moderate-low*.