

Goyder South Hybrid Renewable Energy Facility

Justification for Impacts to MNES

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JUSTIFICATION AND REASONING FOR IMPACTS TO MNES

This document provides justification and reasoning for impacts to Matters of National Environmental Significance (MNES) protected by the *Environment and Biodiversity Conservation Act 1999* (EPBC Act) associated with the Goyder South Hybrid Renewable Energy Facility (Goyder South Project; the Project).

Ecological assessment has determined that infrastructure associated with 'Stage 1A', 'Stage 1B' and the 'Overhead Transmission Line (OTL) and Substation West' components of the Goyder South Project will impact upon Iron-grass Natural Temperate Grassland of South Australia (INTG) Threatened Ecological Community (TEC), Pygmy Blue-tongue Lizard (PBTL) (*Tiliqua adelaidensis*) and possibly Trailing Hop-bush (*Dodonaea procumbens*). An overview of estimated impacts is provided in Table 1.

Table 1. Overview of estimated impacts to INTG, PBTL and *Dodonaea procumbens* across 'GWF Stage 1A', 'GWF Stage 1B' and 'OTL and Substation West'.

Infrastructure	INTG (Class B)	INTG (Class C)	PBTL habitat	PBTL individuals	Trailing Hop-bush (<i>Dodonaea procumbens</i>)
GWF 1 Stage 1A (Referral 2021/8958)	12.67 ha	0.09 ha	8.04 ha	Possibly 1 PBTL*	Possibly*
GWF 1 Stage 1B (Referral 2021/8957)	0	0	2.61 ha	Possibly 1 PBTL*	0
OTL and Substation West (Referral 2021/8959)	1.08 ha	0.03 ha	0	0	0
Totals	13.75 ha	0.13 ha	10.65 ha	Possibly 2 PBTLs*	Possibly*

* Refer to Table 2 for more information on the possible impact to individual PBTLs and *Dodonaea procumbens*.

As outlined in the EPBC referrals, the Project is considered unlikely to impact on the following MNES identified within or adjacent to the Project Area:

- Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia TEC
- Peep Hill Hop-bush (*Dodonaea subglandulifera*)
- Silver Daisy-bush (*Olearia pannosa* ssp. *pannosa*)
- Spiller's Wattle (*Acacia spilleriana*)

Neoen have avoided and minimised impacts to MNES as much as possible during the design process by understanding the location of MNES and adjusting the design, particularly the proposed location of infrastructure, to avoid and minimise impacts to MNES as much as possible. However, some impacts are unavoidable due to minimum infrastructure requirements, specific design constraints, safety requirements, local topography (steep hills and creeks/drainage lines) and constructability constraints.

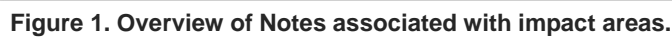
Estimated impact footprints to MNES are shown in Figure 1 to Figure 16, while Table 2 provides justification for the impacts and reasoning for why the impacts are considered unavoidable.

Table 2. Justification for unavoidable impacts to EPBC MNES (INTG TEC, PBTLs and *Dodonaea procumbens*).

Note #	Infrastructure	Impact to PBTL habitat	Impact to INTG	Other impacts / additional information	Justification for impact / reason why impact is unavoidable	Figure Reference
1	Wind Turbine Generator (WTG) site.	-	Yes (Class B)		Small impact to Class B INTG is likely to be unavoidable. WTG site cannot be moved north due to proximity to neighbouring WTG, or east due to site boundary.	2
2	5 WTG sites and associated access track.	-	Yes (Class B)		Access road route located on top of ridgeline. Relocation of access road further east outside of Class B INTG has been investigated but is not considered practicable as it is estimated to cost an extra \$2.7 million for civil construction works, which is considered economically unviable. Roads requiring increased cut and fill also generate substantial erosion impacts.	3
3	WTG site and access track.	Yes	-		Impact to PBTL habitat unavoidable due to Development Approved turbine location being located in the middle of the PBTL habitat. While 200m micro-siting is allowable, no appropriate location is available outside of the PBTL area from a construction and energy yield perspective.	4
4	WTG site.	-	Yes (Class C)		Minor impact to Class C INTG to suit optimal construction orientation. Moving the WTG site downhill (outside of Class C INTG) will increase construction costs associated with additional cut and fill, and reduce energy yield.	5
5	Widening of existing road (Springbank Road) to the east.	-	Yes (Class B)	Road widening on eastern side may potentially impact on <i>Dodonaea procumbens</i> located within the eastern road reserve.	Road cannot be widened to the west due to creek and increase in topographic complexity. The extent of road widening required is not yet known. As such it is not known if <i>Dodonaea procumbens</i> will be impacted or not. The road will only be widened if necessary to achieve minimum width requirement.	6
6	WTG site.	-	Yes (Class B)		Impact to Class B INTG unavoidable due to Development Approved turbine location. Moving the WTG site east (to avoid/minimise impact to Class B INTG) would locate it on a slope and result in a significant increase to construction cut and fill cost, as well as erosion potential.	6
7	Access track (including widening of existing where possible).	-	Yes (Class B)		Existing track will be utilised where possible. Increased turning radius for component transport has been used at west end out of necessity for oversized vehicles. Impact has been shifted to be located within adjacent cropping as much as possible, in order to minimise impact to Class B INTG as much as possible.	6

Note #	Infrastructure	Impact to PBT habitat	Impact to INTG	Other impacts / additional information	Justification for impact / reason why impact is unavoidable	Figure Reference
8	WTG site and access track.	Yes	-		Impact to PBT habitat is unavoidable due to Development Approved WTG location and a relatively straight route is needed to neighbouring turbines to the east. WTG cannot be moved south due to spacing requirement from neighbouring WTG and cannot be moved north due to agreed setback from neighbouring dwelling.	7
9	Access tracks.	Yes	-		Topography, specifically a valley between the two WTGs, prevents the possibility of a single road between the two WTGs.	8
10	Underground electrical cabling (installed via trenching).	Yes	-		Alternative routes to the north and south limited by topography and creeks.	9
11	Underground electrical cabling (installed via trenching).	Yes	-		Alternative routes to the north and south limited by Peppermint Box (located to the north), topography and creeks.	10
12	Access tracks.	Yes	-	One individual PBT has previously been recorded within the impact area, so may potentially require relocation.	Two crossings proposed due to excessive slope between turbine locations and approach from the south east. The civil construction cost is approx. \$400 000 in order to directly link the WTGs. This additional cost is especially due to the large amount to fill, and this may be a huge problem if the cut does not provide enough material to be re-used as fill.	11
13	Widening of existing road (property access track).	Yes	-		Road widening to the north is necessary due to a creek to the south.	12
14	Underground electrical cabling (installed via trenching).	Yes	-	One individual PBT has previously been recorded within the impact area, so may potentially require relocation.	Impact from cable trenching from neighbouring turbine is necessary to avoid cost associated with 700m of additional cable trenching to go around PBT habitat to the south. Additional cable trenching will not only increase material and labour costs but also electrical losses. If possible, cabling will be micro-sited (shifted) to avoid the need to relocate previously recorded PBT individual.	13
15	Access track.	Yes	-		Component transport turning radius and local topography necessitates layout and location of access track.	14

Note #	Infrastructure	Impact to PBT habitat	Impact to INTG	Other impacts / additional information	Justification for impact / reason why impact is unavoidable	Figure Reference
16	Overhead transmission line (including towers and maintenance access track(s)).	-	Yes (Class B)		<p>Towers have been widely spaced to minimise impact to Class B INTG and cannot be spaced any further apart (to further reduce impact).</p> <p>An access track of 5m wide is required for maintenance purposes. Existing farm access tracks adjacent to this section of the OTL are proposed to be used (to minimise additional impacts) but may require upgrading or minor widening. As a worst-case scenario, the impact to Class B INTG has been estimated at 5m wide and included in the overall impact to Class B INTG. However, the actual impact is expected to be less due to use of existing tracks (which would already contain some cleared areas void of INTG).</p> <p>Individual spur tracks of 5m wide will be constructed to access each transmission line tower site.</p> <p>The combination of using existing farm access tracks and spur tracks is expected to be a lower impact than constructing a new track beneath the OTL.</p>	15
17	Overhead transmission line (including maintenance access track).	-	Yes (Class C)		<p>No towers anticipated within Class C INTG.</p> <p>However, impact to Class C INTG may be required for 5m wide maintenance access track beneath the overhead transmission line and has been included in the overall impact to Class C INTG as a worst-case scenario.</p>	16



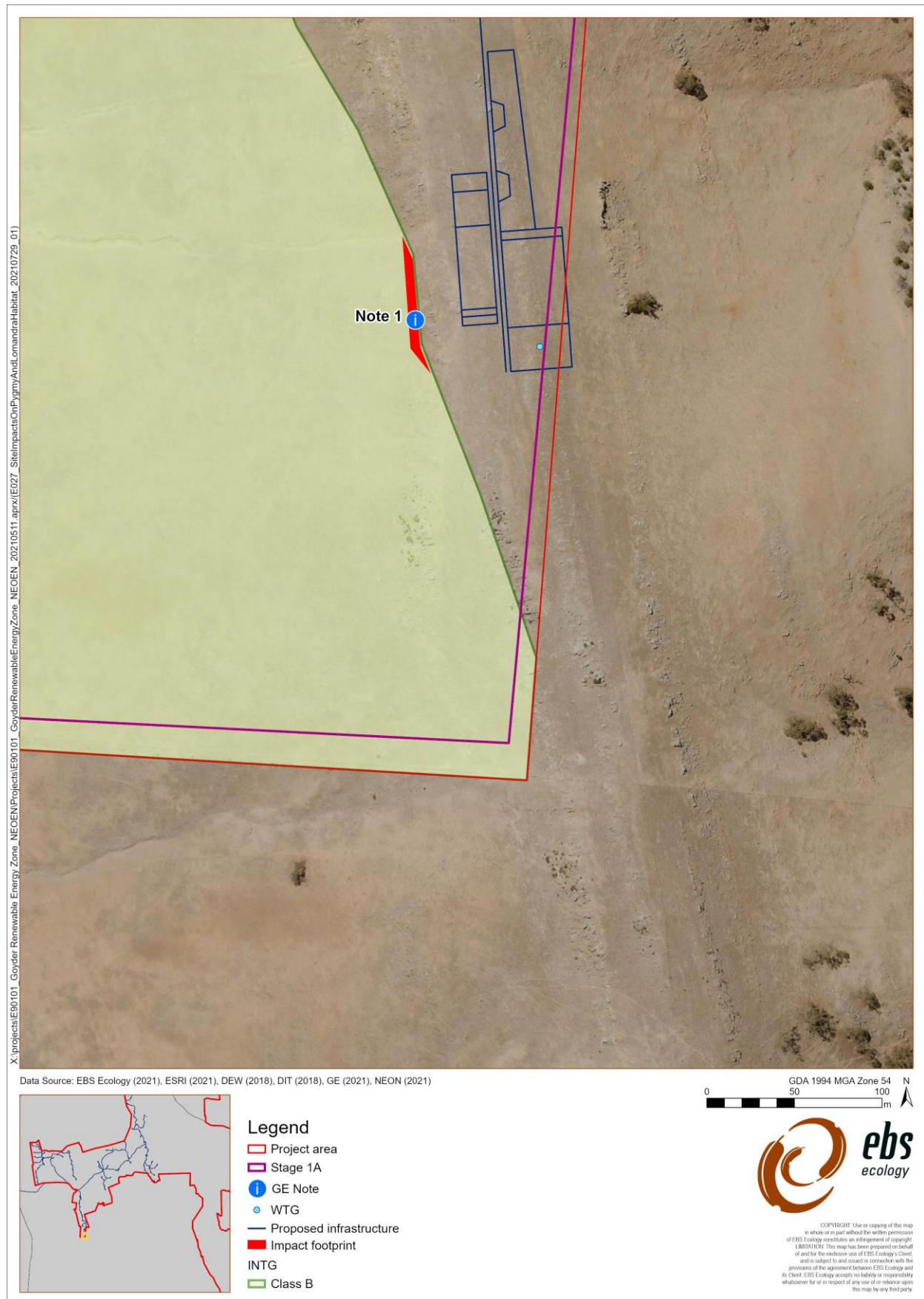


Figure 2. Note 1: Estimated impact to Class B INTG associated with WTG site.

Figure 3. Note 2: Estimated impact to Class B INTG associated with five WTG sites and access track.

Figure 4. Note 3: Estimated impact to 'Potential' PBTL habitat associated with WTG site and access track.



Figure 5. Note 4: Estimated impact to Class C INTG associated with WTG site.

Figure 6. Note 5: Potential impact to *Dodonaea procumbens* and Class B INTG if road widening is required. Note 6: Estimated impact to Class B INTG associated with WTG site and access track. Note 7: Estimated impact to Class B INTG associated with access track.

Figure 7. Note 8: Estimated impact to 'Potential' PBTL habitat associated with WTG site and access track.

Figure 8. Note 9: Estimated impact to 'Potential' PBTL habitat associated with access tracks.

Figure 9. Note 10: Estimated impact to 'Likely' PBTL habitat associated with underground electrical cabling.

Figure 10. Note 11: Estimated impact to 'Likely' PBTL habitat associated with underground electrical cabling.

Figure 11. Note 12: Estimated impact to 'Likely' and 'Potential' PBTL habitat associated with access tracks. One PBTL previously recorded within the proposed impact area may potentially require relocation.

Figure 12. Note 13: Estimated impact to 'Likely' PBTL habitat associated with widening of existing road/track.

Figure 13. Note 14: Estimated impact to 'Likely' and 'Potential' PBTL habitat associated with underground electrical cabling. One PBTL previously recorded within the proposed impact area may potentially require relocation if electrical cabling cannot be micro-sited (shifted).

Figure 14. Note 15: Estimated impact to 'Potential' PBTL habitat associated with access track.

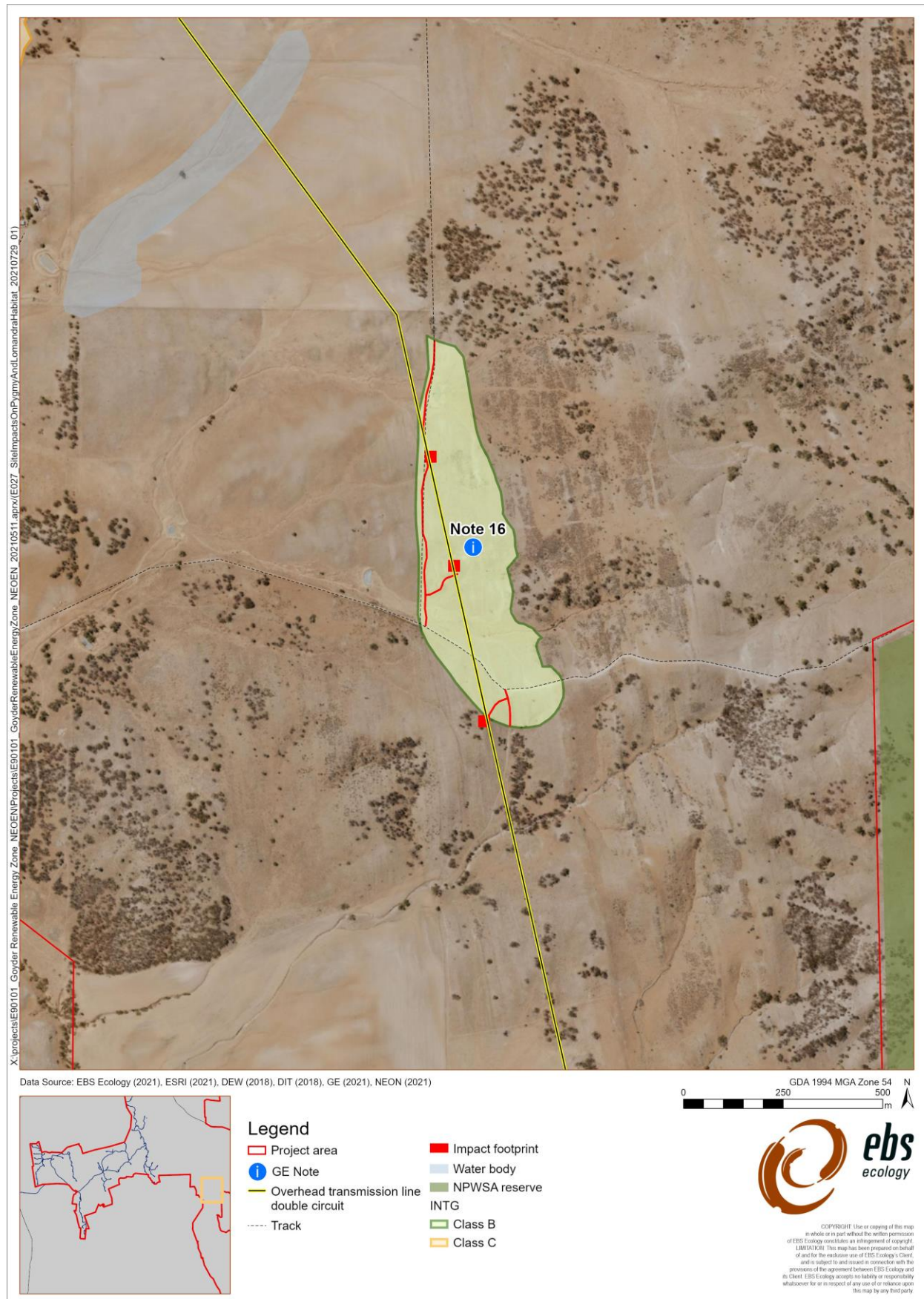


Figure 15. Note 16: Estimated impact to Class B INTG associated with overhead transmission line, including tower sites and maintenance access tracks.



Figure 16. Note 17: Estimated impact to Class C INTG associated with potential maintenance access track.



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