

- c) how the impacts of the proposed variation on matters of national environmental significance compare with those of the original proposal
- d) if applicable, the impacts of the proposed variation on matters of national environmental significance not considered in the referral or assessment of the original proposal
- e) if applicable, alternatives, mitigation measures and offsets to compensate for additional impacts on matters of national environmental significance.

Details of the proposed variation to the action

The project description within the original referral describes:

“DP Green Energy Pty Ltd (100% owned by the DP Energy Group of companies) propose to develop a wind farm (the Project) in the Calliope Range, approximately 75 km west-south-west of Gladstone in Central Queensland and within the Banana Shire local government area. The Project would comprise of the installation of around 70 wind turbines with a capacity of approximately 420MW of electricity supplied to the national electricity grid.”

While the project is substantially the same as that included in the initial proposal, the following changes have occurred:

1. The project design has been further developed and refined, increasing the megawatts (MW) of supplied electricity from approximately 420MW to a maximum installed capacity of 462MW (noting that the number of turbines proposed has not increased, only the electrical output of each turbine) and strategically locating the site office, site substation and switching station, underground cabling, overhead connections, track network, turbines and temporary construction compound in response to additional ecological information.
2. A Project Area has been introduced into the Project design. The Project Area is a micro-siting corridor surrounding the Development Footprint within which all development (and impacts) will occur, and within which the Development Footprint can be moved during detailed design, to allow for micro-siting.
3. Further ecological surveys have occurred during 2022, which will be reported on within the Preliminary Documentation. Findings have informed Project design.

These changes have resulted in an increase to the Development Footprint from 895.5ha to 1,023.19ha, an increase of 127.69ha. This is the maximum area of impact and the reason for this application to vary the action.

Table 1 provides a summary of design changes between the referred design and the current, detailed design. Refer to Attachments A and B for a comparison of the project design from the original referral with the current, variation design.

Vegetation clearing is necessary to enable this development to occur safely, however it has been rationalised in a way that considers topographical, geotechnical and environmental constraints. The Project site contains habitat for various threatened species, which has been considered through an ecological assessment process. Clearing cannot entirely avoid habitat, however ground truthing surveys have informed the design of the current Development Footprint to minimise impacts to the greatest extent possible, whilst also providing for wind farm viability. Further detail on the reason for the increase in the Development Footprint is included below.

Table 1 Summary of changes between referred Project design and current variation Project design.

Item	Referred (2021) design	Current (2022) design
Project Area and Development Footprint	<p>Project Area representing the indicative area within which development and impacts will occur. This area includes the potential development footprint for proposed tracks, turbines, laydown areas, switchyards, powerlines, meteorological masts, substations and facilities.</p>	<p>The current design integrates a micro-siting corridor termed Project Area within which all impacts will occur. Refer to below definitions.</p> <p>Project Area: corridor surrounding the Development Footprint, within which all development (and impacts) will occur. Provides for the reasonable movement of the Development Footprint (or infrastructure within the Development Footprint) within this defined area to enable avoidance, minimisation and other mitigation of impacts, whilst not materially increasing the type and quantum of impacts.</p> <p>Development Footprint: the maximum area (hectares) of impact. It is wholly located within the Project Area, however not necessarily at a fixed location, providing flexibility to avoid, minimise or otherwise mitigate impacts during detailed design and construction. This is the area of direct impact subject to assessment and approval under the EPBC Act.</p>
Maximum area of impacts	895.5ha	<p>1,023.19ha (increase of 127.69ha)</p> <p>The increased area provides for inclusion of adequate buffers into the Project design. The buffers accommodate geotechnical constraints including batters and slopes to ensure access is provided in difficult terrain for the delivery and construction of turbine infrastructure.</p>
Site tracks	168km site tracks	<p>Optimised track design with 124km site tracks. This represents a reduction in tracks and associated potential impacts.</p> <p>The layout has been designed with the objective of providing access to all infrastructure whilst minimising overall track length, to reduce permanent loss of land, environmental impacts and the number of water crossings required.</p> <p>Generally, the running surface of the tracks will be approximately 6m in running width although wider on bends to accommodate over-dimension vehicles and with the provision of passing bays.</p> <p>Based on the above standard track dimensions there are five different track categories proposed for the wind farm tracks, namely:</p> <ul style="list-style-type: none"> • A: Double carriageway with no cable trench – 16m • B: Double carriageway with cable trench – 23m • C: Single carriageway with no cable trench – 10m

Item	Referred (2021) design	Current (2022) design
		<ul style="list-style-type: none"> • D: Single carriageway with cable trench – 17m • E: Single carriageway with double cable trench – 24m • F: Single carriageway light traffic (4x4) – 4m. <p>Different track categories have been developed to account for geotechnical requirements.</p>
Overhead cabling	Around 52km of overhead 33kV cabling (linking turbine clusters to site sub-station)	<p>Around 25km of overhead 33kV cabling (linking turbine clusters to site sub-station). This represents a reduction in overhead cabling and potential reduction in impacts.</p> <p>It is normal practice to link turbines to the site sub-station using underground 33kV loops. However, due to the substantial footprint of the Project featuring dispersed turbine strings, difficult terrain with frequent creek crossings and the potential for rock excavation to excavate trenches, overhead connections will be used over some 25km specifically along the Craiglunds Loop main access, Back Creek and south of Lot 4 back to the site substation. Here the power will be transformed to 275kV for onward connection to the switching station for connection to the network grid system running to the west of the Project site.</p>

The reasons for the proposed variation

Since the EPBC referral was lodged in 2021, the Project has undergone further detailed ecological surveys of the Development Footprint and design development. The Project design now has a greater level of detail and has been refined following technical specialist impact assessments and technical design optimisation. Where possible, proposed infrastructure has been moved to avoid environmental values identified in environmental assessments.

The Development Footprint is based on the EPBC referral impact area, increased in size where necessary, to provide construction flexibility and amended to nest within the Project Area. The increased area provides for inclusion of adequate buffers into the Project design to accommodate geotechnical constraints including batters and slopes to ensure adequate access is provided in difficult terrain for the delivery and construction of turbine infrastructure. We are requesting the variation to reflect an increased Development Footprint from 895.5ha to 1,023.19ha.

The Development Footprint is a rationalised area, based on civil modelling, within which Project infrastructure (and direct impacts) will be located. The Project Area is a corridor surrounding the Development Footprint, within which all development (and impacts) will occur, and which provides for the reasonable movement of the Development Footprint (or parts of the Development Footprint) within a defined area to enable avoidance, minimisation or other mitigation of impacts.

How the impacts of the proposed variation on matters of national environmental significance compare with those of the original proposal

The original referral was lodged for a likely significant impact to Koala (*Phascolarctos cinereus*). Following assessment of the Project referral, the delegate for the Minister for the Environment determined that the Project is likely to have a significant impact on the following listed species:

- *Cycas megacarpa*
- Koala (*Phascolarctos cinereus*)
- Greater Glider (*Petauroides volans*)
- Squatter Pigeon (Southern) (*Geophaps scripta scripta*)
- White-throated Needletail (*Hirundapus caudacutus*).

Additionally, the Department considers that there is potential for the proposed action to have a significant impact on:

- Cossinia (*Cossinia australiana*)
- Northern Quoll (*Dasyurus hallucatus*)
- Collared Delma (*Delma torquata*)
- Quassia (*Samadera bidwillii*)
- *Bertya opponens*
- *Polianthion minutiflorum*.

The Department considers the proposed action has the potential to have a significant impact on the following listed threatened and migratory bird and bat species as a result of individual mortality from turbine collision and barotrauma, and potential changes to species utilisation of the project site:

- Semon's Leaf-nosed Bat (*Hipposideros semoni*)
- Red Goshawk (*Erythrotriorchis radiatus*)

- Fork-tailed Swift (*Apus pacificus*)
- Spectacled Monarch (*Symposiachrus trivirgatus*)
- Rufous Fantail (*Rhipidura rufifrons*)
- Oriental Cuckoo (*Cuculus optatus*)
- Black-faced Monarch (*Monarcha melanopsis*)
- Latham's Snipe (*Gallinago hardwickii*)
- Satin Flycatcher (*Myiagra cyanoleuca*).

Detailed assessment of the proposed project's impacts and their significance on these values is being undertaken as part of the Preliminary Documentation. Table 2 provides a comparison between the impacts to matters of national environmental significance (MNES) habitat in the original referral and current proposed Development Footprint, based on refined impact calculations. Detailed ground-truthing surveys were undertaken within the Development Footprint in August 2022 which have informed refined impact calculations set out in Column 2, Table 2.

- Column 1 – Impacts to MNES habitat in the original referral and impact as a percentage of the referral development footprint.
- Column 2 – Impacts to MNES habitat in the proposed Development Footprint using habitat layers based on refined ground-truthed data and impact as a percentage of the proposed development footprint.
- Column 3 – Comparison of impacts between the MNES habitat in original referral and current Development Footprint using the difference between Column 3 and Column 2.

Table 2 Comparison of predicted impacts to MNES between the referred and current project design

MNES	Column 1	Column 2	Column 3
	Impacts to MNES habitat in referral (referral development footprint) <i>Development Footprint Area = 895.5ha</i>	Impacts to refined MNES habitat in proposed Development Footprint <i>Development Footprint Area = 1,023.19ha</i>	Comparison of impact areas (ha) to MNES habitat between referral and proposed Development Footprint
Koala (<i>Phascolarctos cinereus</i>)	Likely 191.7ha	Refuge 199.84ha	16.12ha increase
	Potential 308.9ha	General 316.87ha	
	Total habitat 500.6ha (55.9%)	Total habitat 516.72ha (50.5%)	
Greater Glider (<i>Petauroides volans</i>)	Likely 108.7ha	Denning 94.3ha	79.2ha reduction
	Potential 287.8ha	Foraging 223ha	
	Total habitat	Total habitat	

MNES	Column 1	Column 2	Column 3
	Impacts to MNES habitat in referral (referral development footprint) <i>Development Footprint Area = 895.5ha</i>	Impacts to refined MNES habitat in proposed Development Footprint <i>Development Footprint Area = 1,023.19ha</i>	Comparison of impact areas (ha) to MNES habitat between referral and proposed Development Footprint
	396.5ha (44%)	317.3ha (31%)	
Squatter Pigeon (southern) (<i>Geophaps scripta scripta</i>)	Breeding 158.9ha	Breeding 290.02ha	296.95ha reduction
	Foraging and dispersal 660.5ha	Foraging and dispersal 232.31ha	
	Total habitat 819.4ha (91.5%)	Total habitat 522.45ha (51%)	
Australian Painted Snipe (<i>Rostratula australis</i>)	Known 0ha	Known 0ha	No impact difference
Collared Delma (<i>Delma torquata</i>)	Likely 72.9ha	Likely 7.95ha	4.31ha increase
	Potential 330.5ha	Potential 399.76ha	
	Total habitat 403.4ha (45%)	Total habitat 407.71ha (39.8%)	
<i>Cycas megacarpa</i>	Likely 289.8ha	Likely 512.55ha	126.96ha increase
	Potential 102.8ha	Potential 7.56ha	
	Total habitat 392.6ha (38.3%)	Total habitat 519.56ha (50.7%)	
Northern Quoll	-	TBC	TBC
Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant) Threatened Ecological Community (TEC)	0ha	0.34ha	0.34ha increase

If applicable, the impacts of the proposed variation on matters of national environmental significance not considered in the referral or assessment of the original proposal

DCCEEW's request for information required for assessment by preliminary documentation for Callide Wind Farm includes likely or potential impacts on listed species that were not considered to have significant impacts in the original proposal (see above). These species are being assessed by preliminary documentation.

Following the referral of the proposed action, Northern Quoll has been recorded in one instance within the Project Area. Mapping of this species habitat and assessment of the potential impacts is currently being undertaken and will be presented in the preliminary documentation.

The ecology of the Project Area is well understood with a detailed survey undertaken in this area in 2022. New areas within the Development Footprint do not contain new MNES which are not found in the previous, referred Development Footprint.

If applicable, alternatives, mitigation measures and offsets to compensate for additional impacts on matters of national environmental significance

The proposed development footprint will have a relative increase (as a percentage of the total footprint area) in impact to *Cycas megacarpa* and *Brigalow*. All other species have relative reductions in the area of impact in relation to the overall area of the Development Footprint.

The proposed Development Footprint would also increase actual impacts to habitat (increase in the habitat area to be cleared) for the following MNES:

- Koala
- Collared Delma
- *Cycas megacarpa*
- Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC

The Development Footprint will be micro-sited within the Project Area where possible to avoid impacts to MNES habitat.

Mitigation measures will minimise impacts on MNES habitat. Mitigation measures will be detailed in preliminary documentation, and include:

- Minimise clearing in *Cycas megacarpa* habitat where possible, particularly in areas of high density. If *C. megacarpa* are unable to be avoided, translocation methods and post-translocation monitoring of *C. megacarpa* will be outlined in a detailed Cycad Translocation Plan
- Avoid Greater Glider den trees (if any, and where possible). Where impacts to den trees cannot be avoided, nest boxes (preferentially translocated natural hollows) will be installed prior to clearing, in an area of adjacent habitat which will be retained.
- The Project will maintain a maximum clearing width for linear infrastructure of 30m, which is within achievable glide distance for Greater Gliders wherever possible. In instances where the clearing width exceeds 30m for an interval greater than 100m, crossing infrastructure (glider poles and/or rope bridges) will be installed at a suitable location within a home range (4 ha area). Crossing infrastructure would be spaced at a minimum distance of 225m apart to ensure there is one crossing structure in every 4ha home range where clearing widths exceed 30m. Crossing infrastructure would be situated in an area where suitable vegetation

exceeds 20m in height. Detailed project design will assess the most appropriate locations to install crossing infrastructure, including proximity to suitable glide trees.

- The area of Brigalow TEC, which occurs within the area containing Overhead Transmission line, will be avoided.

Offsets will be provided for significant impacts to MNES under the EPBC Environmental Offsets Policy in order to compensate for the loss of likely habitat. The offset site(s) will, at a minimum, match the quality of the habitat impacted by the proposed variation, and be managed and resourced over a defined period of time so that its habitat quality is maintained and is improved to meet the habitat quality requirements for the offset site.

Summary

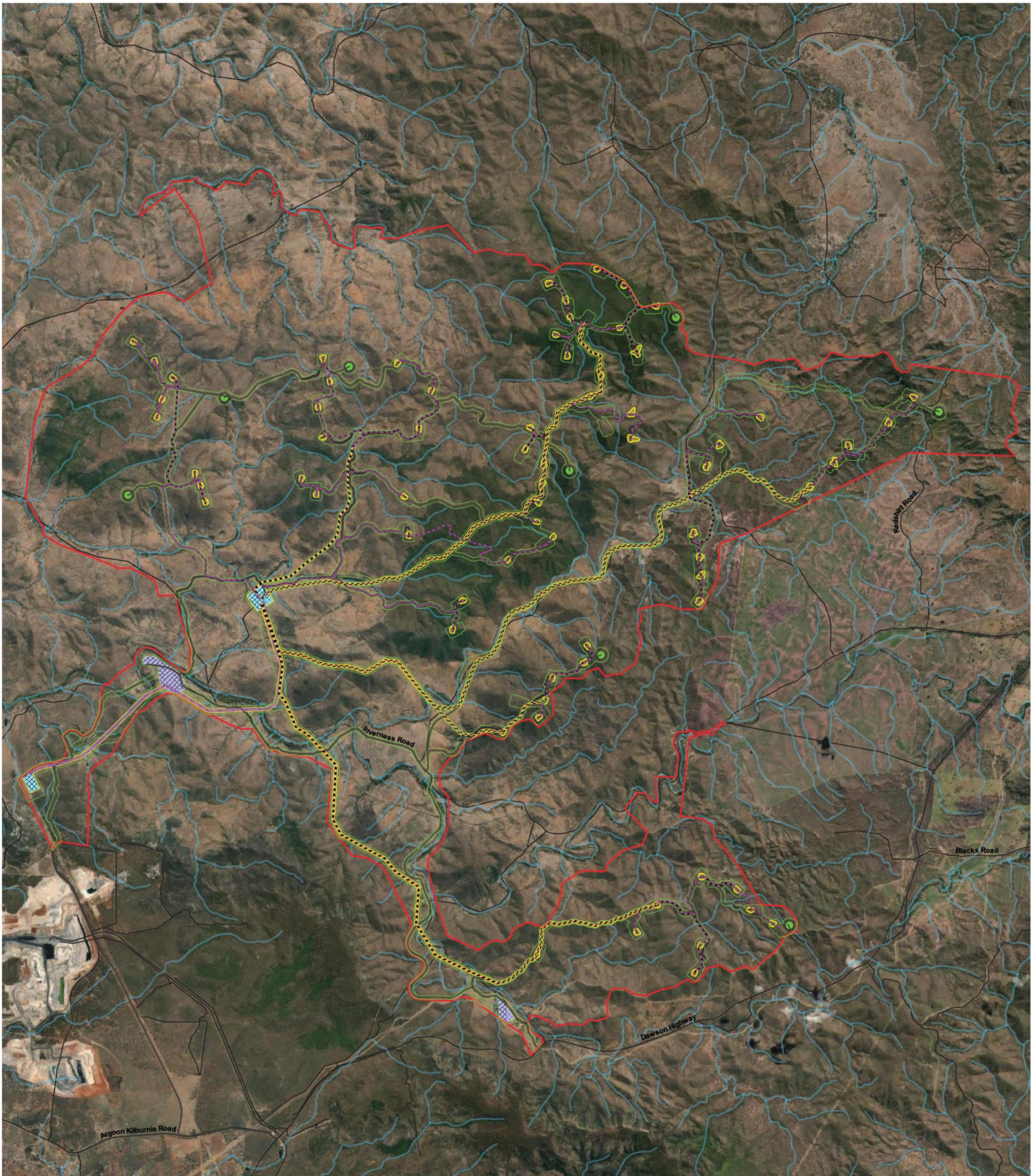
The proposed variation is for an increase to the Development Footprint from 895.5ha to 1023.19ha. There is no proposed change to the project description, no increase in the number of wind turbines, a reduction in tracks from 168km to 124km and a reduction in overhead cabling from 52km to 25km.

The reason for this increase is to allow for micro-siting and to respond to site conditions, including the presence of ecological values such as *C. megacarpa* and hollow-bearing trees which may provide denning habitat for Greater Glider. The Development Footprint will be micro-sited within the Project Area where possible to avoid impacts to MNES habitat. If you have any questions, please contact me, [REDACTED] on the below, or alternatively [REDACTED] (General Manager Biodiversity) on [REDACTED]. We would be pleased to discuss any aspect of the variation with you further.

Yours sincerely,



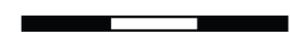
[REDACTED]
Senior Ecologist
[REDACTED]



Attachment A - Referred project design (2021)

- Legend**
- Project Site
 - Project Area
 - Development Footprint
 - Wind Farm Features**
 - Export line
 - Over-head cables
 - Met masts
 - Pinch points
 - Substation and switching station
 - TCC
 - Laydown areas
 - Underground cables
 - Tracks
 - Waterways
 - Roads

0 1 2 3 km

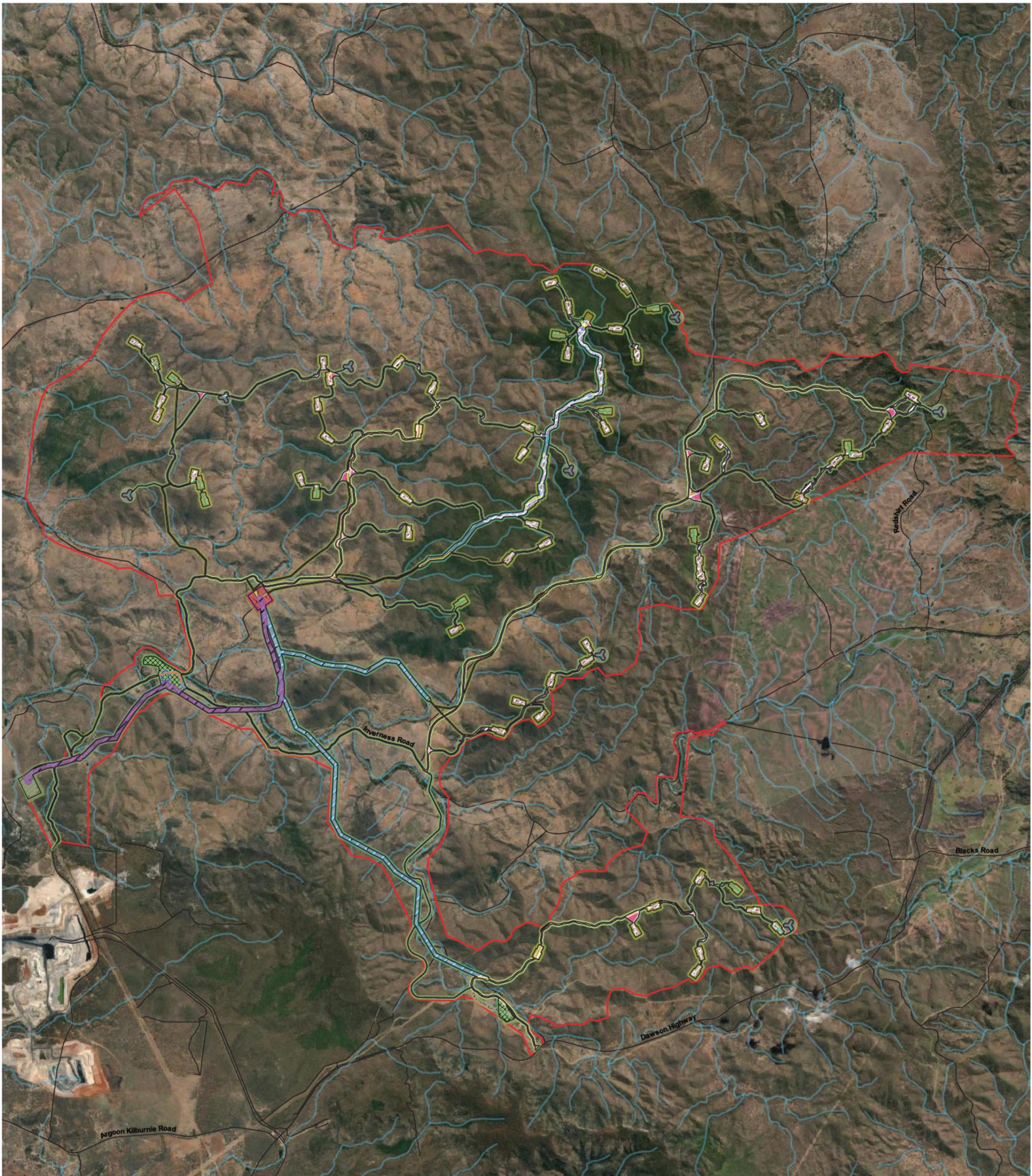


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 Author: taylor.h
 Date created: 21.11.2022
 Datum: GDA94 / MGA zone 56



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Attachment B - Revised project design (2022)

- Project Site
- Project Area
- Development Footprint

Wind Farm Features

- | | | | |
|---|--|---|---|
| Cat A road | Cat E batters | Laydown area | Substation corridor |
| Cat A batters | Cat F road | Laydown corridor | Switching station |
| Cat B road | Road corridor | Met masts | Switching station corridor |
| Cat B batters | Be Mouth areas | Met mast corridor | Temporary construction on compound |
| Cat D road | Swept paths | Overhead reticulation | Temporary construction on compound corridor |
| Cat D batters | Exporter corridor | Overhead reticulation corridor | Underground reticulation |
| Cat E road | Exporter | Substation | Underground reticulation corridor |

0 1 2 3 km

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