

Barneys Reef Wind Farm and Tallawang Solar Farm



September 2021
Community Information Session



Introductions



- Acknowledgement of Country and Introductions
- RES Overview
- Project Location and Design Ethos
- Planning and Development Process
- Social Impact Assessment Process
- Tallawang Solar Farm Project Parameters and Layout
- Tallawang Solar Farm Environmental Studies - Preliminary Results and Mitigations
- Barneys Reef Wind Farm Project Parameters and Layout
- Barneys Reef Wind Farm Environmental Studies - Preliminary Results and Mitigations
- What We Have Heard So Far through Community Consultation
- Construction Planning
- Shared Benefit Scheme
- Future Project Updates and Opportunities for Feedback
- Q&A

21 GW

PROJECT
PORTFOLIO

39

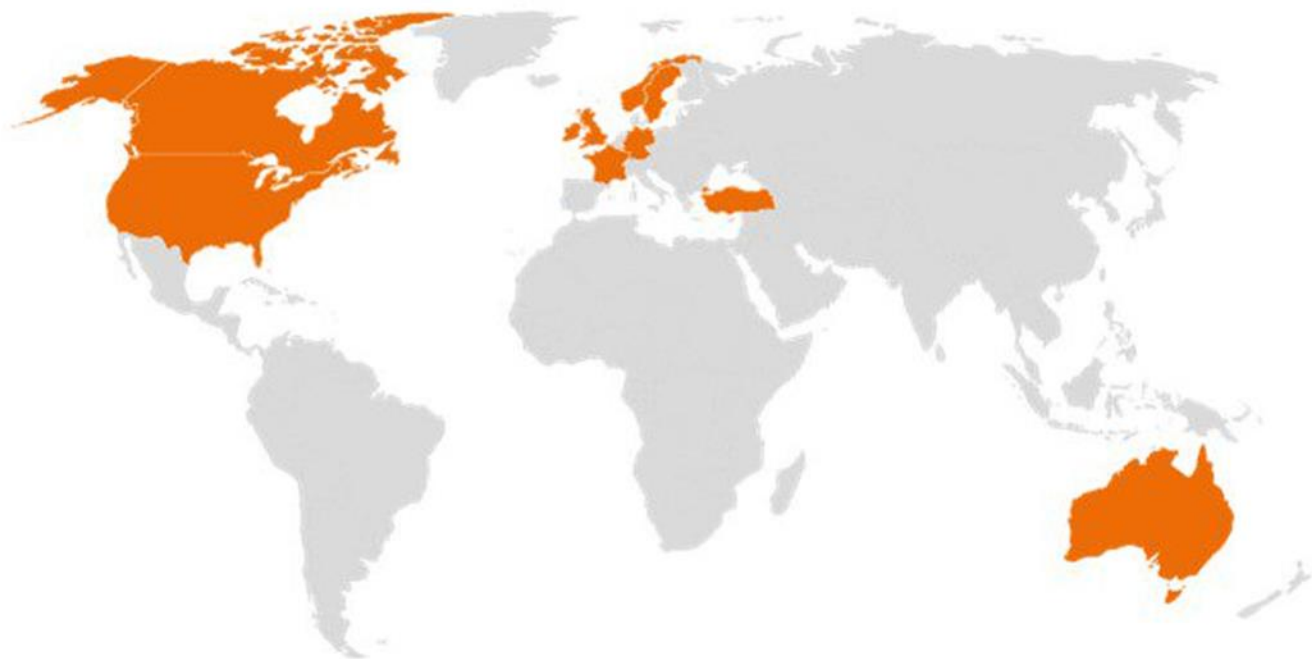
YEARS OF
EXPERIENCE

7 GW

OF OPERATIONAL
ASSETS SUPPORTED

3,000

EMPLOYEES



ACTIVITIES



DEVELOP



CONSTRUCT



OPERATE

TECHNOLOGIES



WIND



SOLAR



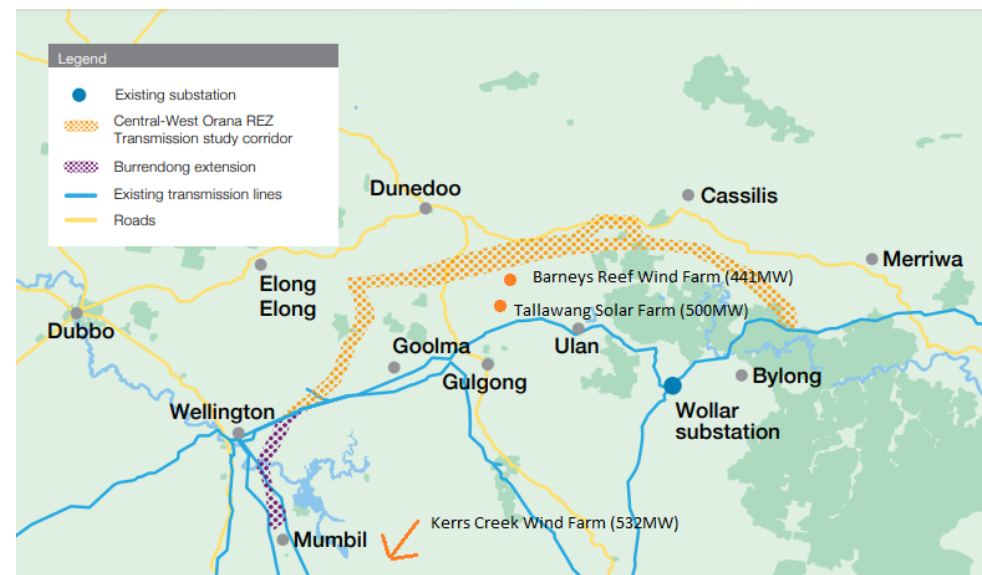
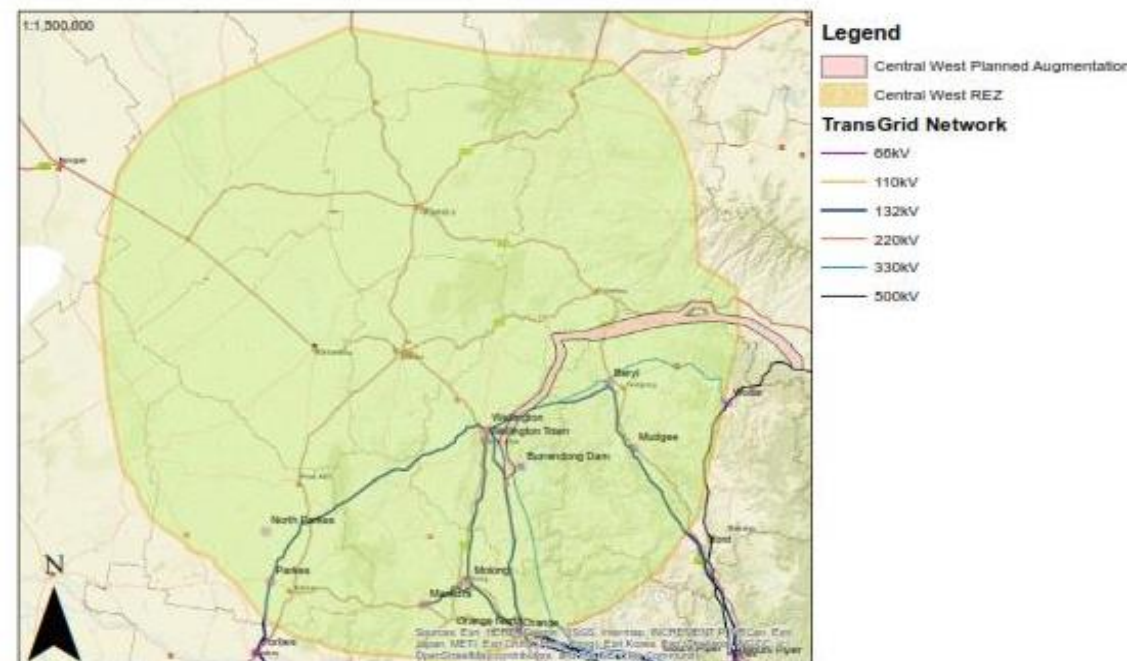
STORAGE



T&D

Why Here?

- ✓ Project located within the Central West Orana REZ - one of several zones in NSW identified for Renewable Energy investment and driven by Government to replace retiring thermal generators
- ✓ New 500KV grid infrastructure proposed connecting into the backbone between Liddell and Wollar
- ✓ Site selected due to good wind and solar resources and compatible land use zoning
- ✓ Good road access, with transport routes selected utilising main access routes
- ✓ Availability of land of a suitable scale for a viable commercial scale wind and solar farm project

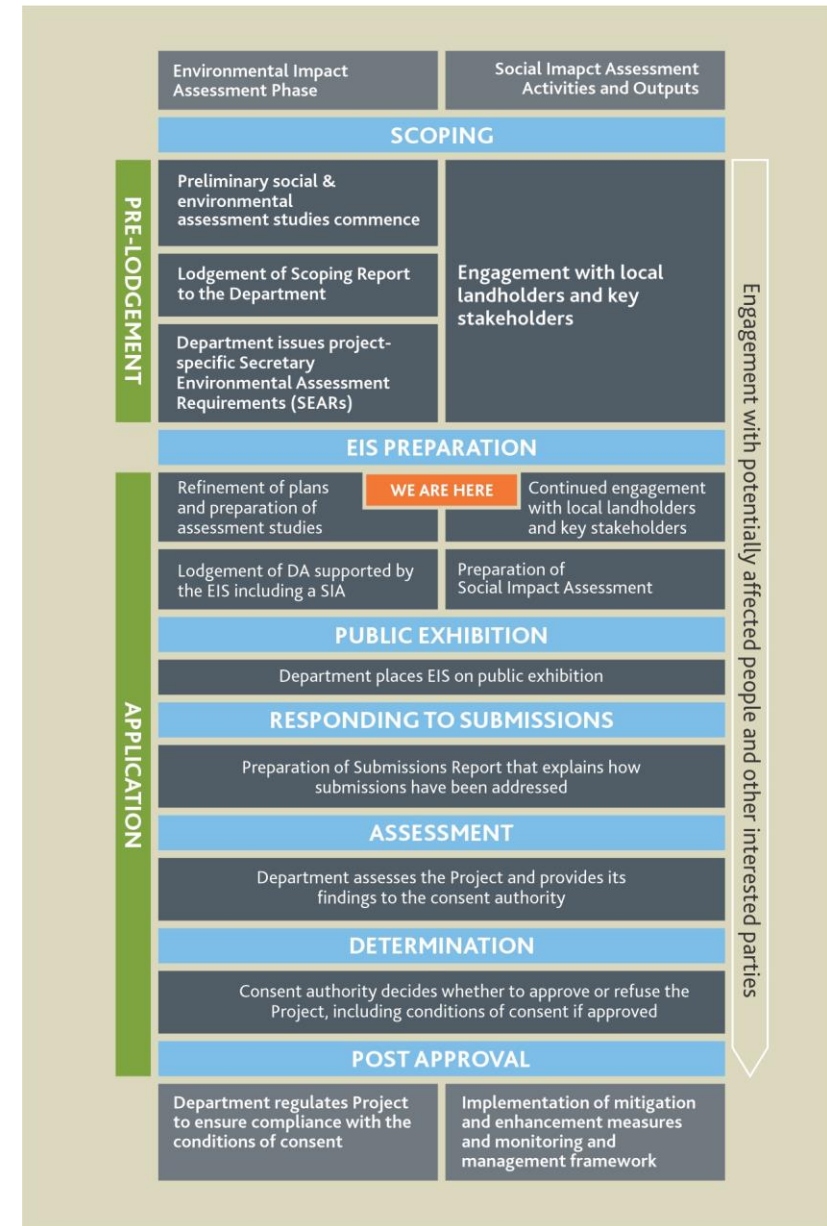


Planning and Development Process

Both the Tallawang Solar Farm and Barneys Reef Wind Farm will trigger the SSD planning process in NSW

Social and environmental assessment studies are underway, including:

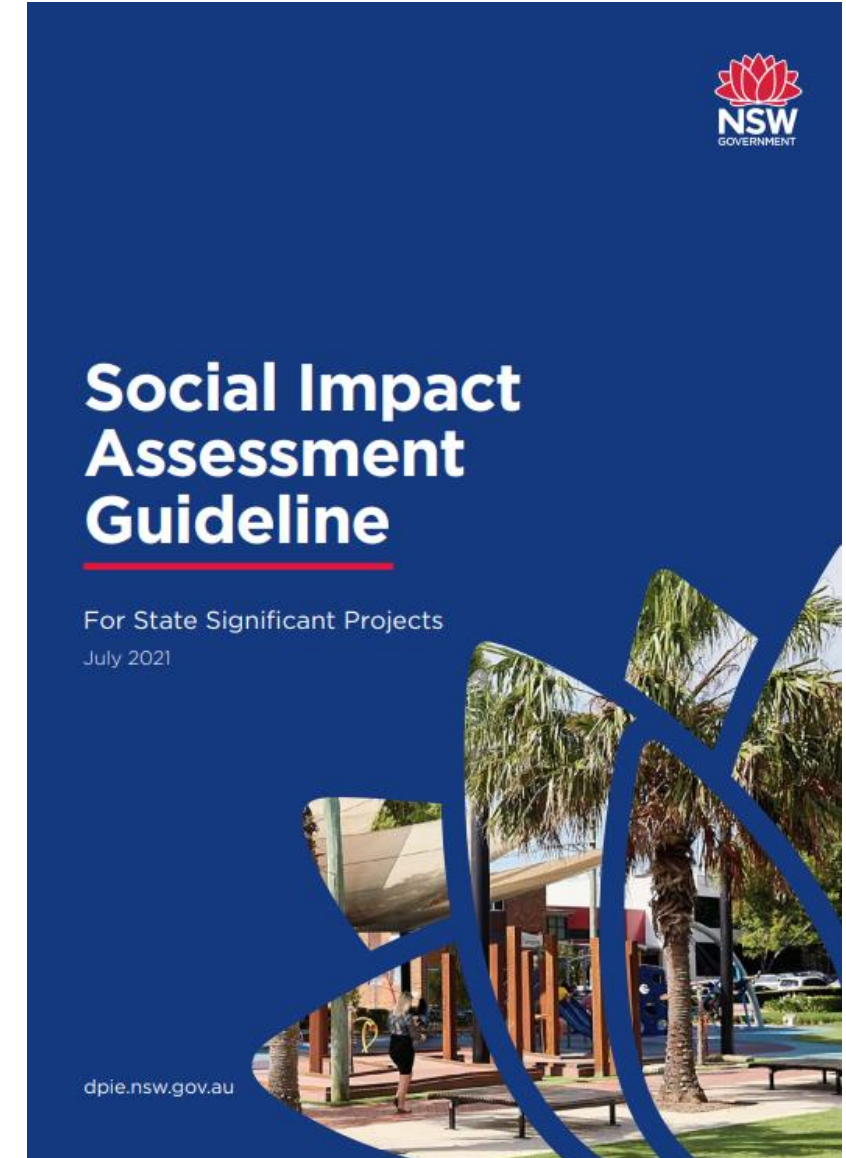
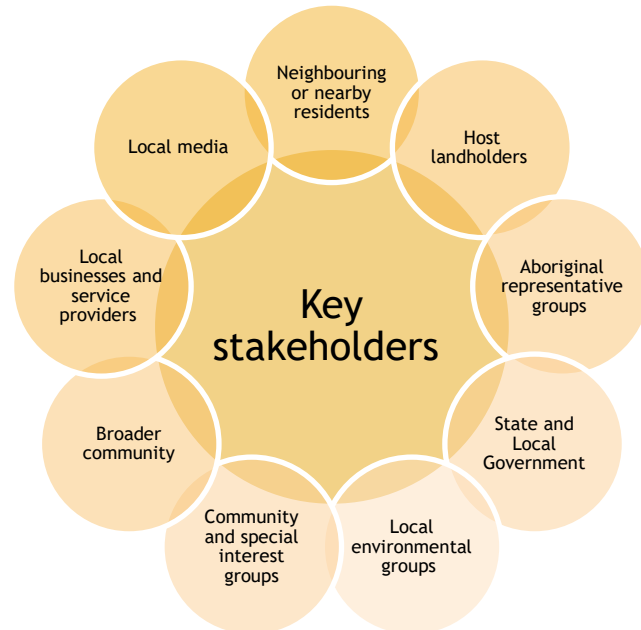
- Noise
- Visual
- Biodiversity
- Aboriginal cultural heritage, incl Historic heritage
- Water
- Traffic
- Social
- Economic
- Soils
- Land Use Conflict
- Hazard and Risk
- Cumulative effects



Social Impact Assessment Process

- DPIE has recently released a Social Impact Assessment Guideline (2021) that provides direction on assessing the potential community and social impacts of State Significant Development projects across NSW
- The SIA and community engagement program will be undertaken in parallel with the EIS process

WHO WE ARE ENGAGING WITH



Project Location

- The proposed Barneys Reef Wind Farm is located approximately 12km north of Gulgong;
- within Mid-Western Regional Council, in the locality of Barneys Reef.
- The proposed Tallawang Solar Farm which also includes battery storage is located 8 km northwest of Gulgong;
- in the locality of Tallawang, also in the Mid-Western Regional Council.

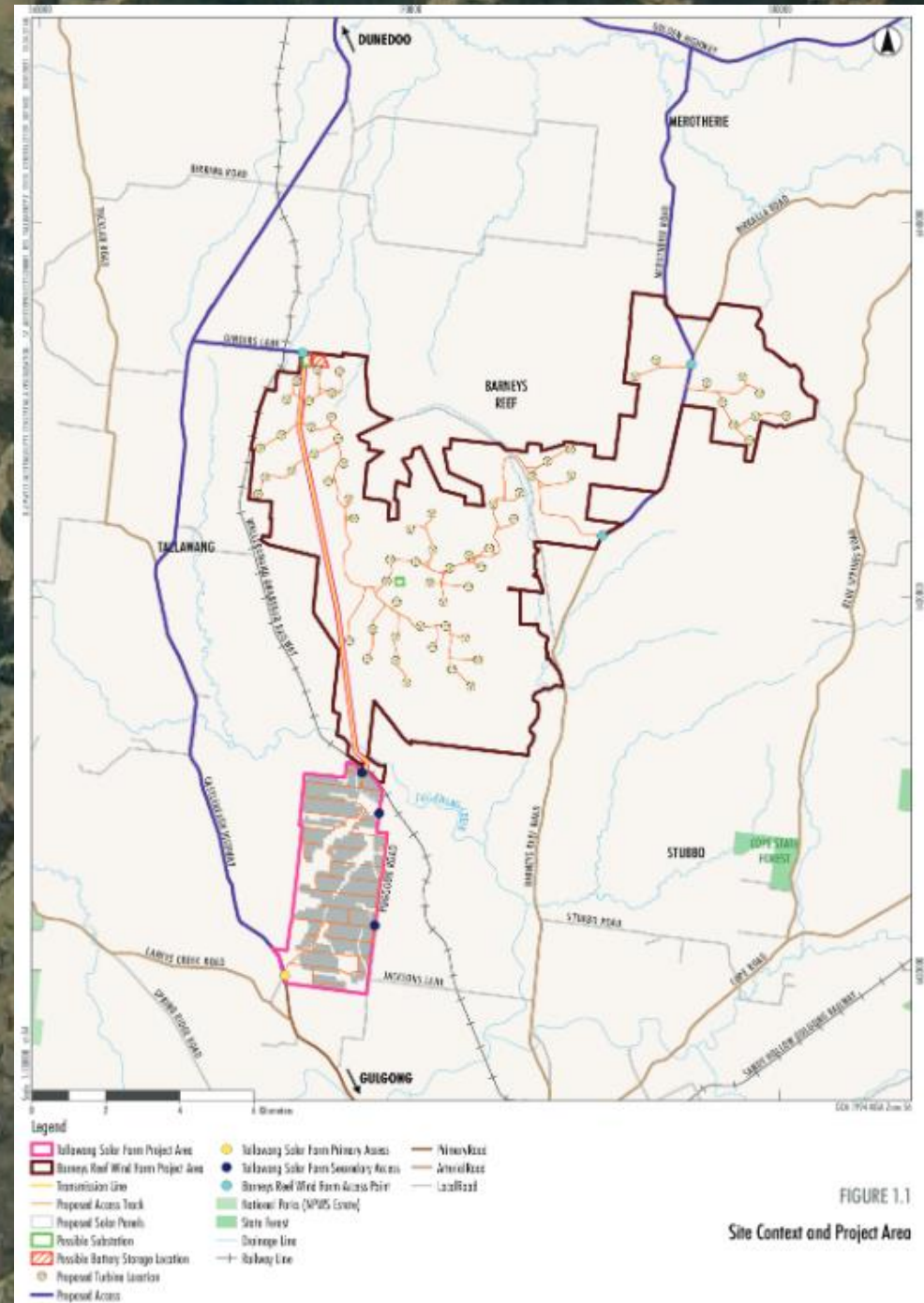


FIGURE 1.1

Site Context and Project Area

Project Summary

TALLAWANG SOLAR FARM

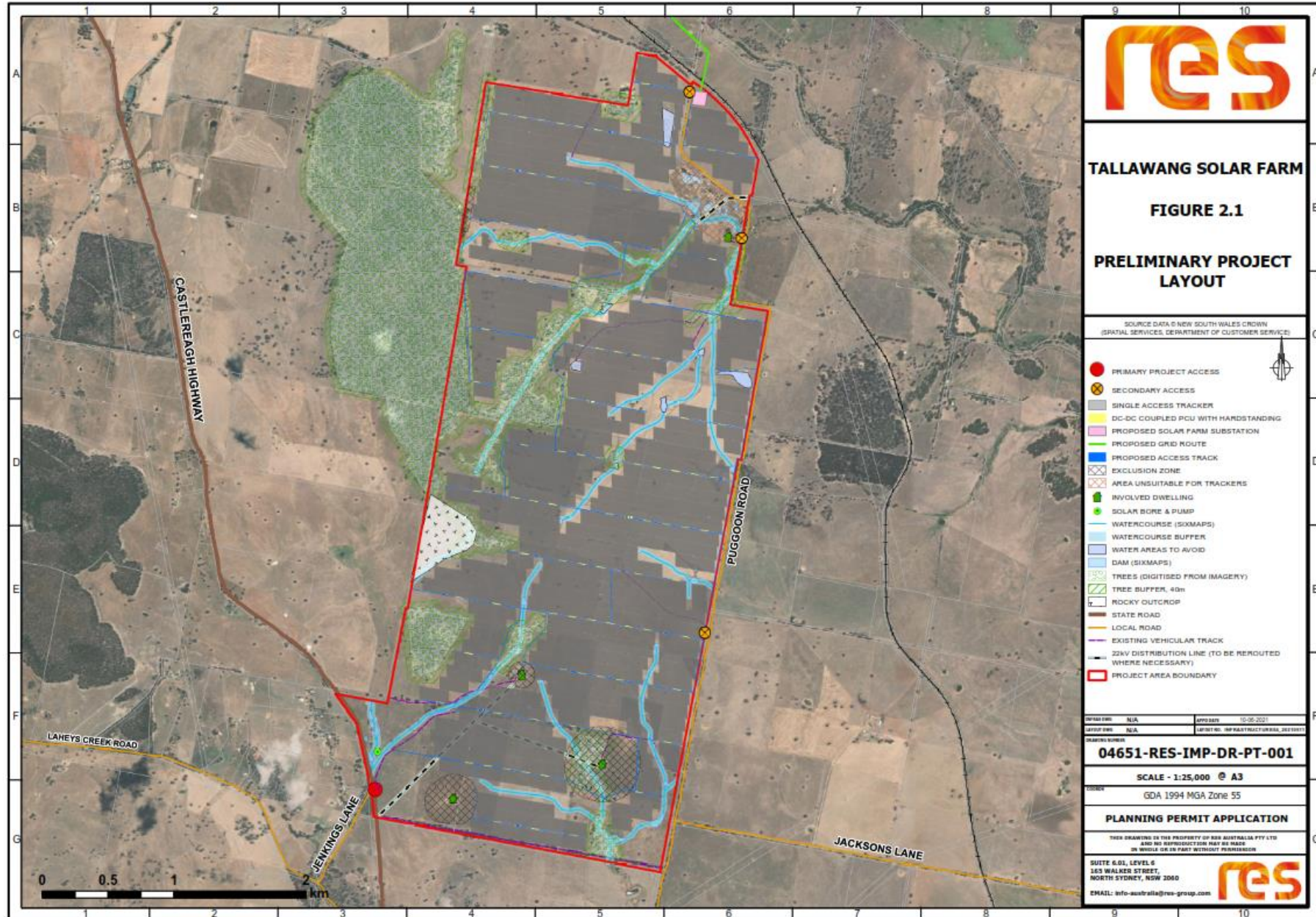
Solar Capacity	500MW
Battery Storage	500MW/1000 MWh
Scoping Report Submission	Q2 2021
Development Application and Environmental Impact Statement	Q4 2021
Forecast Construction Date	June 2023
Site Area	1,370 ha
Development Footprint Area	1,119 ha

LAYOUT

- ✓ The solar Farm Project Area has been designed to:
- ✓ Exclude farm dams, creeks and drainage lines, Registered Aboriginal sites and heritage sites, large patches of remnant vegetation and exclude native vegetation where possible.
- ✓ Includes ecological buffers from important habitat
- ✓ Buffers from involved dwellings
- ✓ A 500m buffer from Castlereagh Hwy which aims to minimise visual impact from local viewpoints
- ✓ Site access was moved from Puggoon Road to Castlereagh Hwy to improve traffic flow on local roads

PROJECT PROGRESS

- ✓ Ecological surveys completed, BDAR underway
- ✓ Landscape and Visual assessment underway
- ✓ Other specialist assessments underway
- ✓ Social Impact Assessment underway
- ✓ Community consultation underway
- ✓ Connection into the proposed 330kV network in the CW Orana
- ✓ Battery Storage included in Scoping Report
- ✓ Scoping Report lodged mid July 2021, awaiting SEARs
- ✓ EIS is being prepared
- ✓ Target lodgement date is end of 2021.



Tallawang Solar Farm - Other Specialist Assessments

The final solar farm layout submitted will be based on several detailed technical engineering and environmental studies, which will form part of the planning application, these include:

- Visual Impact Assessment
- Noise Assessment
- Biodiversity Assessment

- Aboriginal cultural heritage incl consultation with the Aboriginal community - underway, surveys expected to take place late Sept - early Oct 2021.
- Historic heritage - underway, surveys to be undertaken in conjunction with archaeological surveys.
- Economic impact assessment.
- Hazard and Risk assessment, incl Bushfire Threat - underway.
- Soils assessment incl soils sampling - underway.
- Land Use - underway.
- Water Resources incl hydrology, flooding, water quality - underway.
- Waste Management.
- Air quality and Greenhouse Gas - desktop reviews underway.
- Cumulative Impacts.

RES has yet to finalise the solar farm design. We have a current layout. The design will evolve as RES undertake surveys, detailed assessments and receives feedback from the NSW Government, statutory consultees and the community.

Approach

Undertake a landscape character and visual impact assessment which involves:

- illustrating the potential viewing area to the Project (Yellow area)
- assessing the impact to the landscape character; public viewpoints and private viewpoints; aerial viewpoint; cumulative impact and impact of glint, glare and lighting.

Preliminary Findings

- Approx 50 private viewpoints and 10 public viewpoints have a view of part of the Project.
- No viewpoint would view all the project elements.
- Most affected public viewpoint is Puggoon Road.
- Flirtation Hill and the Castlereagh Highway would have some views of the Project.
- Some private viewpoints along sections of Whistons Lane would see transmission towers and lines within 1 km.
- Private viewpoints within 2km would see the solar farm over the highest part of the site.
- These findings are subject to further layout refinements and detailed assessment.

Management and Mitigation Measures

Subject to further design and detailed assessment, the following measures could be considered:

- Targeted vegetation screening along Puggoon Road around proposed substation.
- Colour treatment (dark grey or other natural colours) of fixed structures to reduce visibility.

Tallawang Solar Farm - working visual analysis

Taken from 727 Castlereagh Hwy looking northeast towards the Project



Figure -5: Existing view from 727 Castlereagh Highway looking northeast toward the Project Area



Figure -6: Existing view with pink shading to indicate the approximate predicted extent of solar PV panels

Tallawang Solar Farm - Preliminary Noise Assessment

Approach

- Potential noise and vibration impacts primarily associated with construction activities
- A Noise and Vibration Impact Assessment (NVIA) is being undertaken

Preliminary Findings

Construction

- During construction in the day, noise levels are predicted to be above the management level of 45dB(A) in some areas.
- Construction activities will trigger reasonable and feasible noise mitigation strategies.

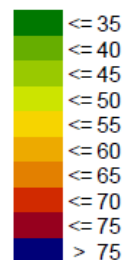
Operations

- Noise levels comply with the NSW Noise Policy standards during operation of the solar farm
- Operational noise levels are predicted below the noise limits at adjoining properties

Management and Mitigation Measures

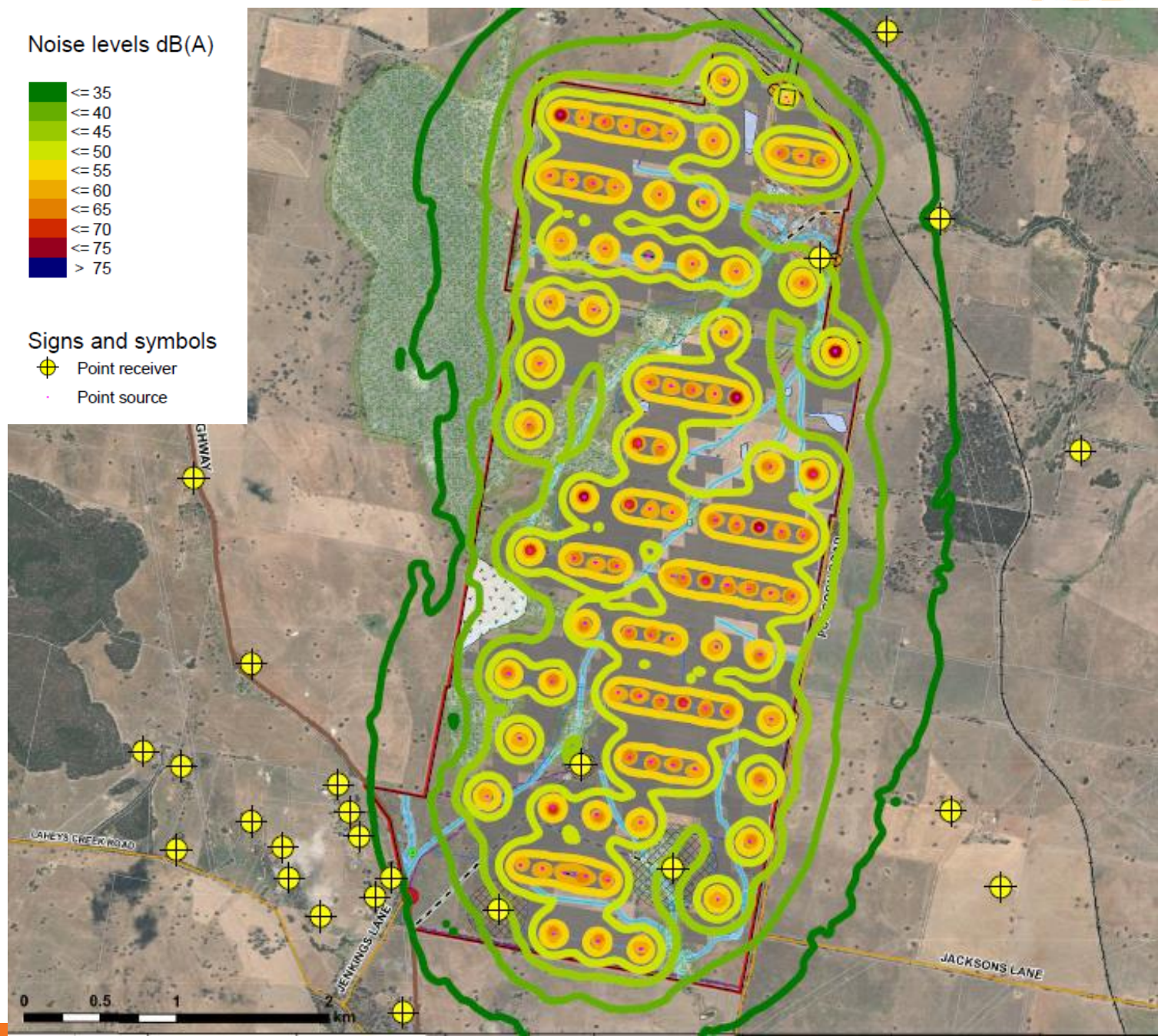
- Use quieter construction methods.
- Construction hours
- Notifying the community of the type of works the location, and duration of works, and the proposed mitigation measures.
- An effective and responsive complaints procedure. With proactive on-site management.

Noise levels dB(A)



Signs and symbols

- Point receiver
- Point source



Approach

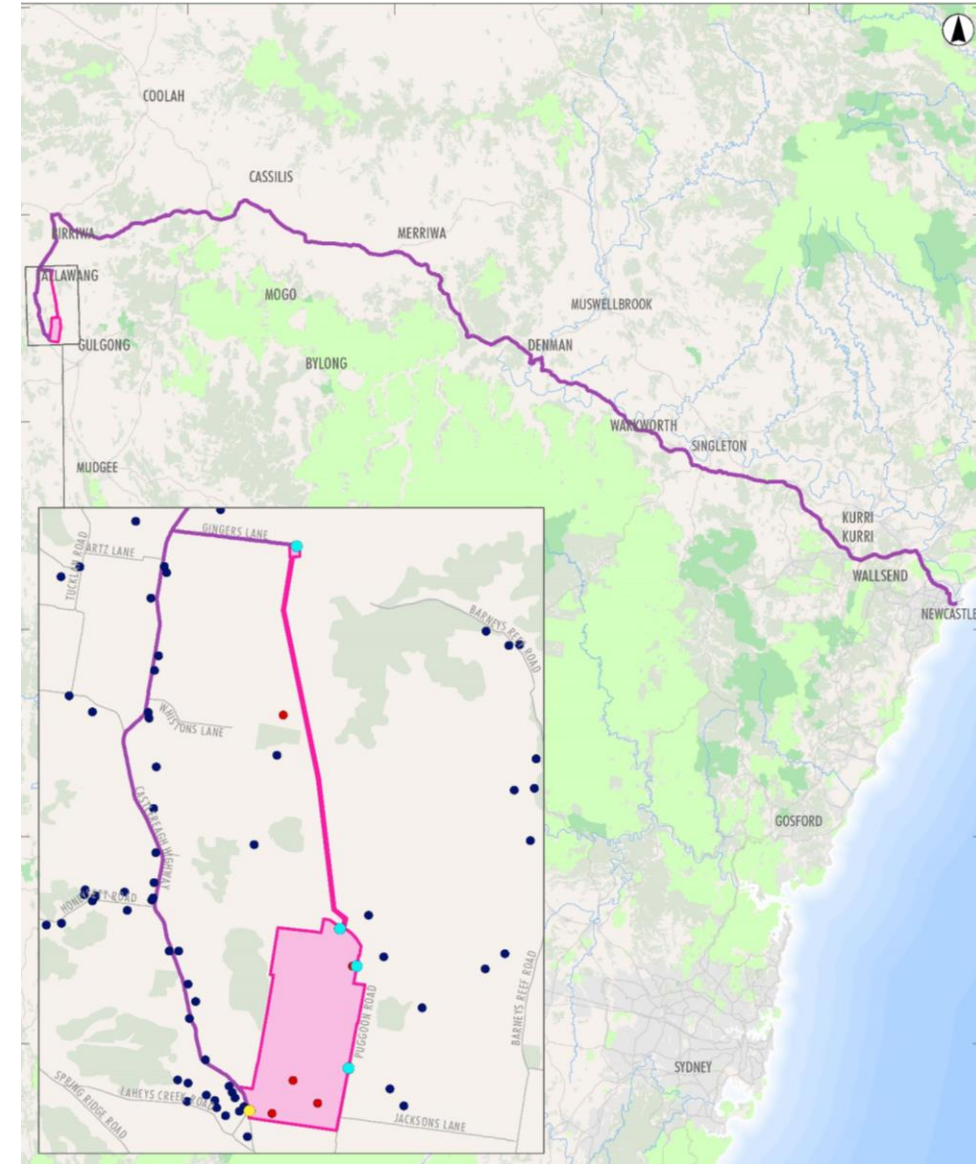
- We are currently undertaking a Traffic Impact Assessment as per NSW Government guidelines

Preliminary findings

- The equipment will be delivered in trucks from Newcastle, via the Golden Hwy and Castlereagh Hwy.
- Primary access to the solar farm is off Castlereagh Hwy, with alternate access off Gingers Lane.
- During construction (estimated at 34 months) the Project would generate:
 - A daily average of approximately 70 to 80 heavy vehicles and up to 130 trucks during peak times
 - Up to 300 light vehicles per day, although shuttle busses could be used to reduce light vehicles.
 - During operation we would anticipate approximately 10 vehicles per day.

Management and Mitigation Measures

- There is also potential upgrade works required along Puggoon Road and near the access point along Castlereagh Hwy.
- Which is all subject to further consultation with road authorities



Tallawang Solar Farm - Biodiversity Assessment

Approach

- Produce a Biodiversity Development Assessment Report (BDAR), the biodiversity legislation aims to achieve no net loss in biodiversity from development in NSW.
- RES will look to avoid, minimise and offset impacts upon native vegetation or threatened species.

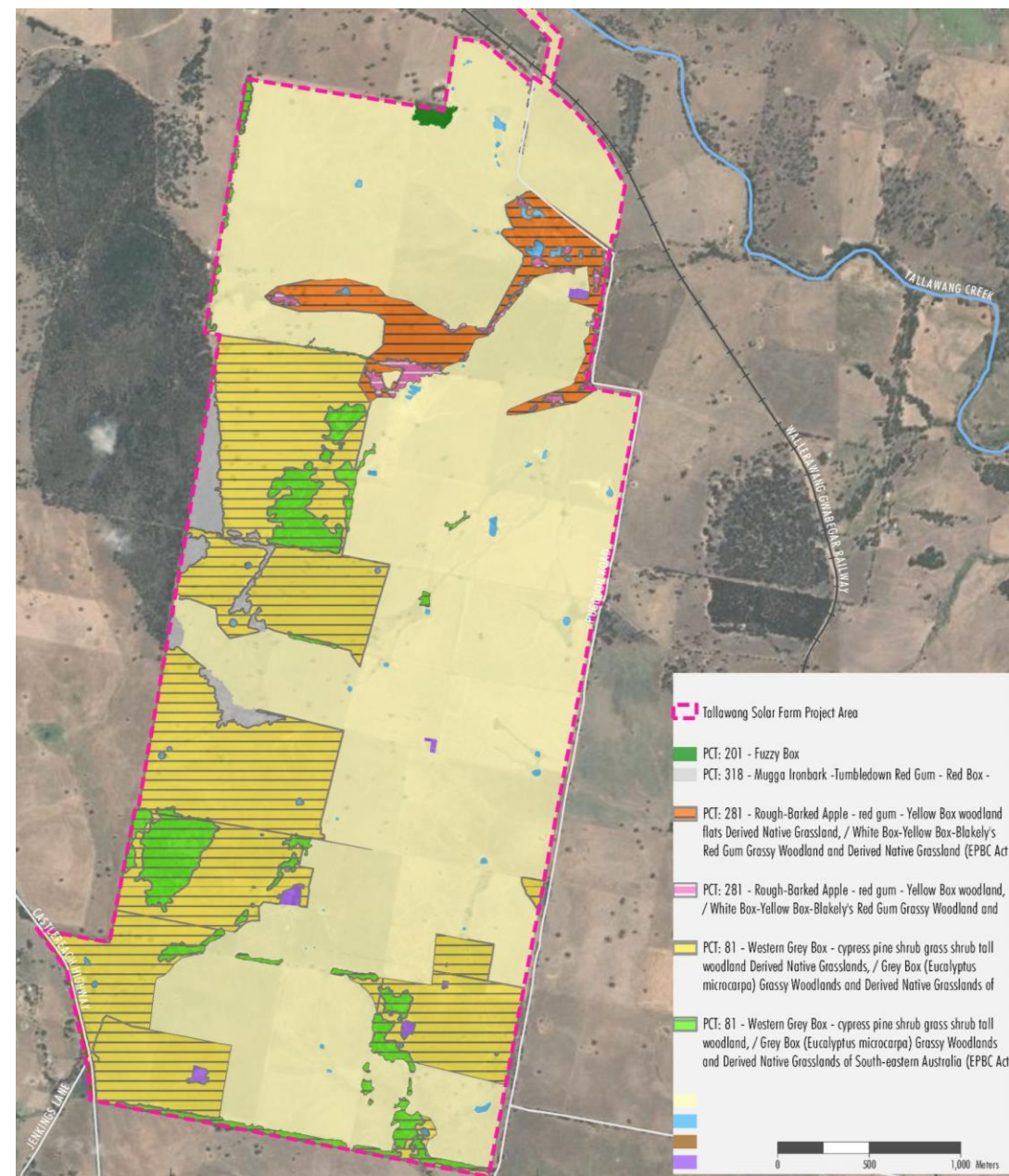
Preliminary Findings

- Approx. 70% Category 1 - Exempt Land with further 10% to be confirmed - approx. 890 ha exotic grassland
- Approx. 140 ha of Threatened Ecological Communities/threatened species habitat within the Project Area
- The ecological mapping is ongoing and will continue to be refined as we finalize the report.

Avoidance and mitigation measures

- Project design to date has involved avoiding ecological constraints where possible excluding areas with large patches of remnant vegetation, and buffers around dams, creeks and drainage lines

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Project Summary

BARNEYS REEF WIND FARM

Capacity	441MW (circa 63 turbines)
Battery Storage	441 MW (1,764MWh, 4 hr duration)
Scoping Report Submission	Q2 2021
DA and Environmental Impact Statement submission	Q4 2021
Indicative Construction	Q4 2023
Site	7,548 ha

LAYOUT

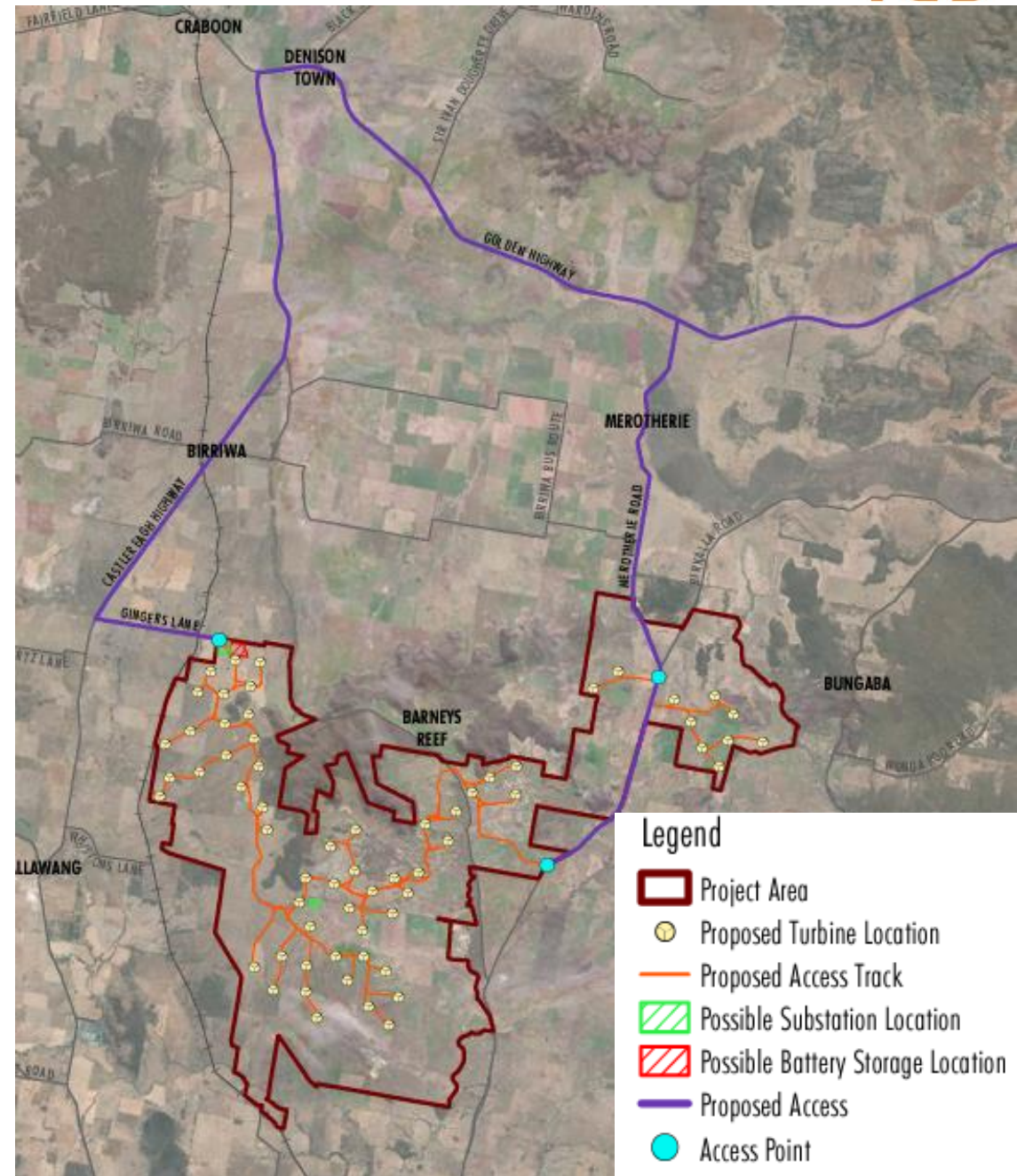
- ✓ Project Area excludes vegetation associated with Barneys Reef formation and avoids disturbance to Registered Aboriginal sites
- ✓ Internal access tracks designed to avoid vegetation removal where possible
- ✓ Appropriate access points to the Project Area located to restrict level of road works required

PROJECT PROGRESS

- ✓ Seasonal Ecological surveys progressing
- ✓ Preliminary Landscape and Visual and Noise Assessments Complete
- ✓ Scoping Report submitted SEARs expected this week
- ✓ Social Impact Assessment underway
- ✓ Community consultation underway
- ✓ Connection into proposed 330kV network in the CW Orana
- ✓ Preliminary grid modelling completed
- ✓ Six months of wind data collected
- ✓ Turbine layout optimisation underway to increase turbine utilisation rate and power output
- ✓ Detailed environmental assessment scope confirmed - due to commence end of September when turbine layout confirmed

Preliminary Findings

- Proposed access to Project Area from Merotherie Road (via Golden Highway) and/or Gingers Lane (via Castlereagh Highway)
- Upgrades to local roads and intersections will be required - subject to further detailed assessment and design
- Potential traffic impacts associated with the Project will be subject to detailed assessment
- Delivery of turbine components via Newcastle Port, New England Highway and Golden Highway - detailed route analysis will be undertaken to determine any works required along the delivery route and at access point to Project Area

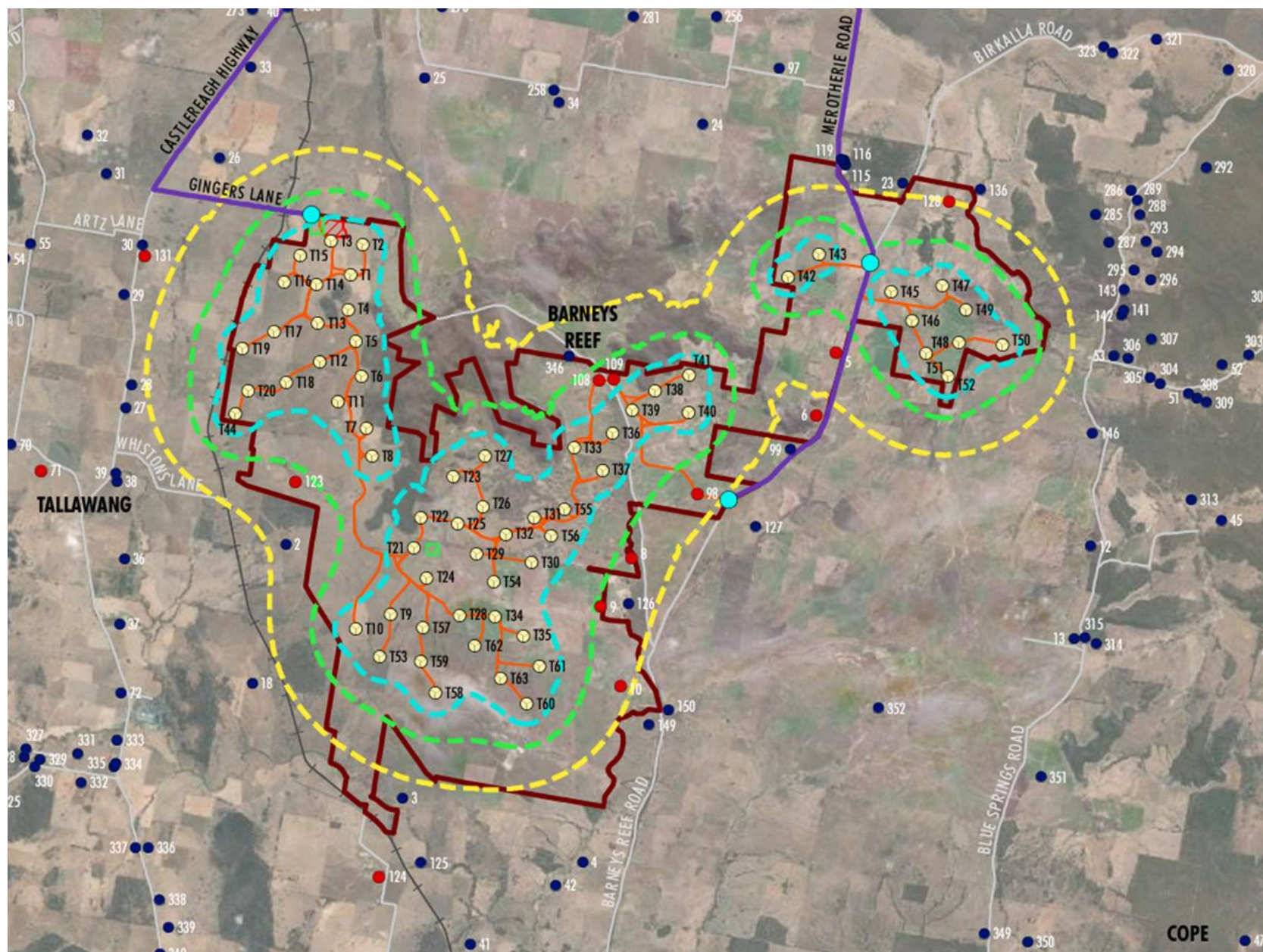


Preliminary Findings

- Preliminary noise modelling indicates baseline criterion of 35 dB(A) can be achieved at most non-involved dwellings without modification to the turbine layout or the development of a mitigation strategy for non-involved dwellings
- 6 week background noise monitoring program to be undertaken to inform detailed modelling - scheduled for Q3 2021
- Final layout currently under review and will seek to minimise noise

Legend

Project Area	Involved Landholder Dwelling
Proposed Turbine Location	Non-involved Landholder Dwelling
Proposed Access Track	Predicted Noise Level in dB(A)
Possible Substation Location	35 dB(A)
Possible Battery Storage Location	40 dB(A)
Proposed Access	45 dB(A)
Access Point	

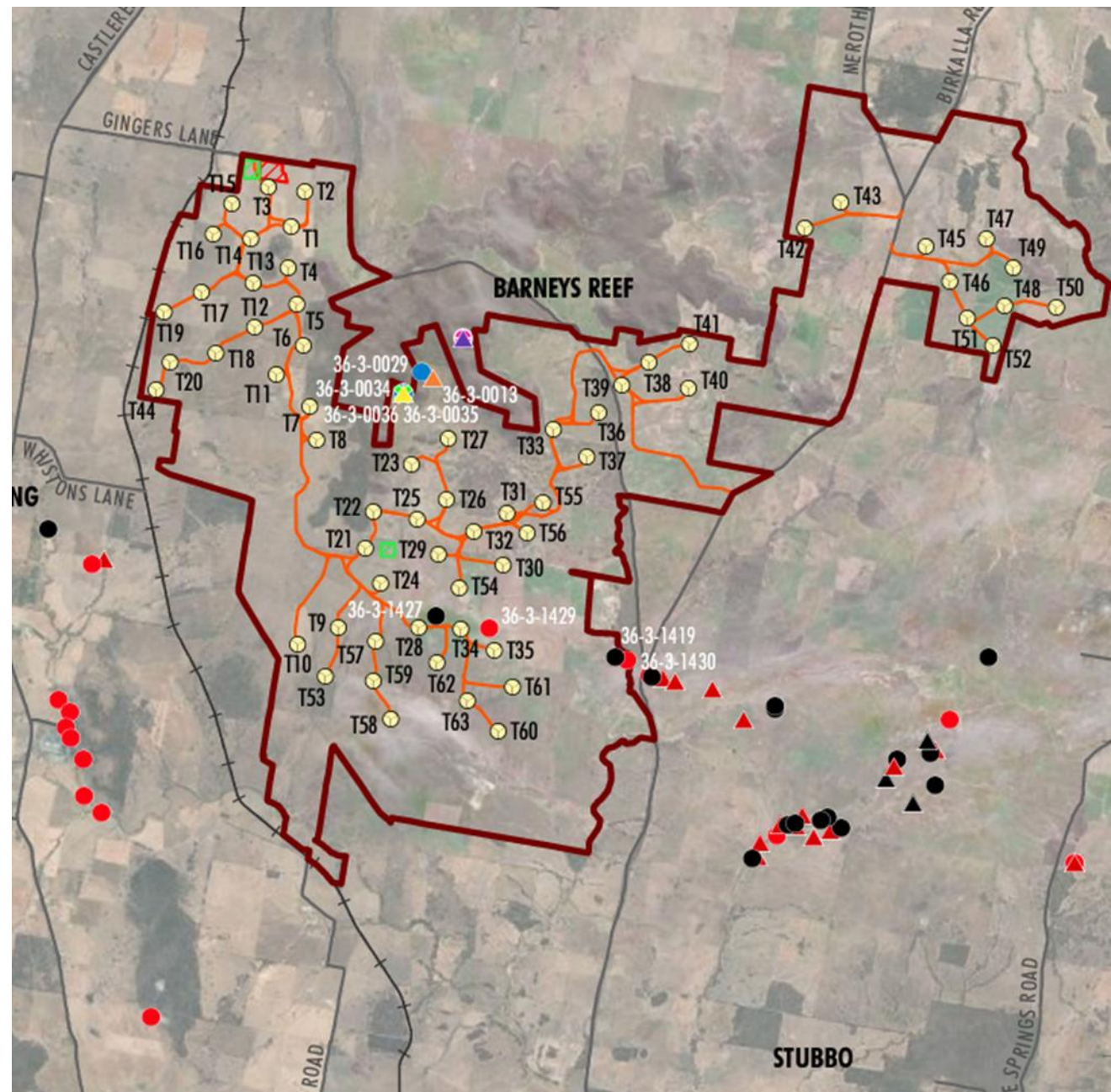


Preliminary Findings

- 12 registered sites within Project Area (burial site, rock shelters, axe grinding groove, stone arrangements, waterhole/well and artefact scatter)
- One active Native Title claim registered
- No Commonwealth or world listed heritage in close proximity to the Project Area
- No State Heritage listed items or local heritage sites within vicinity of Project Area
- Detailed Aboriginal Cultural Heritage Assessment to be undertaken in consultation with Registered Aboriginal Parties

Legend

Project Area	Aboriginal resource and gathering	Isolated artefact with PAD
Proposed Turbine Location	Artefact scatter	Modified tree with PAD
Proposed Access Track	Artefact scatter with PAD	PAD
Possible Substation Location	Axe Grinding Groove	Shelter with Deposit
Possible Battery Storage Location	Axe Grinding Groove, Water Hole/Well	Stone Arrangement
'Niven's Springridge Hotel', House	Burial/s	Water Hole/Well
'Spring Ridge', Homestead	Isolated artefact	
'The Lagoon', Homestead		
Birriwa Private Cemetery		

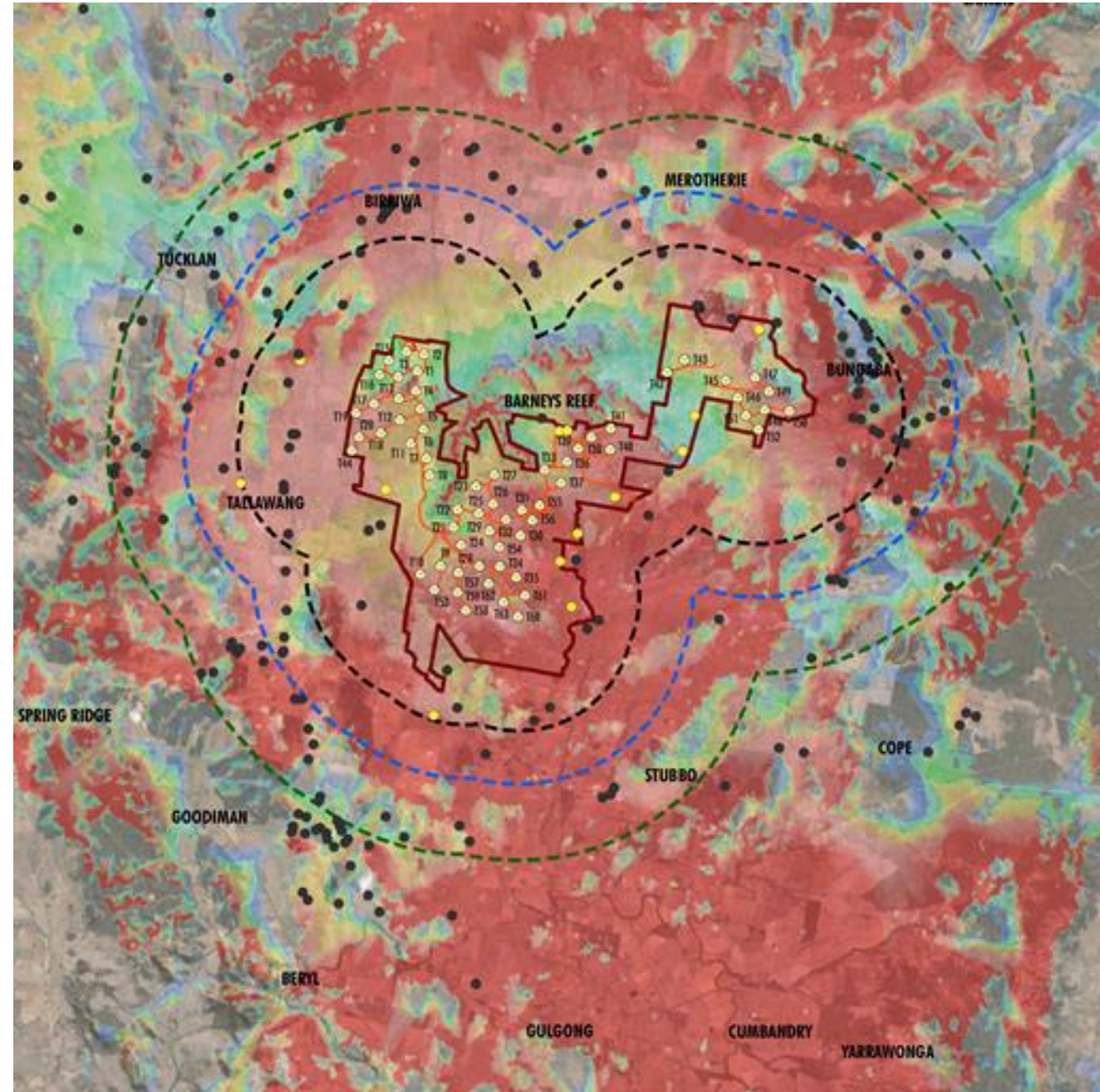


Preliminary Findings

- Zone of Visual Influence (ZVI) desktop assessment based on topography only
- ZVI indicates the project would theoretically be visible from a large percentage of land immediately surrounding the Project Area
- Town of Gulgong and surrounds will have the potential to view the Project in its entirety (vegetation and buildings expected to reduce the visibility)
- Views to the Project Area will be screened by topography from the town of Dunedoo

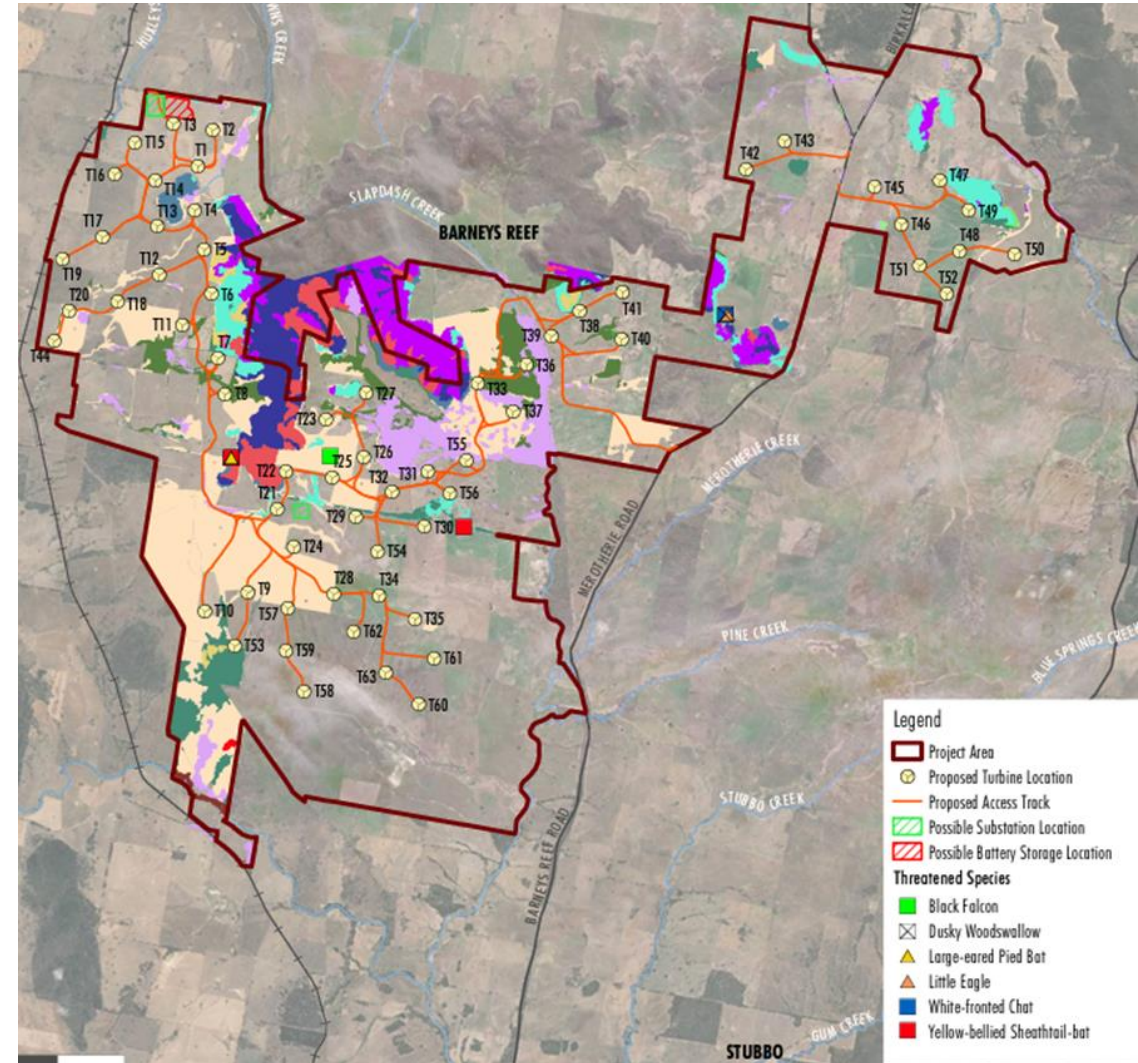
Legend

Project Area	Involved Landholder Dwelling
Proposed Turbine Location	Non-involved Landholder Dwelling
Proposed Access Track	1 - <10
Possible Substation Location	10 - <20
Possible Battery Storage Location	20 - <30
3750m Buffer	30 - <40
5500m Buffer	40 - <50
8000m Buffer	50 - <=63



Assessment So Far

- Seasonal field survey completed - Spring 2020, Summer 2020/21, Autumn 2021 and Winter 2021
- Further seasonal survey planned Spring and Summer 2021
- Survey has included targeted species, threatened flora, vegetation integrity plots and Bird and Bat Utilisation Surveys
- Approximately 460 ha of Threatened Ecological Communities within the Project Area with the balance being non-native
- Potential habitat for large-eared pied bat (threatened species) within Barneys Reef formation
- Further assessment and mapping to be undertaken as part of the preparation of the Biodiversity Development Assessment Report

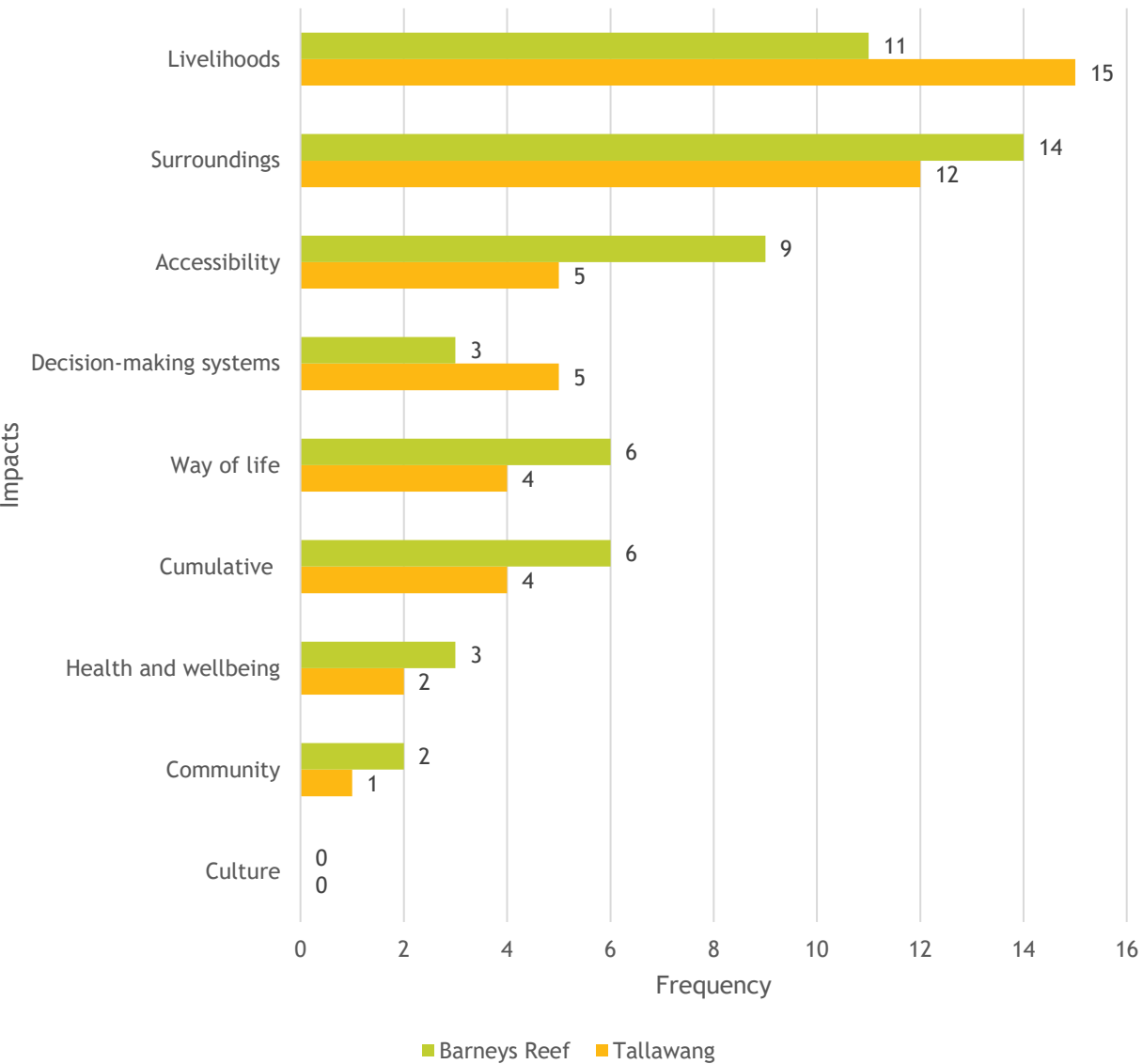


Barneys Reef Wind Farm - Specialist Assessments to Follow

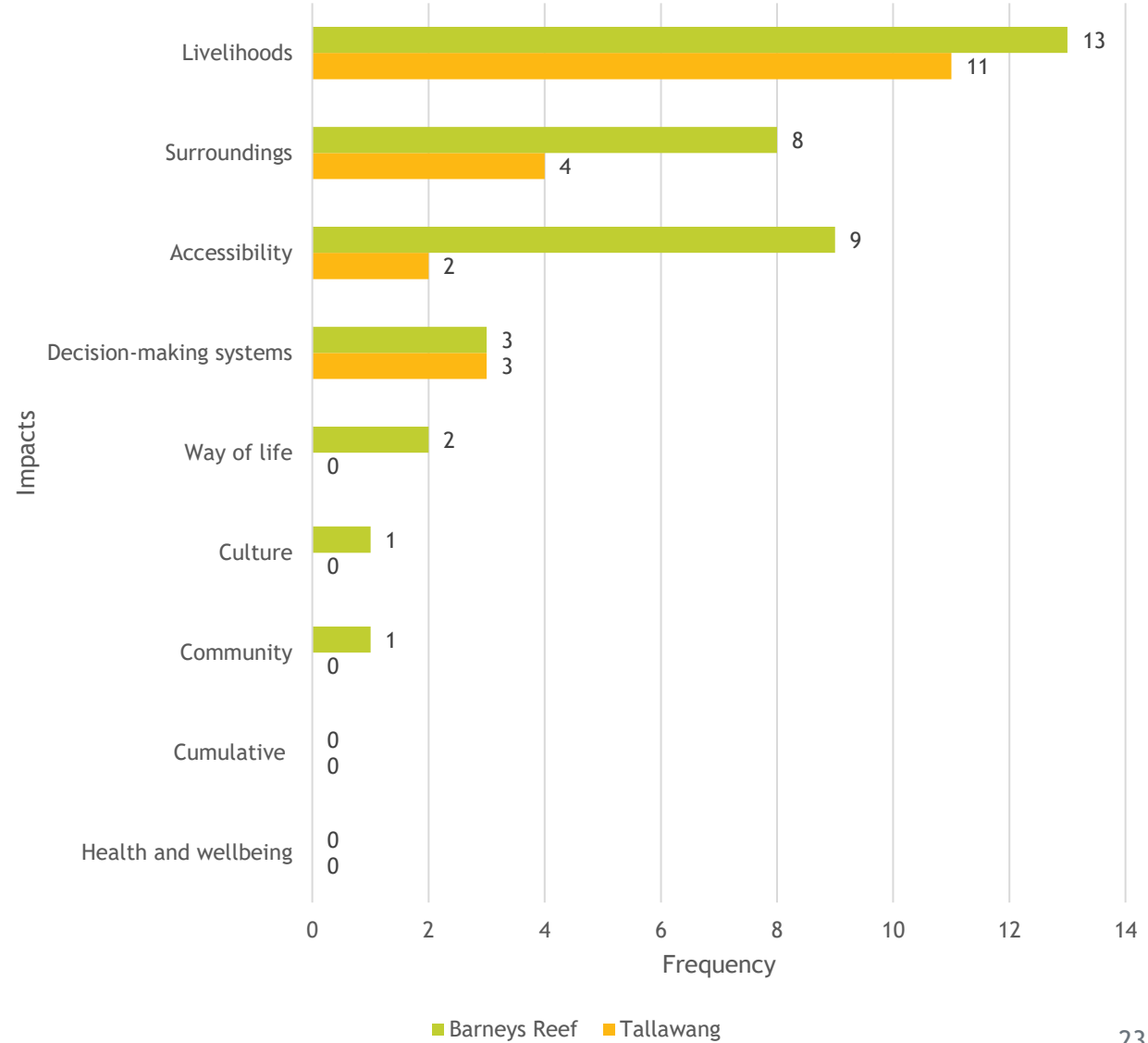
- Visual and Landscape Impact Assessment (including Shadow Flicker Assessment)
- Noise Impact Assessment
- Biodiversity Assessment
- Heritage (Aboriginal Cultural Heritage and Historic Heritage)
- Traffic and Transport (including Route Analysis)
- Economic Impact Assessment
- Social Impact Assessment
- Hazard and Safety including Aviation Safety, Electromagnetic Interference, Electromagnetic Fields, Blade Throw and Blade Glint, Bushfire Threat and Preliminary Hazard Analysis for the Battery Store
- Soil and Water Assessment
- Land Use Conflict Assessment
- Assessment of Cumulative Impacts

What We Have Heard So Far

Issues



Benefits



Employment

- 770 direct construction jobs (430 and 340 across TW and BR respectively)
- 7 operational jobs for the solar farm and 10 for the wind farm
- Currently considering local skills and capabilities
- Jobs likely to include fencing, earthworks, road construction, electrical trades, plus more.

Workforce Accommodation

- Considering capacity in towns up to 1.5 hours drive and commute options
- Acknowledge that accommodation has been flagged as a local issue due to tourism and mining sector
- Working with industry groups, Councils and local service providers to minimise pressure on local services

Construction Planning

Access, Transportation and Materials

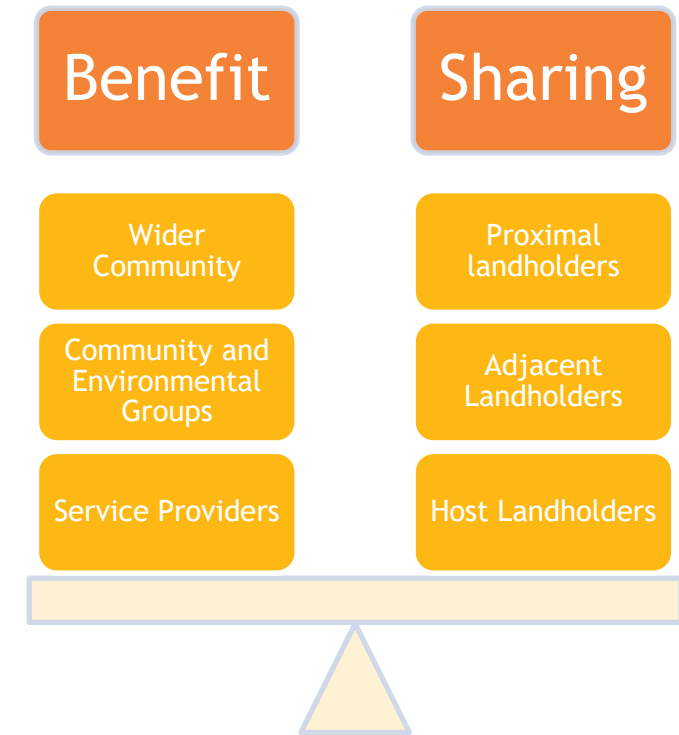
- All oversized deliveries likely via Newcastle
- Working with Councils for other deliveries and local roads
- Materials and supplies to be sourced from the region where possible, core equipment to be imported

Services and Procurement

- Indirect opportunities through contracting and services will be widespread
- Looking to source from the region where possible
- Currently considering local business capabilities and industry sectors to draw from

Shared Benefit Scheme

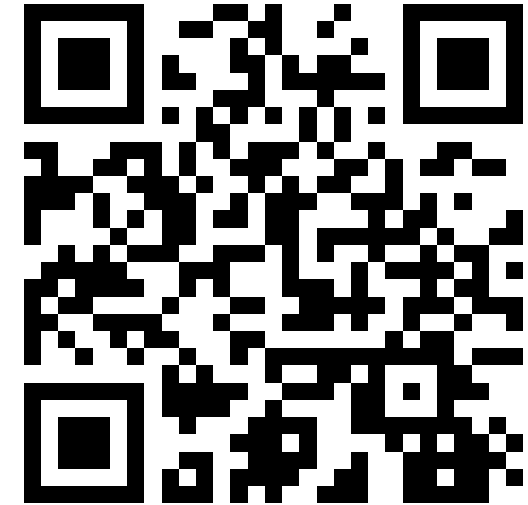
- RES has a strong track record of responsible development and is committed to supporting the communities where it constructs and operates renewable projects
- A community fund is being developed for both projects to support social, educational, environmental and other initiatives in the local communities
- We are currently exploring options for the structure for the fund and welcome feedback from the community on how the fund should be set up and administered as part of the SIA
- A separate benefit scheme is also being considered to ensure that immediate, adjacent and directly impacted members of the community share in the success of both projects
- As discussions with council and the local community progress, updates on the structure of community funds will be shared with interested parties



Future Project Updates and Opportunities for Feedback

- **Feedback Form** - your feedback is greatly appreciated and will be built into the SIA to be assessed by DPIE - [see link or QR code to complete](#)
- Consultation will be ongoing throughout October - personal or small group meetings can be arranged for those interested in participating further or by providing more detailed feedback
- Committed to face-to-face engagement when COVID safe to do so as was done earlier in the year
- If travel restrictions continue, additional online information sessions will be organized for future to update on EIS findings
- Links to applications for SEARs and scoping report submissions for both projects can be found on the NSW major projects website:
 - ✓ <https://www.planningportal.nsw.gov.au/major-projects/project/42311>
 - ✓ <https://www.planningportal.nsw.gov.au/major-projects/project/42351>
- Subject to ongoing engagement and assessments, submission of an EIS for both projects is planned for the end of 2021.

<https://resfeedbackform.questionpro.com>



Thank you!

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