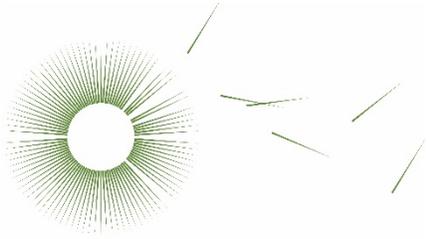


Appendix F

**Addendum
Landscape and visual
impact assessment**



iris

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MEMO

To: Jarryd Barton, WSP
From: Suzie Rawlinson, Director
Date: 1 April, 2021
Re: EnergyConnect NSW Western Section Amendment – Landscape and visual impact assessment

1. Introduction

As part of the EnergyConnect (NSW Western Section) project, TransGrid are seeking to amend the proposal presented in the Environmental Impact Statement. This memo contains an assessment of the landscape and visual impacts of the proposed amendments. This includes a revised assessment of the landscape character areas and viewpoints identified in the EIS *Technical Paper 4: Landscape and Visual Impact Assessment* and additional views as relevant.

2. Methodology

The methodology for the assessment of landscape and visual impacts is detailed in the *EnergyConnect (NSW Western Section) EIS, Technical Paper 4: Landscape and Visual Impact Assessment, 2020*, at pages 15-24.

This methodology is based on industry best practice, and generally aligns with the guidance contained within the *EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment*, Transport for NSW, 2020 (previously referred to as the *Guideline for Landscape Character and Visual Impact Assessment EIA-N04*, NSW Roads and Maritime Services, 2018), and the *Guidance Note for Landscape and Visual Assessment (GNLVA)*, Australian Institute of Landscape Architects Queensland, 2018.

This memo includes:

- a short description of the proposed amendments
- a revised assessment of landscape impact during construction and operation
- a revised assessment of the daytime visual impact during construction and operation
- a general assessment of night time visual impact during construction and operation and
- consideration of the need for further mitigation measures.

3. Description of the proposed amendment

The key elements, relevant to the landscape and visual impact assessment are as follows:

- **Wentworth construction compound and accommodation camp site** – Confirmation of the compound and accommodation camp site at Wentworth, located on the northern side of Renmark Road, about 17 kilometres west of Wentworth. The site features would be generally as described in the EIS for the Buronga and Anabran South sites, and would also include a water treatment plant comprising tanks and shipping containers and a ‘turkey nest’ or similar small basin type structure (13 x 13 metres across) as proposed for the amendment.
- **Anabran South accommodation camp site** – The accommodation camp element at this location would no longer be required. The Anabran South construction compound site would be retained as ancillary construction site, including laydown areas, vehicle and equipment storage, maintenance sheds, potential stockpile areas, demountable offices and parking.
- **Buronga substation earthworks** – Addition of earthwork material sites located generally to the north and west of the proposed substation upgrade and expansion site. Existing landform rises about seven metres above the surrounding landform, this would be reduced to level at the completion of construction and would be reinstated and revegetated as appropriate.
- **Buronga substation layout and components** – There would be a decrease in the overall footprint of the Buronga substation site. There would also be a water treatment plant including tanks and shipping containers and a ‘turkey nest’ or similar small basin type structure (20 x 20 metres across). The operational footprint of the Buronga substation would be slightly shifted and have an increased frontage to Arumpo Road.
- **Temporary bypass transmission line** – 6.5 kilometres of temporary (construction only) transmission line and around 60 supporting transmission line poles (around 18 metres in height). Extending south east from the Buronga substation, parallel to and on the eastern side of the existing 220kV transmission line between the existing 220kV transmission lines. The bypass line would be offset of around 25 metres from both the existing 220kV transmission lines.
- **Water supply points** – new standpipe infrastructure at Alcheringa Road, Fletchers Lake Drive and Silver City Highway sites including some minor clearing of vegetation and installation of an underground pipeline (construction only) to the new Wentworth construction compound and accommodation camp requiring around 400 metres of trenching including a crossing point of Renmark Road.
- **Access tracks** – A new strategy to reduce the area of tracks required by making use of existing access tracks, reducing the need for longitudinal access tracks by connecting with existing surrounding roads. This strategy would reduce the overall amount of clearing required.
- **Vegetation** – along the corridor where ground disturbance is not required, the removal of vegetation with growth heights greater than four metres in the centre section of the easement and to ten metres at the outer portions of the easement, rather than two metres as identified in the EIS.

Further details of the proposed amendment is described in Chapter 2 Proposed amendments and clarifications, of the amendment report.

4. Landscape impact assessment

The proposed amendment changes are located across all three landscape character areas described in the EIS Technical paper, which are:

- the Lake Victoria cultural landscape and semi-arid plains
- Mallee shrubland and rural
- Murray River plain rural landscape character area

These character areas are described in pages 26-34 of Technical paper 4 Visual and landscape character impact assessment.

The following section provides a revised assessment of each character area considering the proposed amendments.

4.1 Lake Victoria cultural landscape and semi-arid plains

This landscape consists of vast semi-arid plains of low elevation, with sandhills and gentle undulating sandy rises, interspersed by dense swathes of low mallee shrubland. The landscape has a remote and arid character, and includes salt pans and expanses of flat, low open shrubland.

The EIS identified the Lake Victoria cultural landscape and semi-arid plains landscape character area to be of both state sensitivity and regional landscape sensitivity. With areas in the vicinity of Lake Victoria, south of Renmark Road being of greater sensitivity due to the cultural landscape values associated with the area.

The proposed amendment would include a new construction compound and accommodation camp located to the south east of the landscape character area identified in the EIS. This new disturbance area, west of Wentworth, however, has a similar landscape character and landscape sensitivity to the areas north and east of Renmark Road, beyond the setting of Lake Victoria, being of semi-arid plains and not within an area of higher cultural landscape value.

Assessment of landscape Impact contained in the EIS, during construction:

The EIS identified a moderate magnitude of change to the area of regional landscape sensitivity, and a **moderate landscape impact** during construction. It also identified no direct impacts in the areas of state sensitivity, and a **negligible landscape impact** during construction.

Landscape Impact of the proposed amendments, during construction:

In the areas to the north of Renmark Road there would be less access tracks along the corridor, but more smaller tracks connecting Renmark Road to the tower sites. This would reduce the overall area of disturbance and vegetation removal required. There would also be an additional construction compound and accommodation site, and a water supply connection, located on a previously disturbed area west of Wentworth. During construction there would be some vegetation removal and small-scale earthworks including around 400 metres of trenching including across Renmark Road for a water supply connection, required in this location. The site would introduce an intensive construction site character into an otherwise open undeveloped landscape. The area used for construction would not directly impact Lake Victoria or any other important landscape features.

The impact levels are unchanged from those identified in the EIS. Overall, there would be a moderate magnitude of change, and a temporary **moderate landscape impact** in the areas of regional landscape sensitivity. There would be no direct impacts in the areas surrounding Lake Victoria which are of state landscape sensitivity, and a **negligible landscape impact**. While the moderate landscape impact would be experienced over a larger area, with the additional construction compound and accommodation camp site.

Assessment of landscape Impact in the EIS, during operations:

The EIS identified a **low landscape impact** to areas north of Renmark Road, and a **negligible landscape impact** to areas south of Renmark Road, in the vicinity of Lake Victoria.

Landscape Impact of the proposed amendment, during operations:

Some of the access tracks, established during construction, would be maintained. These would be located particularly near to the existing roads, and in closer proximity to road users, however, these are expected to cover a reduced length overall and require less clearing than assumed in the EIS. The perpendicular access tracks leading from Renmark Road, construction compound and accommodation camp site areas would be reinstated and revegetated as appropriate.

The impact levels are unchanged from the assessment in the EIS. Overall, there would be a **low landscape impact** in areas north of Renmark Road, and south of Renmark Road in the vicinity of Wentworth during operation. In areas to the south of Renmark Road, in the vicinity of Lake Victoria, which is of state landscape sensitivity, there would be no direct impacts and a **negligible landscape impact**.

4.2 Mallee shrubland and rural landscape character area

The Mallee shrubland and rural landscape character area is predominantly characterised by open, undulating rural plains. In most areas, thick mallee scrub has been cleared for agricultural uses, with thinned out and patches of this vegetation remaining. The landscape includes existing power infrastructure, including the Buronga to Broken Hill 220kV transmission lines and the Buronga substation at Arumpo Road. The EIS identified the Mallee shrubland and rural landscape to be of local landscape sensitivity.

Assessment of landscape Impact contained in the EIS, during construction:

The EIS identified a low magnitude of change and a **low landscape impact** to the Mallee shrubland and rural landscape character area during construction.

Landscape impact of the proposed amendment, during construction:

The Anabran South accommodation camp site would not be required, with the amendment reducing the area of potential earthworks and vegetation clearance in this area. There would, however, be additional vegetation clearing and considerable earthworks, with supporting crushing and screening activities, required at the two earthwork material sites adjacent to the Buronga substation. Construction of the temporary 220kV transmission line bypass, would also result in some localised changes to the landscape character, due to minor earthworks and vegetation clearance.

There would be less vegetation removed due to the reduction in access tracks and reduced need for trimming of vegetation within the corridor. There would be some additional vegetation clearance and trenching work for the water supply connections, in areas surrounding the proposal alignment.

There would be several locations to the south and west of the proposed transmission line that would be used for water supply. At these locations there would be new standpipe infrastructure and intermittent water truck activity adjacent to the existing road.

The impact level is unchanged from the assessment in the EIS. Overall, the proposal including the proposed amendments would result in a moderate magnitude of change and a **low landscape impact** on the Mallee shrubland and rural landscape during construction.

Assessment of landscape Impact in the EIS, during operations:

The EIS identified a moderate magnitude of change and a **low landscape impact** to the Mallee shrubland and rural landscape character area during operation.

Landscape Impact of the proposed amendment, during operations:

Some of the access tracks required for construction would be maintained, while these would be near to the existing roads and in closer proximity to road users, these are expected to cover a reduced length overall. The construction compound area and accommodation camp areas would be reinstated and revegetated as appropriate.

The impact level is unchanged from the assessment in the EIS. Overall, the proposal including the proposed amendments would result in a moderate magnitude of change and a **low landscape impact** on the Mallee shrubland and rural landscape during operation.

4.3 Murray River plain rural landscape character area

This landscape character area includes a mix of riparian vegetation and rural areas along the Murray River floodplain. This area has been extensively cleared and modified for irrigated and dryland arable farming purposes. The area is settled, contains a busy highway (Sturt Highway) and large-scale power infrastructure, including the existing 220kV transmission lines, extending between Buronga and Red Cliffs, mineral extraction and a higher concentration of rural structures including sheds, workshops, packing and processing facilities, supporting the surrounding agricultural uses. The EIS identified this landscape character area as of local landscape sensitivity.

Assessment of landscape Impact contained in the EIS, during construction:

The EIS identified a low magnitude of change and a **low landscape impact** to the Murray River plain rural landscape character area during construction.

Landscape impact of the proposed amendment, during construction:

While there would be some improvements, the impact level is unchanged from the assessment in the EIS. There would be less access tracks along the corridor reducing the overall area of disturbance and vegetation removal required. Any vegetation removed within the disturbance footprint would be generally taller growing vegetation, over four or ten metres, increasing the amount of vegetation which can be retained. Overall, there would be a low magnitude of change and a **low landscape impact** on the Murray River plain rural landscape character area during construction.

Assessment of landscape Impact in the EIS, during operations:

The EIS identified a low magnitude of change and a **low landscape impact** to the Murray River plain rural landscape character area during operation.

Landscape Impact of the proposed amendment, during operations:

The impact level is unchanged from the assessment in the EIS. There would be additional vegetation retained due to the revised access track strategy, and the reduced need for trimming of vegetation within the corridor. There would be a low magnitude of change and a **low landscape impact** on the Murray River plain rural landscape during operation.

A summary of the landscape impact assessment is shown in Table 4-1.

Table 4-1 - Landscape impact summary

Landscape character area	Landscape sensitivity	Construction		Operation	
		Magnitude of change	Landscape impact	Magnitude of change	Landscape impact
Lake Victoria cultural landscape and semi-arid plains	State (south of Renmark Road)	Negligible	Negligible	Negligible	Negligible
	Regional (north of Renmark Road)	Moderate	Moderate	Low	Low
Mallee shrubland and rural landscape	Local	Moderate	Low	Moderate	Low
Murray River plain rural landscape	Local	Low	Low	Low	Low

5. Visual impact assessment

The *EnergyConnect (NSW Western Section) EIS, Technical Paper 4* included a selection of representative viewpoints across each landscape character area. Where these would change due to the amendment, they have been updated in the following discussion. Where the change is not adequately addressed in the existing views, an additional viewing location has been identified and assessed.

5.1 Lake Victoria cultural landscape and semi-arid plains

Assessment of visual impact contained in the EIS, during construction:

A **moderate visual impact** was identified in views from the land between Renmark Road and Lake Victoria, due to the increased visual sensitivity of these locations and the importance of views to the sense of place of this significant cultural landscape. Otherwise, in views from Renmark Road there were **low visual impacts** identified where the proposal alignment parallels the road for several kilometres.

Assessment of visual impact contained in the EIS, during operations:

A **moderate visual impact** was identified for views from the land between Renmark Road and Lake Victoria, during operations and a **low visual impact** in views to the proposal alignment from Renmark Road.

Visual impact with proposed amendment:

Within the Lake Victoria cultural landscape character area there would be changes in viewpoints assessed in the EIS including:

- Viewpoint 1. View east along Renmark Road; and
- Viewpoint 5. View north from Renmark Road, near intersection with Nulla Road junction.

There would also be views from Renmark Road, 17 kilometres west of Wentworth, that would be impacted by the proposed Wentworth construction compound and accommodation camp site.

Viewpoint 1. View east along Renmark Road



Existing conditions: There is low mallee eucalypt vegetation in this view which provides screening to views from the road. The landform is relatively flat with a small ridge the road is the main built elements in this view. This view was identified as of local visual sensitivity in the EIS.

Visual impact with proposed amendment during construction:

Changes to the access track strategy would result in additional access tracks leading from Renmark Road towards the construction sites for the transmission structures, and less vegetation clearing along the corridor. The additional tracks would require intermittent vegetation removal, which would be visible from the road. The resulting reduction in vegetation removal along the corridor, however, would not be seen in views from this section of Renmark Road where the mallee eucalypt vegetation exists.

There would also be more construction related traffic on Renmark Road itself. Overall, there would be a moderate magnitude of change to this view and a **low visual impact** during construction. This impact level is unchanged from the EIS.

Visual Impact of the proposed amendment, during operations:

During operations, there would be more tracks retained and seen in this view, however, this would not include the perpendicular access tracks extending from Renmark Road, which would be rehabilitated. Overall, there would be a moderate magnitude of change to this view and a **low visual impact** during construction. This impact level is unchanged from the EIS.

Viewpoint 5. View north from Renmark Road, near intersection with Nulla Road junction



Existing conditions: Views from this area of Renmark Road show a predominantly open landscape with panoramic, distant views across the flat terrain. This view was identified as of local visual sensitivity in the EIS.

Visual impact with proposed amendment during construction:

Any additional access tracks leading from Renmark Road would not be prominent in views from this part of Renmark Road due to the low vegetation and flat landform. The removal of the longitudinal access tracks along the corridor would reduce the number extent of vehicle movement seen in the background, within the broader landscape. There would, however, be additional construction related traffic seen in the foreground, using the Renmark Road. Overall, there would be a moderate magnitude of change to this view and a **low visual impact** during construction. This impact level is unchanged from the EIS.

Visual Impact of the proposed amendment, during operations:

During operations, the works would be as described in the EIS with potentially more tracks retained and seen in the vicinity of Renmark Road. Overall, there would be moderate magnitude of change to this view and a **low visual impact** during operation. This impact level is unchanged from the EIS. **View to the Wentworth construction compound and accommodation camp site from Renmark Road**

This is an additional viewing location to assess the visual impact of the Wentworth construction compound and accommodation camp site.

Existing conditions:

Along Renmark Road, in areas north of the Murray River and west of Wentworth, the views are to a predominantly open landscape with panoramic, distant views, across the flat terrain. The landscape has been mostly cleared for agricultural use and includes sheep and cattle grazing on native low shrubs (including saltbush and bluebush shrublands) and pastures. The proposed site of the Wentworth construction compound and accommodation camp is previously disturbed land largely cleared of vegetation other than grasses and occasional low shrubs.

Sensitivity:

Renmark Road is a remote bitumen route that provides access between Wentworth and Lake Victoria. This road does not form part of a tourist route, however, it would be used by visitors to this far western arid region of NSW, visiting nearby places such as Fort Courage Caravan Park on the Murray River and Lake Victoria. Overall, views along Renmark Road in the vicinity of the additional proposed site is of **local visual sensitivity**.

Visual impact with proposed amendment during construction:

The proposed construction compound and accommodation camp site at Wentworth would be seen unobstructed in the foreground of views from Renmark Road. This would include the operation of large machinery such as excavators and graders to prepare the site and transporter trucks and cranes to assemble the temporary facilities, such as offices and accommodation buildings, using Renmark Road to access the site. This would be followed by the operation of the accommodation camp and compound facilities.

Overall, due to the large scale and extent of the construction works in a landscape with no vegetation screening, there would be a high magnitude of change and a **moderate visual impact**. This impact would be experienced for a short duration in views from passing vehicles. This impact is in addition to those identified in the EIS.

Visual Impact of the proposed amendment, during operations:

The construction compound and accommodation camp site would have been disassembled and the site reinstated, resulting in a negligible magnitude of change and a **negligible visual impact** during operation.

View to the Wentworth construction compound and accommodation camp site from Fort Courage Caravan Park

This is an additional viewing location to assess the visual impact of the Wentworth construction compound and accommodation camp site.

Existing conditions:

The Fort Courage Caravan Park, located about 500m south of Renmark Road and the proposed construction compound and accommodation camp site, offers scenic views south towards the Murray River. There are scattered trees to the north of the caravan park which would filter views across the open landscape and Renmark Road to the north. There is some support infrastructure located to the north of the caravan park including water treatment facilities, tanks and solar panels, which would be seen in these views and on the approach to the park from Renmark Road.

Sensitivity:

The Fort Courage Caravan Park is located on the Murray River, and accessed via a track, providing a remote landscape experience. It would be used by tourists and locals for the purpose of recreation and appreciating the landscape and views particularly along the Murray River. Overall, views from the park are of **local visual sensitivity**.

Visual impact with proposed amendment during construction:

In views from the Fort Courage Caravan Park the proposed Wentworth construction compound and accommodation camp site would be seen in the background, partly filtered by trees. It would be seen in the context of existing support infrastructure surrounding the park, and across Renmark Road. There would be large machinery such as excavators and graders used to prepare the site and transporter trucks and cranes seen assembling the temporary facilities. The facilities would include accommodation buildings, site offices, equipment storage and materials laydown areas.

There would be works extending south towards the Fort Courage Caravan Park as around 400 metres of trenching would be required for a water connection. This would include a crossing point at Renmark Road in the background and seen in the vicinity of the construction compound and accommodation camp site.

While the proposed Wentworth construction compound and accommodation camp are large in scale, it would comprise a small component in the background of a peripheral view from the park. The works associated with the water connection would be for a short duration during the initial stages of construction. Overall, this would result in a moderate magnitude of change and a **low visual impact**. This impact would be experienced for the duration of construction and is in addition to those identified in the EIS.

Visual Impact of the proposed amendment, during operations:

The construction compound and accommodation camp site would have been disassembled and the site reinstated, resulting in a negligible magnitude of change and a **negligible visual impact** during operation from the Fort Courage Caravan Park.

Night time visual assessment

Assessment of visual Impact contained in the EIS, at night during construction:

At night, the EIS identified a **negligible visual impact** on views within the Lake Victoria cultural landscape and semi-arid plains as there was limited night time activities proposed.

Assessment of visual Impact contained in the EIS, at night during operations:

Similarly, the EIS identified a **negligible visual impact** for views within the Lake Victoria cultural landscape and semi-arid plains at night as there were no permanent lighting proposed in this area.

Visual Impact of the proposed amendment, at night during construction:

The facilities at the proposed Wentworth construction compound and accommodation camp site on Renmark Road (including laydown/delivery areas, concrete batching and workforce accommodation) would require lighting when they are operating outside of daylight hours. The construction compounds would operate between 7am and 7pm, seven days a week and the camp would operate 24 hours a day, seven days a week. There would be views of direct light sources and a general skyglow above the site which would contrast with the surrounding, predominantly dark landscape Dark (A1) which has a high visual sensitivity at night.

Overall, there would be a moderate magnitude of change to this landscape which is of high sensitivity, and a **high visual impact** at night. This night time visual impact would be localised, seen from Renmark Road and in the background of views from the Fort Courage Caravan Park, and temporary. This impact is in addition to the impacts identified for this character area in the EIS.

All other areas of the Lake Victoria cultural landscape and semi-arid plains landscape character area would remain **negligible visual impact** at night.

Visual Impact of the proposed amendment, at night during operations:

There is no lighting proposed along the main transmission lines and the Wentworth construction compound and accommodation site would have been removed upon completion of the construction work. There would be a negligible magnitude of change to this landscape which has a high visual sensitivity at night, and a **negligible visual impact**. This impact level is consistent with the EIS.

5.2 Mallee shrubland and rural landscape

Assessment of visual Impact contained in the EIS, during construction:

A **moderate visual impact** was identified for views to the construction works at the Buronga Substation due to the scale and character of the proposed works. Otherwise, in views along the route there were **low visual impacts** identified in views across the Mallee shrubland and rural landscape in the EIS.

Assessment of visual Impact contained in the EIS, during operations:

A **moderate visual impact** was identified in the views from Arumpo Road to the Buronga substation site during operations due to the scale and contrast of the proposal. In other areas there were **low visual impacts** identified in views to the proposal alignment during operations.

Visual impact with proposed amendment:

Within the Mallee shrubland and rural landscape character area there would be changes in viewpoints assessed in the EIS including:

- Viewpoint 7: View south from Silver City Highway; and
- Viewpoint 9: View northeast from Arumpo Road to the Buronga substation upgrade and expansion site.

Viewpoint 7. View south from Silver City Highway



Existing conditions: Views in this location include the flat, open rural plain with native low shrubs (including saltbush and bluebush shrublands) and pastures. There are areas of native eucalyptus forest (including mallee shrubland) and regrowth visible in the background of the view. This view was identified as of local visual sensitivity in the EIS.

Visual impact with proposed amendment during construction:

The works would cover a smaller area of this view than identified in the EIS, there would also not be the works required to construct or operate an accommodation camp. This would result in the retention of more trees in this view and an overall smaller scale of construction activity seen. As the works would continue to contrast with the otherwise undeveloped character of this view, there would be a moderate magnitude of change and a **low visual impact**. This impact level is unchanged from the EIS.

Visual Impact of the proposed amendment, during operations:

The areas disturbed during construction would be rehabilitated, however, there may be construction access tracks retained and visible extending to the alignment. The transmission line structures would be as identified in the EIS. Overall, there would be a moderate magnitude of change as a result of the proposal, in view of local sensitivity, resulting in a **low visual impact**. This impact level is unchanged from the EIS.

Viewpoint 9: View northeast from Arumpo Road to the Buronga substation upgrade and expansion site



Existing conditions:

This view shows a predominantly open rural landscape, with some native woodland trees, the existing Buronga 220kV substation and the steel lattice structures and wires of the 220kV Broken Hill to Buronga, and Buronga to Balranald transmission lines transmission line towers visible in the middle and background of view. There are likely to be further development within this landscape for energy related projects including a proposed 1,200-hectare solar farm. This view was identified as of local visual sensitivity in the EIS.

Visual impact with proposed amendment during construction:

Construction and operation of a temporary bypass transmission line would be seen in the background of this view, located adjacent to the eastern side of the existing 220kV transmission corridor, and alongside and in addition to the works for the proposed transmission line considered in the EIS. Works to construct the substation expansion would be seen closer to the road, with less opportunity for the retention of roadside vegetation in this section. There would also be earthworks visible adjacent to the substation site, with excavation works progressively removing the mounded area at the proposed earthwork material sites.

Overall, while the works would be seen in an area which includes an existing substation and transmission lines, due to the scale of the works and contrast with the surrounding landscape, there would be a high magnitude of change in this view. This is of local visual sensitivity and there would be a **moderate visual impact**. This impact level may affect views from a longer section of Arumpo Road but is otherwise unchanged from the EIS.

Visual Impact of the proposed amendment, during operations:

The proposed temporary bypass transmission line would have been removed at the end of construction, the earthworks sites, compound and accommodation areas used during construction would be rehabilitated and shaped to tie in with the surrounding ground levels. The proposed substation would be located closer to Arumpo Road with much of the roadside vegetation having been cleared. However, the works would be seen in the context of an existing substation and transmission lines. There would be a high magnitude of change, in a view of local visual sensitivity, and a **moderate visual impact**. This impact level may affect views from a longer section of Arumpo Road but is otherwise unchanged from the EIS.

Night time visual assessment

Assessment of visual Impact contained in the EIS, at night during construction:

The EIS identified a **moderate visual impact** for views within the Mallee shrubland and rural landscape as the construction compound and accommodation sites would contrast with the surrounding predominantly dark landscape. However, this impact level was in error in the technical paper and should be revised to **high** in accordance with the *Visual impact levels – night time* table at Table 3-9 in the *Technical Paper 4 – Visual and landscape character impact assessment*.

Assessment of visual Impact contained in the EIS, at night during operations:

During operation the EIS identified a **low visual impact** in views within the Mallee shrubland and rural landscape at night as limited lighting would be provided at the Buronga substation and there is no night time lighting proposed along the alignment. This impact level was in error in the technical paper and should be revised to **moderate** in accordance with the *Visual impact levels – night time* table at Table 3-9 in the *Technical Paper 4 – Visual and landscape character impact assessment*.

Visual Impact of the proposed amendment, at night during construction:

There would no longer be an accommodation camp and 24 hour operations at Anabran South construction site. The construction compound would operate between 7am and 7pm, seven days a week and lighting would be required at these facilities when they are operating outside of daylight hours.

There would continue to be a construction compound and a larger accommodation camp at the Buronga substation site. This construction compound would operate between 7am and 7pm, seven days a week and the camp would operate 24 hours a day, seven days a week. Lighting would be required at this facility when they are operating outside of daylight hours. This would be a spatially larger facility than identified in the EIS.

While at Anabran South there would be less of a visual impact at night, and there would be a moderate magnitude of change at the vicinity Buronga construction compound and accommodation camp. The lighting at these sites would contrast with the surrounding predominantly dark landscape. This landscape is of high visual sensitivity and there would be a **high visual impact** at night. This impact would be localised and temporary, and not experienced by many receptors. It is not considered to be significant. This impact is unchanged from the revised assessment identified as a clarification to the EIS.

Visual Impact of the proposed amendment, at night during operations:

There is no lighting proposed along the main transmission lines and the construction compound and accommodation sites would have been removed upon completion of the construction work. There would be some minor lighting required at the Buronga substation, as described in the EIS, and therefore there would be a low magnitude of change to this landscape which has a high visual sensitivity at night, and a **moderate visual impact**. This impact would be localised and not experienced by many receptors. It is not considered to be significant. This impact level is unchanged from the revised assessment identified as a clarification to the EIS.

5.3 Murray River plain rural landscape character area

There would not be any changes to the views in the Murray River plain rural landscape character area. The impact levels identified in the EIS would be unchanged.

5.4 Summary of visual impacts

A summary of the visual impact assessment is shown in Table 5-1 and 5-2.

Table 5-1 - Daytime visual impact summary

Landscape character area	Visual sensitivity	Construction		Operation	
		Magnitude of change	Visual impact	Magnitude of change	Visual impact
Lake Victoria cultural landscape and semi-arid plains					
Viewpoint 1 View east from Renmark Road	Local	Moderate	Low	Moderate	Low
Viewpoint 5: View north from Renmark Road, near intersection with Nulla Rd	Local	Moderate	Low	Moderate	Low
View to the Wentworth construction compound and construction camp from Renmark Road	Local	High	Moderate**	Negligible	Negligible**
View to the Wentworth construction compound and construction camp from Fort Courage Caravan Park	Local	Moderate	Low**	Negligible	Negligible**
Mallee shrubland and rural landscape					
Viewpoint 7: View south from Silver City Highway	Local	Moderate	Low	Moderate	Low

Landscape character area	Visual sensitivity	Construction		Operation	
		Magnitude of change	Visual impact	Magnitude of change	Visual impact
Viewpoint 9: View northeast from Arumpo Road to proposed Buronga substation upgrade and expansion site.	Local	High	Moderate	High	Moderate

** Impact in addition to those identified in the EIS.

Table 5-2 - Night-time visual impact summary

No.	Location	Visual sensitivity	Construction		Operation	
			Magnitude of change	Visual impact	Magnitude of change	Visual impact
1	Lake Victoria cultural landscape and semi-arid plains - Wentworth construction compound and construction camp	High (A1 Dark)	Moderate	High**	Negligible	Negligible**
	Lake Victoria cultural landscape and semi-arid plains – All other areas	High (A1 Dark)	Negligible	Negligible	Negligible	Negligible
2	Mallee shrubland and rural landscape – Buronga Substation	High (A1 Dark)	Moderate	High*	Low	Moderate*
	Mallee shrubland and rural landscape – All other areas	High (A1 Dark)	Negligible	Negligible	Negligible	Negligible

** Impact in addition to those identified in the EIS. * Impact level not changed, clarification of error identified in EIS

6. Mitigation and management measures

The mitigation measures detailed in the *EnergyConnect (NSW Western Section) EIS, Technical Paper 4: Landscape and Visual Impact Assessment, 2020*, section 7 at pages 69-71 remain relevant and apply to the proposed amendments to the Proposal.

7. Conclusion

7.1 Landscape impacts

The landscape impacts would be mostly consistent with the impact levels identified in the EIS.

Construction

The track strategy would reduce the length of access tracks, and consequently would reduce the impact on vegetation, which provides landscape amenity and screening across all landscape character areas. This would provide particular benefit in the Mallee shrubland and rural landscape character area where there is more tree cover.

During construction, the **moderate landscape impact** identified in the EIS for the Lake Victoria cultural landscape and semi-arid plains landscape character area would, however, be experienced over a larger area, with the additional construction compound and accommodation site west of Wentworth.

In the Mallee shrubland and rural landscape character area, while there would be less trees and landform change at Anabran South, and improvements as a consequence of the revised access track strategy, there would be additional clearing required for the temporary bypass transmission line and water supply pipeline, and an increased landscape change at the Buronga construction compound and accommodation site due to the additional earthworks sites. On balance these changes would offset each other and would not change the overall **low landscape impact** level identified in the EIS.

While there would be some improvements to the Murray River plain rural landscape character area due to the revised access track strategy, the impact level would not change from the assessment in the EIS.

Operations

During operations the **negligible** and **low landscape impacts** would remain as identified in the EIS.

7.1 Visual impacts

Construction

While there would be changes in the assessed views, the visual impact levels would be mostly consistent with the impacts identified in the EIS. In addition to the views identified in the EIS, there would be some impact on views from Renmark Road and the Fort Courage Caravan Park to the proposed Wentworth construction compound and accommodation camp. This would result in a **low** and **moderate visual impact** during construction.

The **moderate visual impact** identified in views from Arumpo Road to the Buronga construction compound and accommodation camp site is consistent with the impact level identified in the EIS, however, this impact would be experienced over a longer section of Arumpo Road due to the increased size of the disturbance area.

Operations

During operations the **low** and **moderate visual impacts** would remain as identified in the EIS.

7.1 Night time visual impacts

Construction

There would be additional visual impacts at night, with a temporary **high visual impact** during construction at the additional Wentworth construction compound and accommodation camp where there would be 24 hour operations, seven days a week in a predominantly dark environment. This impact would be temporary, localised and not seen by a large number of receptors. It is not considered to be significant.

Operations

During operations the **negligible** and **moderate visual impacts** would remain as identified in the EIS.