

29 August 2025

Director – Energy Assessments,
Development Assessment,
Department of Planning and Environment,
4 Parramatta Square,
12 Darcy Street,
Parramatta NSW 2150

**SUBMISSION IN RESPONSE TO ENVIRONMENTAL IMPACT STATEMENT
VNI West (NSW section) – APPLICATION No. SSI-72887208
&
EPBC referral 2024/09871 under the EIS bilateral assessment process**

I hereby submit my response to the VNI West Environmental Impact Statement (EIS) as published on the NSW Major Projects portal.

As a former Consultant Botanist who worked in Environmental Impact Assessment, I have reviewed Section 7 'Biodiversity' of the EIS and 'Technical Report 1 - Biodiversity Development Assessment Report' (BDAR) as far as possible in the limited time. My response pays special attention to Matters of National Environmental Significance (MNES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and removal of native vegetation.

As an approved bilateral assessment process under the EPBC Act, the EIS must address Commonwealth protected matters (MNES), not just state protected matters.

I object to the VNI West EIS on the grounds that the EIS has not adequately assessed impacts on MNES, cumulative impacts and has not adequately assessed avoid and minimise measures. As a result of this failure, the impacts of VNI West on threatened species and threatened ecological communities are clearly unacceptable and cannot be approved by the Minister.

Cumulative impacts on MNES

VNI West is part of the larger project of the Integrated System Plan (ISP). VNI West (NSW) section can only proceed if the adjoining projects also proceed (VNI West (Vic Section), Western Renewables Link, Humelink, EnergyConnect etc).

The cumulative impact assessment for VNI West (Appendix O, Technical Report A) estimates a cumulative impact of 11,110 hectares of native vegetation removal. This is an abominable amount of damage to the environment for projects that are meant to be helping the environment. This is the equivalent of clearing the size of the City of Sydney four times over. The cumulative impact assessment does not include the Western Renewables Link (WRL). The Environment Effects Statement (EES) for WRL states that WRL will be a major contributor to native vegetation loss in Victoria (but it does not include projects in NSW).

The impacts on MNES must be assessed by the Commonwealth at the scale of the complete ISP project, not piecemeal, section by section, as this does not give an accurate representation of the

total impact on the MNES. Species don't understand state borders or project scopes. We need to be assessing the entire impacts on the species, not the impacts of individual projects.

Governments need to be taking this huge impact seriously as they are at risk of contributing to the decline and extinction of native species by not addressing the enormous scale of these impacts. The Minister cannot approve the project without first requiring assessment of the cumulative impacts for each MNES for all ISP projects.

Alternative methods to avoid and minimise clearing

Given the unacceptable amounts of cumulative destruction that is happening as a result of the ISP, avoid and minimise measures must be to the highest standard possible and all alternatives need to be investigated before further impacts are approved.

The EPBC Act *Environmental Offsets Policy* states that: "*Offsets will not be considered until all reasonable avoidance and mitigation measures are considered...*". The flowchart in Figure 1 of the *Environmental Offsets Policy* shows that the assessment process must ask "*Have all reasonable measures been taken to avoid and mitigate impacts on protected matters?*".

One key measure that governments need proponents address is the reduction in clearing associated with underground transmission.

The transmission corridor for an underground HVDC cable is up to 80% narrower than overhead transmission and would reduce the impacts on Critically Endangered ecosystems and threatened species habitat by up to 80%.¹

Most of the impacts on MNES associated with VNI West are a direct result of land clearing for the transmission corridor. The transmission corridor of VNI West is estimated to be 70 metres wide. A narrower corridor is the quickest and most direct way to reduce impacts associated with the transmission corridor.

The failure of the EIS to identify this avoidance measure, or assess how cumulative impacts could be reduced by undergrounding, demonstrates the failure of the EIS to meet the requirements of the EPBC Act *Environmental Offsets Policy*.

See Attachment 1 for further details of how undergrounding can be used to avoid and minimise impacts on the environment, which have also not been addressed by the EIS. The Minister must require a direct comparison of impacts from overhead transmission versus underground transmission before approving the project.

Biodiversity offsets strategy fails to secure enough biodiversity offsets

The biodiversity offsets strategy has only identified 65% of the biodiversity offsets that need to be provided. With so many developments in this area, offsets are becoming scarce. The government should require more certainty about whether offsets are available on the ground before approving projects. Approving impacts before it is known whether sufficient offsets are available risks the

¹ E.g. The easement for the underground sections of Basslink (Victoria) is 11.5 metres wide, compared with 55 metres for the sections that are overhead, which is an 80% reduction in width (APA 2023).

government failing to manage the risk of extinction to threatened species and threatened ecological communities.

VNI West will contribute to extinctions

If VNI West (NSW) contributes to the 11,000 ha cumulative impact on native vegetation, it will contribute to loss of biodiversity and species extinction. The government needs to get serious about their legislated role as protectors of the environment but at present, they are ignoring how these impacts can be reduced by undergrounding.

Yours sincerely,



Shana Nerenberg.
Botanist

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Attachment:

Submission to Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

via online submission form

12 July 2023

Dear Committee members,

RE: Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

Please accept my technical submission addressing the following terms of reference:

- (a) the costs and benefits of undergrounding,
- (d) any environment impacts of undergrounding.

Introduction

My former occupation was Consultant Botanist at Biosis Pty Ltd undertaking Environmental Impact Assessment for large government projects. I am no longer in the industry and have no conflicts of interest in transmission projects. My only interest is compliance with and protection of the environment under existing environmental legislation.

I have expert knowledge in assessing impacts on threatened species and threatened ecological communities, including those impacted by the Humelink project. Prior to my professional experience, I undertook ecological research in the South West Slopes of NSW including on some of the properties affected by Humelink. I became aware of the Humelink project when farmers affected by the proposed development approached me for help with scientific research data I collected on their properties.

From my knowledge of construction impacts on threatened species, one of the key benefits of undergrounding is the potential to reduce the impacts by up to 80% compared with overhead transmission. Undergrounding will, in some instances, completely avoid impacts to sensitive areas like waterways – an outcome not achievable with overhead transmission lines. The impacts of undergrounding on threatened species and native vegetation are therefore likely to be far less than overhead transmission.

The following sections will provide details of how impacts on threatened species and native vegetation can be reduced using underground transmission lines. It is assumed that only HVDC cables would be considered for undergrounding (not HVAC).

Obligations under the EPBC Act

Transgrid submitted a referral (2021/9121) to the federal Minister for the Environment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for approval of significant impacts on protected matters, termed Matters of National Environmental Significance (MNES).

NOTE: the current Humelink EIS is an approved bilateral process under the EPBC Act. Impacts on MNES will be assessed during the EIS process so that Commonwealth-protected as well as state-protected matters must be considered during the state-based planning process. I will focus on MNES as there is overlap between the two and typically Commonwealth-listed matters are the more seriously threatened.

Under the EPBC Act, the proponent is required to avoid and mitigate impacts on protected matters (DSEWPaC 2012). Only after impacts have been minimised, and a residual of impacts cannot be avoided, then biodiversity offsets can be considered (DSEWPaC 2012).

Transgrid's EPBC referral and the EIS scoping document (Aurecon 2022) have made zero assessment of whether overhead or underground transmission is better able to avoid or minimise impacts on protected matters. This is a serious flaw in the assessment process. The remainder of this submission will provide an overview of how underground transmission lines have far more potential to avoid and minimise impacts on threatened species and threatened ecological communities than overhead transmission lines.

Benefits of undergrounding to threatened species and ecological communities

1. Reduced width of transmission corridor/easement

Habitat loss and fragmentation are key threats to native species. Construction of Humelink will require the clearing of large amounts of native vegetation and threatened species habitat, and the cleared corridor will contribute to fragmentation (Table 1). Overhead transmission lines for Humelink require a corridor 70 to 80 meters wide (Aurecon 2022). Where transmission lines are being duplicated, the corridor could be as wide as 130 m.

The initial impact assessment for Humelink has estimated that 1861.72 hectares of critically endangered woodland will be cleared to form this corridor (Table 1). For comparison, Bicentennial Park is 40 hectares so that 1861.72 hectares is a huge impact that will further threaten an ecosystem that is already on the brink of extinction.

Underground transmission lines could save as much as 80% of the impacts of overhead transmission lines. For example, the width of the easement for Basslink's underground cable is 11.5 metres, which is 80% narrower than Basslink's overhead transmission lines, which are 55 metres (APA 2023).

The benefits of a narrower transmission corridor for threatened species include:

- Reduced overall amount of clearing and habitat loss – an 80% reduction in corridor width has potential to save up to 1488.94 hectares of critically endangered grassy woodland and threatened species habitat (Table 1).
- Reduced risk to wildlife when crossing the corridors – Koalas, for example, are most vulnerable to predators when they have to descend from the trees and cross open ground. The risk of crossing an 80 m corridor is far greater than 11.5 m.
- Reduced barriers to wildlife movements – many species will not cross large open gaps at all and so become isolated when vegetation is cleared. Isolation is especially detrimental for threatened species with small numbers remaining. Species particularly affected barriers to movement include Squirrel Gliders (vulnerable in NSW) and Greater Gliders (Table 1). For example, Squirrel Gliders typically glide between gaps 20 – 35 m wide (van der Ree *et al.* 2010) so a corridor 70 to 80 metres wide may isolate populations. If gliders crossed on the ground, they would be very vulnerable to foxes, feral cats and other predators, so that the transmission easement would still contribute to their mortality.

While the construction corridor would be wider than the permanent easement, careful construction management can keep impacts to a minimum. Figure 1 shows a carefully managed construction corridor for a 525 kV underground transmission line. The construction corridor is not more than 20 m wide, still a 75% reduction compared with an 80 m corridor (Figure 1). The Committee must be sure to use Australian standards of construction management when assessing construction impacts. Unfortunately, I have come across some misinformation regarding the width of the construction corridor based on overseas examples with poor environmental regulation or confusion between HVDC and HVAC cables.



Figure 1. Construction of the 500 km long 525 kV SuedOstLink in Germany using construction corridor of minimum width necessary, as would be required in Australia. The construction corridor appears to be close to the 11.5 m width quoted above with another 3 m on each side for access and stockpiling excavated material, totalling 17.5 m. Source: TenneT

Table 1 lists the proposed impacts on MNES as provided in the Humelink EPBC referral 2021/9121. Data in *italics* is copied and pasted from the referral. The last column estimates the potential reduction that could be achieved through a carefully designed underground transmission line.

Table 1. Proposed impacts on matters protected under the EPBC Act (MNES) by Humelink overhead transmission project

Table 1: Proposed impacts on matters protected under the EPBC Act (MNES) by Nulmerlink overhead transmission project			Potential savings by undergrounding
Protected matter (MNES)	Listing status	Size of impact	
Threatened ecological communities			
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	1861.72 ha [4598.6 acres]	Reduce by up to 80% down to 372.34 ha [920 acres]
Alpine Sphagnum Bogs and Associated Fens	Endangered	5.27 ha	Reduce by up to 80% down to 1.05 ha
Grey Box Grassy Woodlands and Derived Native Grasslands.	Endangered	0.14 ha	Avoid completely with reduced corridor width
Threatened flora species			
Yass Daisy (Ammobium craspedioides)	Vulnerable	The proposed action would potentially clear large areas of habitat of these species NOTE: Initial assessment appears inadequate – Swamp Everlasting has been assessed as having the same habitat as the first three flora species. This is incorrect. Swamp Everlasting relies on wetlands, the previous three species occur in grasslands and grassy woodlands (DAWE 2021).	Reduce by up to 80%
Hoary Sunray (Leucochrysum albicans var. tricolor)	Endangered		
Button Wrinklewort (Rutidosia leptorrhynchoides)	Endangered		
Swamp Everlasting (Xerochrysum palustre)	Vulnerable		
Bago Leek Orchid (Prasophyllum bagoense)	Critically Endangered	The proposed action has the potential to remove small areas of potential habitat for these species, introduce weeds and potentially alter hydrological processes that may support species’ microhabitats.	Avoid completely with reduced corridor width
Terrestrial Leek Orchid (Prasophyllum keltonii)	Critically Endangered		
Threatened fauna species			
Swift Parrot (Lathamus discolor)	Critically Endangered	The proposed action may result in clearing of potential foraging habitat in suitable woodland areas near Wagga Wagga NOTE: Initial assessment appears inadequate – Swift Parrot and Superb Parrot assessed as having the same habitat requirements when their life histories and foraging behaviour are completely different. Swift Parrot forages in trees on flowers and psyllid lerps in Eucalyptus species (TSSC 2016). Superb Parrot feed mostly on the ground, where they take a variety of native and introduced seeds (TSSC 2016a).	Reduce by up to 80%
Superb Parrot (Polytelis swainsonii)	Vulnerable		
Pink-tailed Worm Lizard (Aprasia parapulchella)	Vulnerable	The proposed action may result in clearing of potential habitat for these two species. NOTE: Initial assessment appears inadequate – Pink-tailed Worm Lizard assessed with Striped Legless Lizard but the two have different habitat requirements (TSSC 2015, TSSC 2016b).	Reduce by up to 80%
Striped Legless Lizard (Delma impar)	Vulnerable		
Koala (Phascolarctos cinereus)	Endangered (QLD, NSW, ACT)	The proposed action would result in the clearing of known and potential habitat, including koala use trees (used for sheltering, dispersal, foraging and potentially breeding).	Reduce by up to 80%
Greater Glider (Petauroides volans)	Endangered	This species has been observed during survey and field verification of the extent of habitat is subject to further field surveys in 2022. [...] While efforts would be made to minimise or avoid hollow bearing trees, it is likely that hollows and other features would be removed from potential Glider habitat.	Reduce by up to 80%
Golden Sun Moth (Synemon plana)	Vulnerable	The proposed action may result in clearing of large areas of potential habitat for the Golden Sun Moth.	Reduce by up to 80%

2. Use of Horizontal directional drilling

Horizontal directional drilling (HDD) is a construction method commonly used to avoid impacts on sensitive areas such as waterways, wetlands, sensitive vegetation and cultural heritage (Figure 2). HDD involves drilling a tunnel under an obstacle rather than digging a trench from the surface (as seen in Figure 1). HDD is also used to install cables under roads and other built environment. By avoiding open trenching, HDD further reduces the impacts of habitat loss and fragmentation.

HDD can only be used for underground infrastructure. This method of avoiding and minimising impacts is not available for overhead transmission lines. HDD still needs to be carefully managed to minimise impacts at the start, end and during the drilling and there are likely to be engineering constraints in very steep terrain.

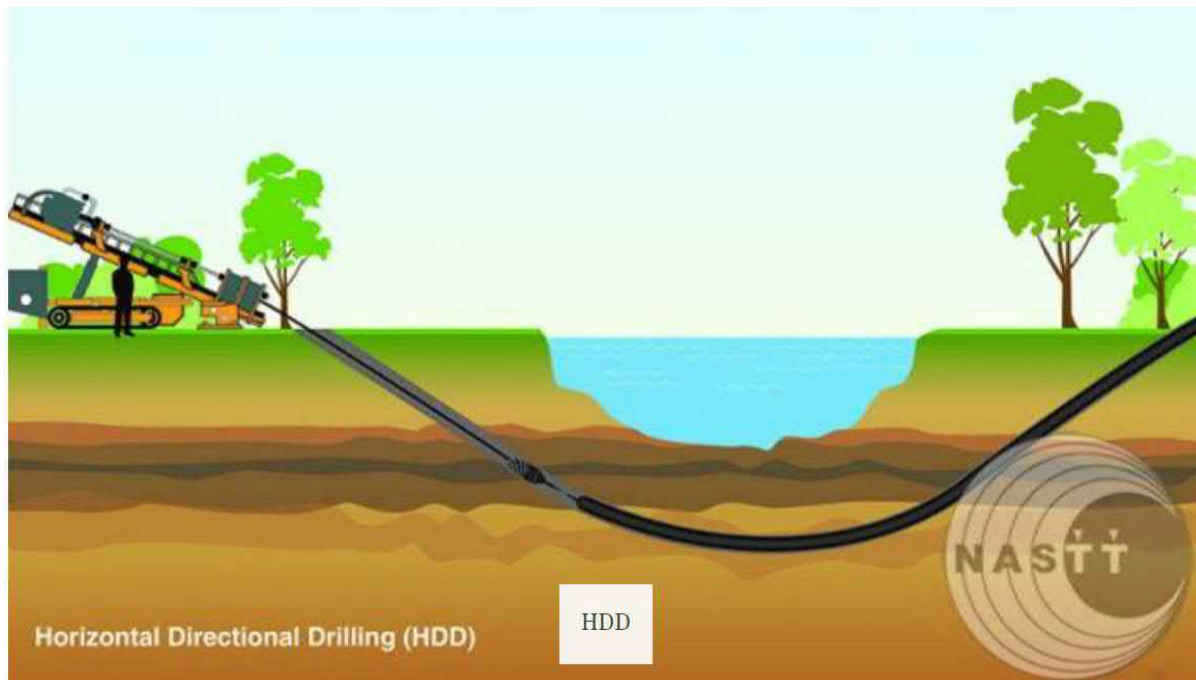


Figure 2. Horizontal directional drilling used to minimise impacts on rivers and sensitive vegetation. Source: NASTT

3. Co-location within existing easements

Underground transmission lines can be located within existing transmission corridors, utilities easements, transport corridors and under roads. Co-location minimises the need for new land clearing and so minimises impacts on threatened species habitat and native vegetation.



Figure 3. Underground transmission line being installed within existing transmission easement. Source: Renewables Grid Initiative

4. Reduced need to clear vegetation on an on-going basis

Overhead transmission lines require a 70 – 80 m easement to be managed for vegetation for the entire life of the infrastructure (Figure 4). Underground transmission lines would reduce the amount of vegetation management and associated disturbance to trees and wildlife by 80% due to the reduced width of underground easements.

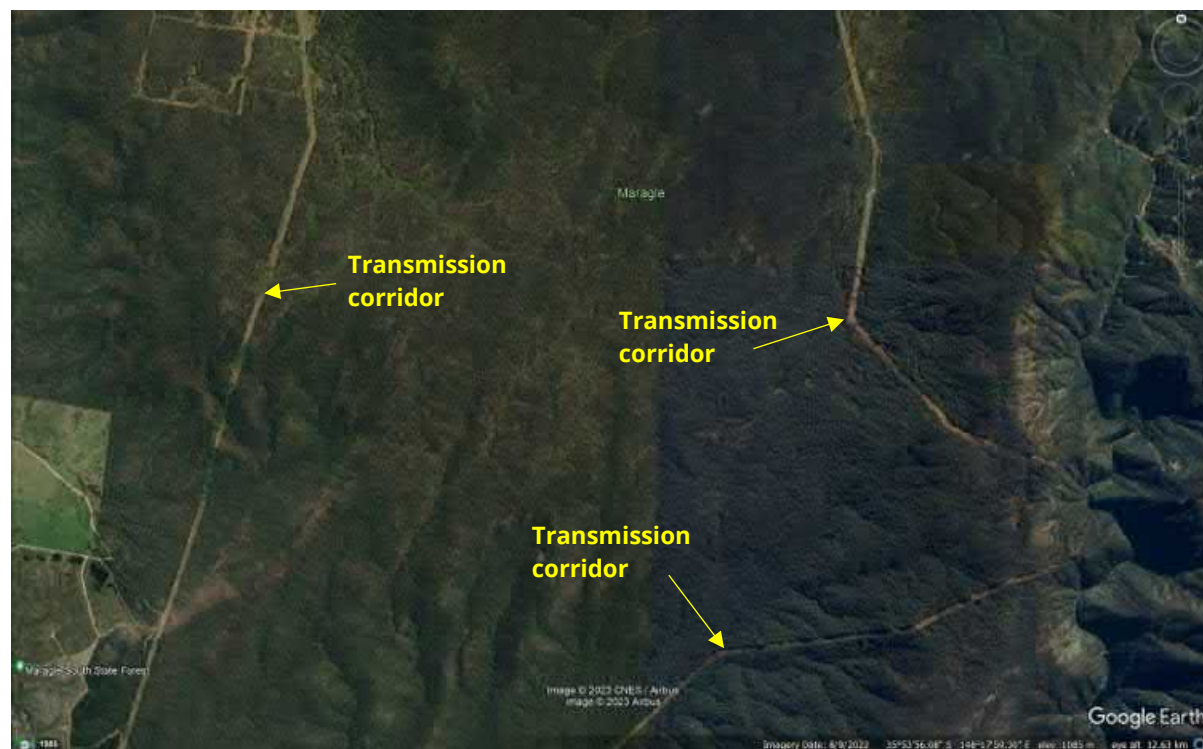


Figure 4 (above and below). Google Earth images of overhead transmission corridors constantly cleared of vegetation at Maragle in the Kosciuszko National Park. Notice how much wider the transmission corridors are compared with the road.



Conclusion

My professional opinion is that the environmental impact assessment for Humelink to date has been inadequate for the scale of the impacts proposed. The impact assessment does not comply with requirements under the EPBC Act to avoid and mitigate impacts on protected matters. The EPBC referral and associated impact assessment contain errors in assessing habitat requirements for some threatened species suggesting external expertise is required to review the assessment.

When combined, the upgrades to the transmission network across south eastern Australia are going to amount to one of the biggest environmental impacts in recent history. Regulators and parliamentarians need to hold the developer to account rather than accept the excuses and laziness currently dressed up as economics.

Yours sincerely,



Shana Nerenberg.
Botanist and registered native vegetation assessor

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EPBC Referral 2021/9121, New transmission infrastructure, HumeLink, downloaded from EPBC referrals list:

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Figure 1. Tennet 535 kV underground cable construction: <https://netztransparenz.tennet.eu/tinyurl-storage/detail/suedostlink-first-award-of-contract-for-plastic-insulated-underground-cable-for-525-kilovolts/>

Figure 2. Horizontal Directional Drilling diagram: <https://nastt.org/resources/photos/hdd/>

Figure 3. Underground cable construction: https://renewables-grid.eu/fileadmin/user_upload/Files_RGI/Event_material/Prospects_of_undergrounding_power_lines/2017_RGI_workshop_underground_cables_Volker_Wendt_Europacable.pdf

Figure 4. Google Earth © 2023