



Prosperity for every piece

SUBMISSION RE EIS ENERGYCONNECT (NSW – WESTERN SECTION)

FAILURE TO PROPERLY ASSESS AND RESPOND TO BIODIVERSITY, FIRE, IAL LAND, CONSERVATION AREA AND CULTURAL HERITAGE IMPACTS

SUBMISSION FROM: restofnsw inc., PO Box 448 Wentworth NSW 2648

PROPOSAL:

EnergyConnect (NSW - Western Section)

Application # SSI-10040

Object to the proposal for reasons in following pages

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EIS ASSESSMENT IN A PERIOD OF SEVERE DROUGHT

A significant amount of the EIS work was undertaken in a period of very severe drought with very little groundcover. The limited EIS vegetation samples were not representative of the flora present because they followed a three-year period of severe drought.

The EIS states:

“Severe drought has been noted to be heavily influencing large areas of the proposal study area”.

NSW Government LLS suspends assessment of groundcover in drought periods and a correct analysis of flora and fauna cannot be undertaken during one of one of the worst droughts in living memory. Recent rains mean the local environment can now be accurately assessed but this was not possible earlier.

FLORA AND FAUNA NEEDS DEFINED ROUTE/LOCATION

Numerous parts of the EIS are compromised by the fact that the proposal is not finalized and the EIS is premature.

For example the Biodiversity Credit Section of the Report states “The final obligation would be confirmed as the design of the proposal is further refined and the disturbance area is confirmed”.

EIS BASED ON INACCURATE DATA AND FUNDAMENTAL ERRORS

At the scale of the Western Division the NSW Government mapping of overlays such as flooding, biodiversity, wetlands and related matters are not accurate enough to be used for development assessment. This is recognized in the disclaimers to the source documents. In Sydney where there is extensive data and ground truthing the system works OK but in the Western Division the data is not accurate.

The Western Division of NSW is approximately 35 million hectares in size and most of this land has not been studied at a property specific level. Satellite data can be indicative but it is not a proper basis for the property specific decisions required by the planning system. For example a satellite image does not provide an accurate assessment of the flora and fauna of an area or the condition of the vegetation.

In the case of EnergyConnect the EIS has relied on a very small number of site vegetation surveys and mapping of cultural sites when detailed data simply does not exist.

There were only 86 very small survey plots over a proposal area hundreds of kilometres long.

The EIS states:

“Given the relatively homogenous broad condition states for vegetation types over the four IBRA sub regions, plots have been used for multiple IBRA sub regions rather than individual sampling for each sub region”.

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By simply making this unsupported assumption the EIS has significantly reduced vegetation sampling required. The consequence is the extremely inaccurate and misleading conclusion in Section 9.3.2 of the EIS.

A key statement in the EIS at Section 9.3.2 states:

“Much of the remaining mallee areas are comprised of younger whipstick mallee that has regrown following previous clearing for agriculture. The effects of semi-regular clearing combined with grazing (sometimes in drought conditions) has resulted in an overall landscape that while mostly comprised of native vegetation is not high quality undisturbed native vegetation or habitat”.

This statement is:

- **False and misleading – the overwhelming majority of the study area has never been cleared let alone cleared on a semi-regular basis. Mallee is very difficult and expensive to clear and would not be cleared illegally for no economic purpose. It suggests grazing impacts mallee vegetation whereas sheep and cattle do not consume mallee.**
- **Evidence free – no evidence is provided in the EIS to support the statement**

The EIS claim that the “native vegetation is not high quality undisturbed native vegetation or habitat” is highly misleading and requires thorough investigation. This statement is repeated a number of times in the EIS even though it is unsupported by evidence.

Tier 1, 2 and 3 constraints have also been incorrectly assessed including private conservation areas and horticultural land being incorrectly mapped.

EIS INADEQUATELY CONSIDERS VULNERABLE SPECIES

The EIS does not adequately consider the proposals impacts on a number of vulnerable species including:

- Mallee Fowl;
- Regent Parrot;
- Numbats;
- Bilbies; and
- Greater stick nest rats.

Habitat removed by EnergyConnect provides:

- A habitat for the Mallee Fowl;
- A feeding area for the Regent Parrot; and
- Potential habitat for the numbats, bilbies and greater stick next rats in Mallee Cliffs National Park that are intended to be released outside the protected area of the National Park in the coming years.

The EIS states:

“uncertainty around the extent and number of protected matters [species] that may be impacted will need to be resolved through the assessment process once final alignment and construction plans have been completed”.

The EIS notes Mallee Fowl mounds and there is no evidence as to the adequacy of the bird surveys, particularly given they were conducted in severe drought conditions.

EIS FAILS TO CONSIDER IMPACTS ON MALLEE CLIFFS NATIONAL PARK, STURTS BILLABONG AND PRIVATE CONSERVATION AREAS

Mallee Cliffs National Park is being established as a protected area for endangered species under the NSW Government Saving our Species Programme but this is not properly analysed in the EIS.

The project threatens the park through broad scale clearing adjacent to it and through fire risk.

Many private conservation reserves were created as part of the Mallee Sustainable Farming initiative with the intention of improving connection with the National Park. The project undercuts this through impacts on the reserves and the Park.

Sturt's Billabong is unique as location of both indigenous and European cultural heritage and the powerline impacts on this cultural heritage has been downplayed.

POTENTIAL FOR BUSHFIRE TO DESTROY MALLE CLIFFS NATIONAL PARK AND NEARBY PRIVATE CONSERVATION AREAS

Given the prevailing westerly wind any fires ignited by construction or operation of the EnergyConnect Project are likely to directly impact Mallee Cliffs National Park.

Indeed given the absence of buffers between the EnergyConnect line and Gol Gol Substation and Mallee Cliffs National Park there is a significant likelihood the National Park could be completely destroyed by such a bushfire. The consequence of this would be significant with loss of the endangered species introduced to the National Park and the species such as Mallee Fowl located in and around the National Park.

The EIS states:

“In general the risk of bushfire impact on the proposal study area during construction would be between high and extreme and would be dependent on factors such as fuel loads, weather and the scale (size) of fires which may occur”.

“There is a high probability that the proposed transmission lines could be impacted by a bush/grass fire when ignition occurs in any unmanaged vegetation during periods of high fire danger, when excessive dry (cured) fuel is available and weather conditions result in high temperatures, low humidity and strong winds travelling across the landscape from the northwest, west and southwest direction”.

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“The distribution of electricity via high voltage transmission lines and associated equipment has the potential to cause ignition of bushfire fuels, either within or adjoining the transmission load easement”.

The EIS states “large areas have been heavily modified and disturbed” in order to downplay the fire risk but this is not supported by evidence. This is particularly the case near the Mallee Cliffs National Park. Given the above this issue requires significant study before the Proposal can proceed and the EIS does not adequately consider this issue. In particular a condition of any approval should restrict construction activities to periods of low fire hazard.

MAPPING OF IMPORTANT AGRICULTURAL LAND (IAL)

The land impacted by the proposal that is within 15km of the Murray or Darling Rivers has significant horticulture potential and the soils in these areas are suitable for high value horticulture crops such as nuts, citrus and table grapes. A Tier 2 Constraint is “intensive agricultural activities and horticultural use” and the EIS should consider the IAL mapping before it is completed.

WENTWORTH LEP 2011 BIODIVERSITY MAPS

The EIS fails to mention that the Wentworth LEP 2011 maps the majority of the proposal corridor as biodiversity land.

INDIGENOUS CULTURAL HERITAGE

The EIS fails to fully investigate indigenous cultural heritage impacts and looks as these impacts as a work in progress rather than fully investigating them upfront.

The EIS states “the Proposal has the potential to directly and or indirectly Aboriginal sites and PADS,,,,,,within the indicative disturbance area along the transmission line corridor”. Again the disturbance is only “indicative” because the proposal is yet to be finalised.

7.1.1.5 Ongoing Surveys

Surveys were commenced by Jacobs in 2018 and followed on by WSP from 2019. WSP is continuing to undertake vegetation community and targeted threatened species surveys in 2020. These surveys are developing a baseline dataset of confirmed PCTs and important habitat to inform proposal scoping and design.

The surveys are finding that the vegetation condition generally ranges from medium to high within areas of conservation reserves or larger areas of intact remnant vegetation outside of reserves. Remaining areas comprise of low value vegetation within cleared agricultural land-use areas and heavily grazed land where cover and diversity of plants is lower. Severe drought has been noted to be heavily influencing large areas of the proposal study area.

Important habitat values and notable features have been identified and include:

- > Old growth mallee and intact mallee habitats, predominantly along the western portion of the NSW alignment, near the SA border. Although there was evidence of some grazing within the understorey at sites assessed, these habitats take many years to develop, and within adjacent habitat in SA they are characterised as critical habitat for the EPBC listed Black-eared Miner. Old growth continuous mallee also represents important habitat for a number of other conservation significant species.
- > The Darling River and Darling Anabranch crossings, and associated riparian habitat, represent important habitat features in the proposal study area. Parts of the riparian floodplain have been subjected to heavy grazing impacts and were suffering from impacts as a result of drought conditions following the time of the survey, but these areas still reflect ecotonal transitions in habitat across the landscape, and therefore are likely to support elevated biodiversity.

Vegetation integrity plots used for BAM calculations rely on a combination of plots collected by WSP (2020) and Jacobs (2019).

Vegetation integrity plots used for BAM calculations for each IBRA subregion have been sampled within the broader proposal study area. Given the relatively homogenous broad condition states for vegetation types over the four IBRA subregions, plots have been used for multiple IBRA subregions rather than individual sampling for each subregion.

3.6.5 VEGETATION INTEGRITY PLOT SURVEY EFFORT

A total of 86 vegetation integrity plots were sampled using the method contained in the BAM and as described in section 3.6.4. The minimum number of vegetation integrity plots required per vegetation zone is presented in Table 3.9 with plot locations details outlined in Appendix A-1 and Appendix A-4. Full vegetation integrity plot data is presented in Appendix C-3.

Table 3.9 Minimum number of vegetation integrity plots required per vegetation zone area

VEGETATION ZONE	INDICATIVE DISTURBANCE AREA (HA) ¹	MINIMUM PLOTS REQUIRED	PLOTS COMPLETED
Arid Shrublands (Acacia sub-formation)			
PCT 139 – Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions (modified)	2.05	2	Q79, Q80
PCT 143 – Narrow-leaved Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes (modified)	0.99	1	Q100
Arid Shrublands (Chenopod sub-formation)			
PCT 154 – Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones (modified)	62.73	5	Q54, Q55, Q76, Q78, Q87, Q88
PCT 154 – Black Bluebush low open shrubland of the arid and semi-arid zones (modified)	0.99	1	Q17, Q52, Q67

dry areas

Arid Shrublands (Chenopod sub-formation)				
PCT 153 – Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones (modified)	62.73	5	Q54, Q55, Q76, Q78, Q87, Q88	
PCT 154 – Pearl Bluebush low open shrubland of the arid and semi-arid plains (modified)	9.88	3	Q47, Q53, Q67	
PCT216 – Black Roly Poly low open shrubland of the Riverina Bioregion and Murray Darling Depression Bioregion (modified)	0.54	1	Q31	
Forested Wetlands				
PCT11 – River Red Gum – Lignum very tall open forest or woodland wetland on floodplains of semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion) (modified)	1.58	1	Q34, Q83	
Freshwater Wetlands				
PCT17 – Lignum shrubland wetland of the semi-arid (warm) plains (mainly Riverina Bioregion and Murray Darling Depression Bioregion) (modified)	0.04	1	Q33	
Saline Wetlands				
PCT 63 – Spiny Lignum – Slender Glasswort open forland saline wetland on lake edges in the semi-arid and arid climate zones (modified)	0.30	1	Q39, Q86	
PCT 166 – Disturbed annual saltbush forland on clay plains and inundation zones mainly of south-western NSW (modified)	2.53	2	Q81, Q82	

NATIVE VEGETATION TYPES	VEGETATION ZONE	THREATENED ECOLOGICAL COMMUNITY	CURRENT VEGETATION INTEGRITY	VEGETATION INTEGRITY LOSS	AREA (HA)	BIODIVERSITY RISK WEIGHTING	ECOSYSTEM CREDITS
PCT 170 – Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	modified 'bull' – disturbance area-A	not a TEC	66.5	-66.5	9.85	1.5	246
	modified 'bull' – disturbance area-B	not a TEC	66.5	-27.4	18.17	1.5	187
	modified 'whipstick' – disturbance area-A	not a TEC	58.6	-58.6	45.43	1.5	999
	modified 'whipstick' – disturbance area-B	not a TEC	58.6	-20.7	87.56	1.5	681
	derived – disturbance area-A	not a TEC	2.6	-2.6	34.53	1.5	0
	modified 'bull' – permanent	not a TEC	66.4	-66.4	1.82	1.5	45
PCT 171 – Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	modified 'bull' – maintenance	not a TEC	66.4	-24.1	4.53	1.5	41
	modified 'whipstick' – permanent	not a TEC	73.4	-73.4	16.64	1.5	458
	modified 'whipstick' – maintenance	not a TEC	73.4	-28.1	32.48	1.5	342
	modified 'whipstick' – disturbance area-A	not a TEC	61.9	-61.9	8.69	1.5	202
PCT 172 – Deep sand mallee of irregular dunefields of the semi-arid (warm) zone	modified 'whipstick' – disturbance area-B	not a TEC	61.9	-18.9	19.48	1.5	138

tiny areas.

3.6.4 VEGETATION INTEGRITY PLOTS METHOD

Vegetation integrity plots were completed in accordance with BAM. A schematic diagram illustrating the layout of each vegetation integrity plot is provided in Figure 3.1.

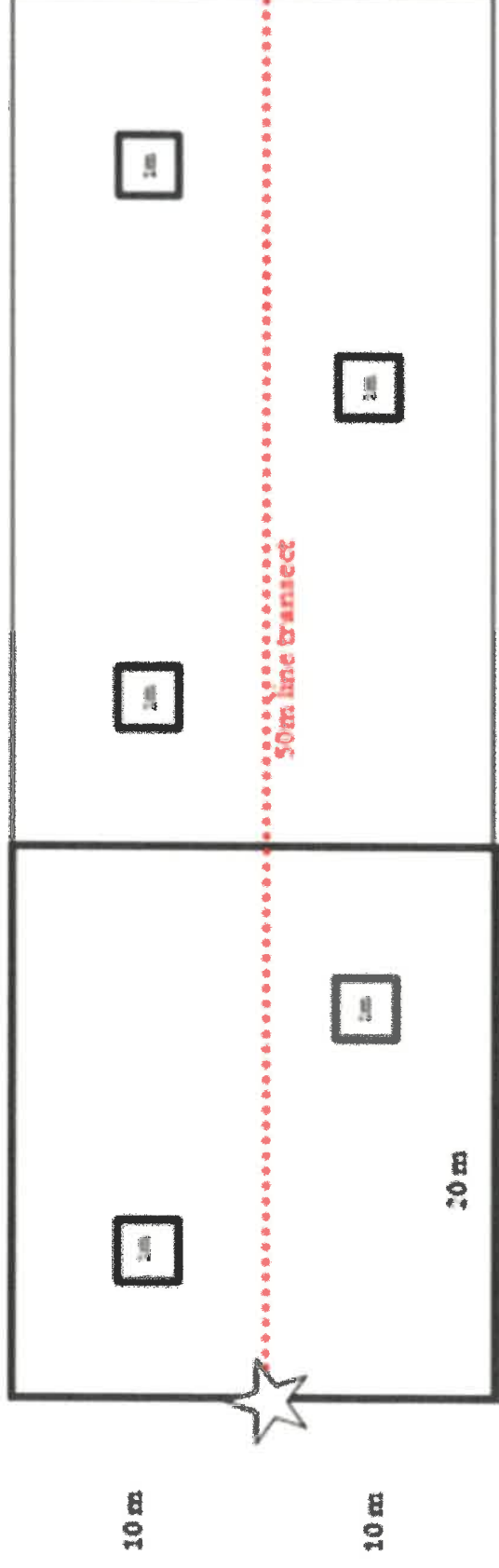


Figure 3.1 Vegetation integrity plot layout

The following site attributes were recorded at each vegetation integrity plot location:

- **location:** (easting – northing grid type MGA 94, Zone 56)
- **vegetation structure and dominant species and vegetation condition:** Vegetation structure was recorded through estimates of percentage foliage cover, average height and height range for each vegetation layer
- **native and exotic species richness** (within a 400-metre squared quadrat): This consisted of recording all species by systematically walking through each 20 metre x 20 metre plot. The cover and abundance (percentage of area of quadrat covered) of each species was estimated. The growth form, stratum/layer and whether each species was native/exotic/high threat weed was also recorded
- **number of trees with hollows** (1000 metre squared quadrat): This was the frequency of hollows within living and dead trees within each 50 metre x 20 metre plot. A hollow was only recorded if (a) the entrance could be seen:

9.3.2 Native and exotic vegetation

The proposal study area predominately comprises of native vegetation, with limited scattered areas considered to be cleared of native vegetation (for the purposes of LLS Act), and therefore being excluded from the BAM. Large areas within the proposal study area are used for grazing, but comprise of derived native vegetation that exceeds 50 per cent native cover. As such, these areas have been assessed as native vegetation, along with other sensitive regulated land (such as land covered by Property Vegetation Plans).

Broadly, the proposal study area has been subject to ongoing historical agricultural use, primarily for grazing. Much of the remaining mallee areas are comprised of younger whipstick mallee that has regrown following previous clearing for agriculture. The effects of semi-regular clearing combined with grazing (sometimes in drought conditions) has resulted in an overall landscape that while mostly comprised of native vegetation is not high quality undisturbed native vegetation or habitat.

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Broadly, the proposal study area has been subject to ongoing historical agricultural use, primarily for grazing. Much of the remaining mallee areas are comprised of younger whipstick mallee that has regrown following previous clearing for agriculture. The effects of semi-regular clearing combined with grazing (sometimes in drought conditions) has resulted in an overall landscape that while mostly comprised of native vegetation is not high quality undisturbed native vegetation or habitat.

Twenty plant community types (PCTs) were identified in the proposal study area. Two of these PCTs (PCT19 and PCT21) meet the criteria of one threatened ecological community, being Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions (Sandhill Pine Woodland). This community is listed as an endangered ecological community (EEC) under the BC Act. The PCTs found within the proposal study area do not correspond to any EPBC Act listed threatened ecological communities.

Further detail on the native vegetation is presented in Technical paper 1. A full set of detailed PCT maps within the proposal study area refer to Appendix A-4 of Technical paper 1.

Two of the exotic flora species recorded within the proposal study area during field surveys were *Lycium ferocissimum* (African boxthorn) and *Opuntia* species (Prickly pear – *Opuntia*). These weeds are listed under the BC Act as priority weeds for the Western region (Department of Planning, Industry and Environment, 2020) and Weeds of National Significance (WONS) (Australian Weeds Committee, 2020). A number of other weeds were recorded during field surveys, including as *Asphodelus fistulosus* (Onion Weed), *Emex australis* (Spiny Emex), *Marrubium vulgare* (Horehound), *Nicotiana glauca* (Tree Tobacco), *Onopordum acaulon* (Stemless Thistle), *Tribulus terrestris* (Cat-head) and *Xanthium occidentale* (Noogoora Burr).

Issue

Biodiversity

Potential impacts

The proposal has been developed to avoid and minimise impacts to biodiversity values, and further opportunities to minimise impacts would be achieved during detailed design.

However, based on the conservative indicative disturbance area, the proposal would directly impact 20 native vegetation Plant Community Types (PCTs) and one endangered ecological community (EEC) listed under the (NSW) *Biodiversity Conservation Act 2016* due to the impacts on 607 hectares of native vegetation (of which 293 hectares would not be completely cleared). The clearing of native vegetation would also result in direct impacts to 59 threatened species or their habitats. Ongoing historical agricultural use (primarily grazing) and the effects of semi-regular clearing combined with this grazing (sometimes in drought conditions) has resulted in an overall landscape that while is mostly comprised of native vegetation is not high quality undisturbed native vegetation or habitat. This includes the 14 hectares of the Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions EEC that would be directly impacted by the proposal. Opportunities to further reduce the impacts to native vegetation will be considered during detailed design. This would include the selection of the final transmission tower structure locations and access tracks.

Other minor impacts associated with other biodiversity impacts are expected (such as impacts to connectivity, water quality and bird strike). Indirect impacts are considered unlikely given the retention of vegetation (up to two metres in height) within the

Appendix A

Proposed site

Based on the information in the referral documentation, the location of the action, species records and likely habitat present in the area, there are likely to be significant impacts to:

- Black-eared Miner (*Manorina melanotis*) – endangered

Additionally, there is a possibility that the proposed action will have or is likely to have significant impacts on the following species and ecological communities and levels of impact should be further investigated:

- Australasian Bittern (*Botaurus poiciloptilus*) - endangered;
- *Austrostipa metatoris* - vulnerable;
- *Atriplex infrequens* - vulnerable;
- Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (*Allocasuarina luehmannii*) - endangered;
- Coolibah Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions – endangered;

- **Winged Pepper-cress (*Lepidium monoplocoides*) - endangered; and**
- **Yellow Swainson-pea (*Swainsona pyrophila*) – vulnerable.**

Note: uncertainty around the extent and number of protected matters that may be impacted will need to be resolved through the assessment process once final alignment and construction plans have been completed.

Note: this may not be a complete list and it is the responsibility of the proponent to ensure any protected matters under these controlling provisions are assessed for the Commonwealth decision-maker's consideration.

<i>Leipoa ocellata</i>	Malleefowl	V	<p>Identified in the SEARs as a matter requiring further consideration.</p> <p>Predicted ecosystem credit species.</p>	<p>a significant impact on the species.</p> <p>Targeted bird surveys within the proposal study area did not record any Malleefowl but did record two old Malleefowl mounds.</p> <p>The EPBC Act significance assessment for this species is detailed in Appendix E-1.</p> <p>No – the proposal is considered unlikely to have a significant impact on the species.</p>
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9.6.3 Biodiversity offset credit report

Chapter 12 of Technical paper 1 (Biodiversity assessment report) addresses Section 11 of the BAM and provides information on the application of the no net loss standard and the proposal's biodiversity offset obligations. Credit calculations were quantified using the BAM-C Version 1.2.7.2.

The proposal offset obligation for the indicative disturbance area has been calculated to require the following biodiversity credits:

- > 8,845 ecosystem credits
- > 254 species credit.

The biodiversity offset strategy comprises four options of:

- > purchasing and retirement of existing biodiversity credits currently available on the biodiversity credit register
- > establishing a biodiversity stewardship site(s) on lands with like for like biodiversity values to those impacted by the proposal
- > making a payment into the Biodiversity Conservation Fund
- > alternative strategic offset outcomes.

The final obligation would be confirmed as the design of the proposal is further refined and the disturbance area is confirmed (as discussed below).

4.3.5.1 Assessment of bushfire fuel hazard – Mallee Woodland

While large areas have been heavily modified and disturbed, the transmission line corridor contains areas of remnant vegetation including Mallee Woodlands of mixed age, Low Open Chenopod shrub land dominated by stretches of heavily grazed, and degraded to highly degraded low open chenopod of Black-bush (*Maireana pyramidata*) with a notable absence of palatable species.

Mallee Woodland and sparse shrublands are dominated by low, multi-stemmed, sclerophyllous eucalypts to 10 metres in height with a sparse to dense understorey which is dependent on rainfall and land use management.

Understorey may be dominated by sclerophyllous or non-sclerophyllous shrubs, hummock grasses, chenopods or tussock grasses. Ground layer is strongly influenced by rainfall and fires. Following heavy rain a prominent cover of ephemeral herbs with tussock grasses occur.

Whilst most of the grassland vegetation and grazed Woodland has some level of management by grazing, the success of this management practice can vary depending on the amount of rainfall in the spring period to produce abundant growth of grasses, and also the stock loading and their ability to crop the grasses to levels which will mitigate the intensity of fires that may occur in the cured grass.

Therefore, the assessment of fuel hazard will be determined for unmanaged Woodland/Low Chenopod Shrub vegetation which is the vegetation which will create the most potential for a severe fire event on and within the transmission line corridor.

4.4 Assessment of bushfire risk during construction of the proposal

The potential sources of ignition of bushfires resulting from the construction of the proposal include:

- > construction equipment including bulldozers, excavators and cranes
- > motor vehicles
- > vegetation removal including mulching
- > hot works such as welding and grinding
- > electrical faults in equipment
- > chemical fires
- > construction camps and compounds; and
- > arson.

These sources of ignition are explained further in the below sections. In general, the risk of bushfire impact on the transmission line corridor and substation site during construction is high to extreme and is dependent on factors such as fuel loads, weather and the scale (size) of fires which may occur. There is a threat to construction personnel from fast moving bushfire events which may impact large lengths of the transmission line corridor.

Management measures are required to manage and minimise these risks and these are consolidated in Chapter 5.

4.4.1 Construction equipment including bulldozers, excavators and cranes

The use of heavy construction equipment including bulldozers and excavators for building roads, excavating pads and drilling bore holes can create situations where these activities can give off sparks when steel blades encounter rock, resulting in a high level of risk of ignition of vegetation.

This risk can occur over a wider area from the machine operational area.

To reduce the level of risk the use of this equipment in areas where rock is known to occur shall be accompanied by a fire-fighting appliance such as a 'slip-on' fire-fighting unit or tanker trailers. This work shall not occur during periods of Total Fire Ban and Catastrophic Fire Weather Days.

4.5 Assessment of bushfire risk during operation

4.5.1 Bushfire risk to the proposed transmission lines during operation

There is a high probability that the proposed transmission lines could be impacted by a bush/grass fire when ignition occurs in any unmanaged vegetation during periods of high fire danger, when excessive dry (cured) fuel is available and weather conditions result in high temperatures, low humidity and strong winds travelling across the landscape from the northwest, west and southwest direction.

The risk to the transmission lines under these conditions would be dependent on the scale (size) of the fire. The risk from large scale fire events would be high to extreme.

However, the transmission lines would be constructed within easements which would be cleared of vegetation/maintained in line with the following principles which are standard TransGrid transmission line management procedure:

- > All tall growing vegetation on the easement corridor shall be removed. Tall growing vegetation is any vegetation species which may intrude on the vegetation clearance requirements at maximum line operating conditions (refer Table 4-1) (maximum conductor sag and maximum conductor blowout) at that location now or at any time in the future. The assessment of tall growing vegetation would be undertaken during detailed design and ongoing through construction by a qualified Level 4 or Level 5 arborist. An arborists report shall be provided identifying the vegetation to be removed along the transmission line route in relation to the final detailed designed transmission line conductor profiles.

In relation to the two transmission lines proposed, the clearance distances required are expected to be:

- nine metre clearance between vegetation height and maximum conductor sag point for the 330kV line; and
- 8.3 metre clearance between vegetation height and maximum conductor sag point for the 220kV line.

Vegetation within the easement that would encroach on these clearance distances would be removed.

Based on the expected tower and conductor heights vegetation with heights of between two and four metres from ground level is expected to be able to be retained in the easements. Noting that:

- two metre tall vegetation would occur at the centre area of the easement and four metres tall vegetation could occur as distance from the centreline of the conductor (line) increases
- for the 80 metre wide 330kV easement, this vegetation clearing would only be required for the centre 60 metre wide section.

4.5.2 Bushfire risk created by the proposed transmission lines during operation

The distribution of electricity via high voltage transmission lines and associated equipment has the potential to cause ignition of bushfire fuels, either within or adjoining the transmission line easement.

Ignition sources which can be attributable to high voltage transmission lines and associated equipment include:

- > trees or tree branches falling/touching conductors and bird strikes
- > equipment malfunction – transmission line failure including damage caused by high winds, lightning strike or mechanical damage [i.e. aircraft strike]
- > wind causing transmission lines to contact each other
- > arc to ground and arc between conductors caused by ionise particles in dense bushfire smoke
- > heat causing power lines to sag and connect with the ground/vegetation/structures
- > lightning strikes
- > human error – faulty installation
- > failure of power line including breakage of wires, poles, cross arms, insulators and associated equipment
- > pole-top fires caused by dust build up on insulators, causing arcing from the conductor to the tower/cross arm
- > arcing to ground through smoke plumes; and
- > electrically induced fire – current or voltage transfer due to fault and failure of the earthing system at transmission line structures.

The incidence of these ignition sources from transmission lines supported on high towers which are maintained clear of trees and combustible materials is rare.

19.4.3 Bushfire impacts

During construction the bushfire ignition risk associated with the proposal, by definition, would generally only exist in those areas that are capable of supporting a bushfire. In general the risk of bushfire impact on the proposal study area during construction would be between high and extreme and would be dependent on factors such as fuel loads, weather and the scale (size) of fires which may occur.

There would be a threat to construction personnel from fast moving bushfire events which may impact large lengths of the proposal study area.

The potential sources of ignition of bushfires resulting from the construction of the proposal include:

- > construction equipment including bulldozers, excavators and cranes – The use of heavy construction equipment including bulldozers and excavators for building roads, excavating pads and drilling bore holes would have the potential to create situations where these activities can give off sparks when steel blades encounter rock, resulting in a high level of risk of ignition of vegetation. This risk can occur over a wider area from the machine operational area
- > motor vehicles – Motor vehicle exhaust systems are known to ignite grassland vegetation. Diesel powered trucks with pollution control devices in the exhaust system would have the potential to emit burning diesel particles which ignite grassland vegetation and forest ground fuels, resulting in a high level of risk of ignition of vegetation. There is also risks associated with collision of a vehicle with a power pole or infrastructure that can result in either a spark, arc from a power supply or fire from spilt fuel being ignited
- > vegetation removal including mulching – The use of specialised slashers, mulching machines and bulldozers used for clearing vegetation would have the potential to create high risk situations where blades come into contact with rock outcrops. Where this occurs, there is the potential to result in sparks that may ignite surrounding materials. Mulch storage may also present a bushfire risk if a large volume of material is stored in a large pile for an extended period of time. The ability of mulch to self-combust, the production of methane (includes the potential for explosion) under favourable conditions and the potential for arson attack all contribute to the potential bushfire risk associated with storing mulch. Mulch may be used as a landscaping material or it may be generated during the proposals construction phase when removing and chipping of existing vegetation along the route
- > hot works – Hot works undertaken such as welding, grinding, drilling can produce sparks which have the capacity to spread for some distance on the wind, resulting in an extreme level of risk of ignition of cured (dry) vegetation

4.4.3 Important agricultural land

The DPI is undertaking important agricultural land (“IAL”) mapping across nine regions in NSW. The IAL mapping program contributes to the DPIE’s regional planning actions that identify the need to map important agricultural lands in NSW. Knowing where important agricultural land is situated and understanding its requirements, value and contribution will assist state and local government, organisations and industries with making decisions about current and future agricultural land uses. (DPI, 2020a).

Important agricultural land (“IAL”) is not precisely defined by DPI. The key document on important agricultural land “A guideline to identifying important agricultural lands in NSW” (DPI, 2017) states that IAL is defined as “existing or future location of local or regionally important agricultural industries or resources as mapped”.

A pilot project in the Central West and Upper Hunter of NSW defined important agricultural industry land as “land that is highly suitable for specific agricultural industries in accordance with the typical biophysical, marketing and climatic conditions for the locality or region”.

Issue	Potential impacts
<p>Aboriginal heritage</p>	<p>The proposal has the potential to directly and/or indirectly impact Aboriginal sites and Potential Archaeological Deposits (PADs) including:</p> <ul style="list-style-type: none"> > three Aboriginal sites (PEC-W-74 and PEC-W-75), which are isolated finds with low scientific significance at the Anabran South main construction compound and accommodation camp site > one PAD (PEC-PAD-27) at the Buronga substation upgrade and expansion site > up to 26 PADs, 60 Aboriginal sites (of low and moderate scientific significance) and 17 potential scarred trees within the indicative disturbance area along the transmission line corridor. <p>Opportunities to avoid or minimise these impacts through siting of the tower and access track locations would be explored during detailed design. Where impacts cannot be avoided, a range of mitigation and management measures would be implemented in consultation with Registered Aboriginal Parties (RAPs).</p>
<p>Non-Aboriginal</p>	<p>The transmission line corridor passes through the curtilage of three locally listed</p>

horticulture & private conservation not shown in this area.

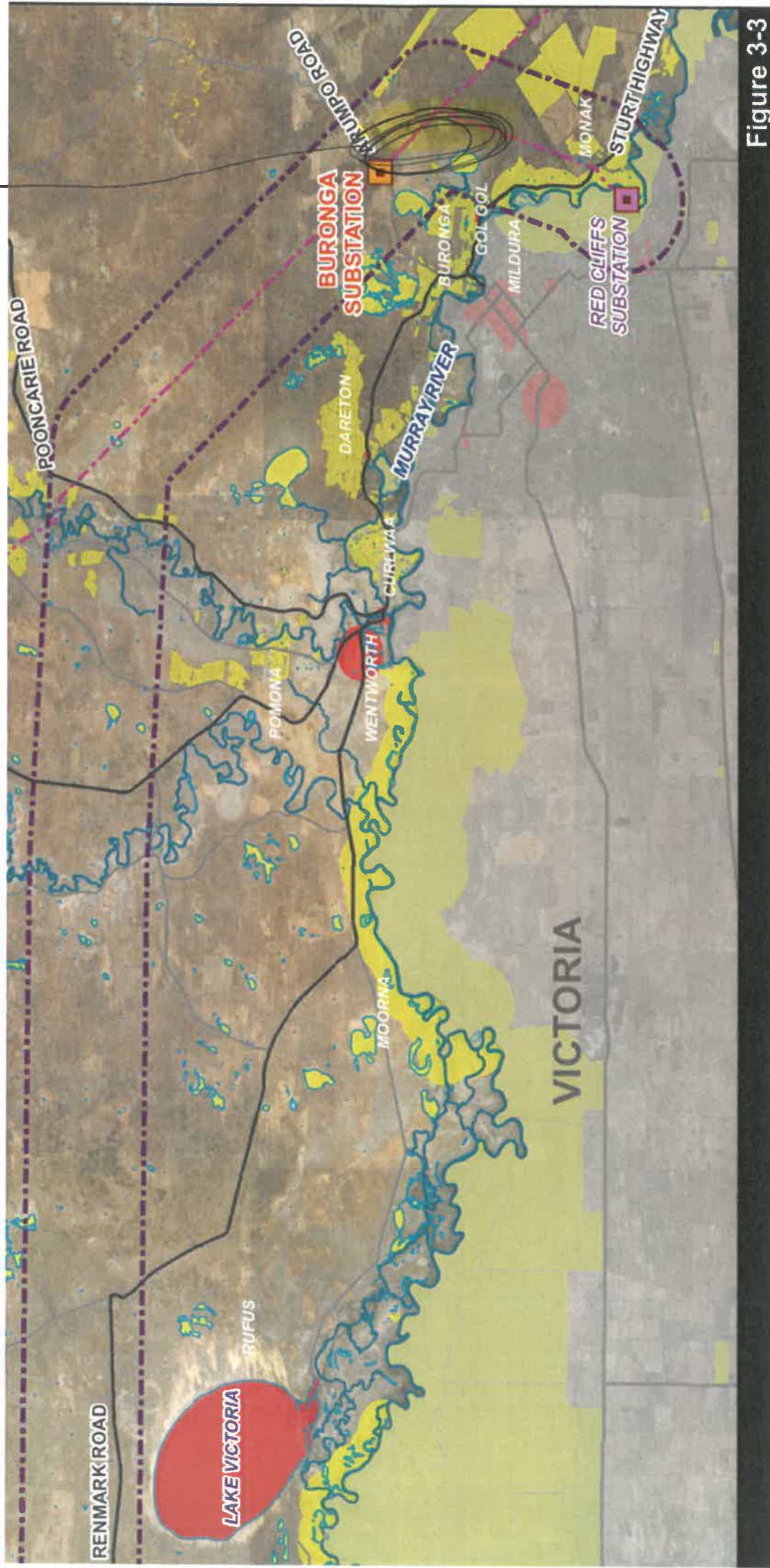


Figure 3-3

EnergyConnect preliminary alignment corridor

- Red Cliffs substation (out of scope)
- Tier 1 constraint areas
- Tier 2 constraint areas
- Existing transmission line infrastructure
- - - Alignment corridor