

# Boulder Creek Wind Farm

## Community Information Sessions

Anthony Russo, General Manager – Development QLD

8<sup>th</sup> December 2021 - Westwood

9<sup>th</sup> December 2021 - Mt Morgan

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# Acknowledgement of Country

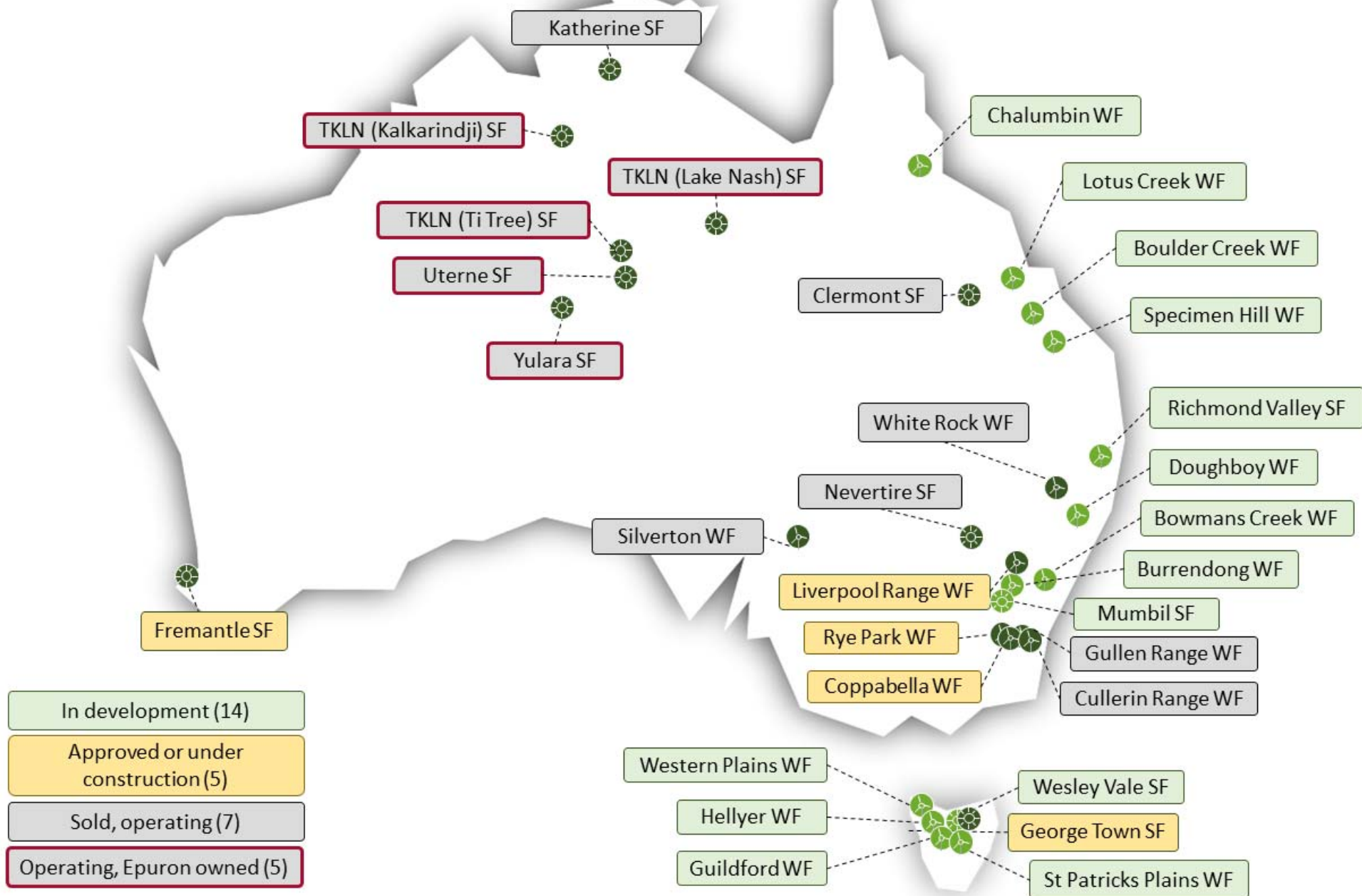
We acknowledge the Traditional Custodians of the land on which we meet.

We pay our respects to Elders past, present and emerging.

# Developing renewables since 2003



- Offices in Sydney and Brisbane
- Circa 24 specialist staff
- **4000 MW** of utility-scale wind energy development experience including **8** approved wind farms
- **11** wind farm projects under development in three states (NSW, Qld. and Tas.)
- **400 MW** of utility-scale solar energy development including **5** operating solar farms
- **6** solar farm projects under development in four states (WA, NSW, Tas. And NT)



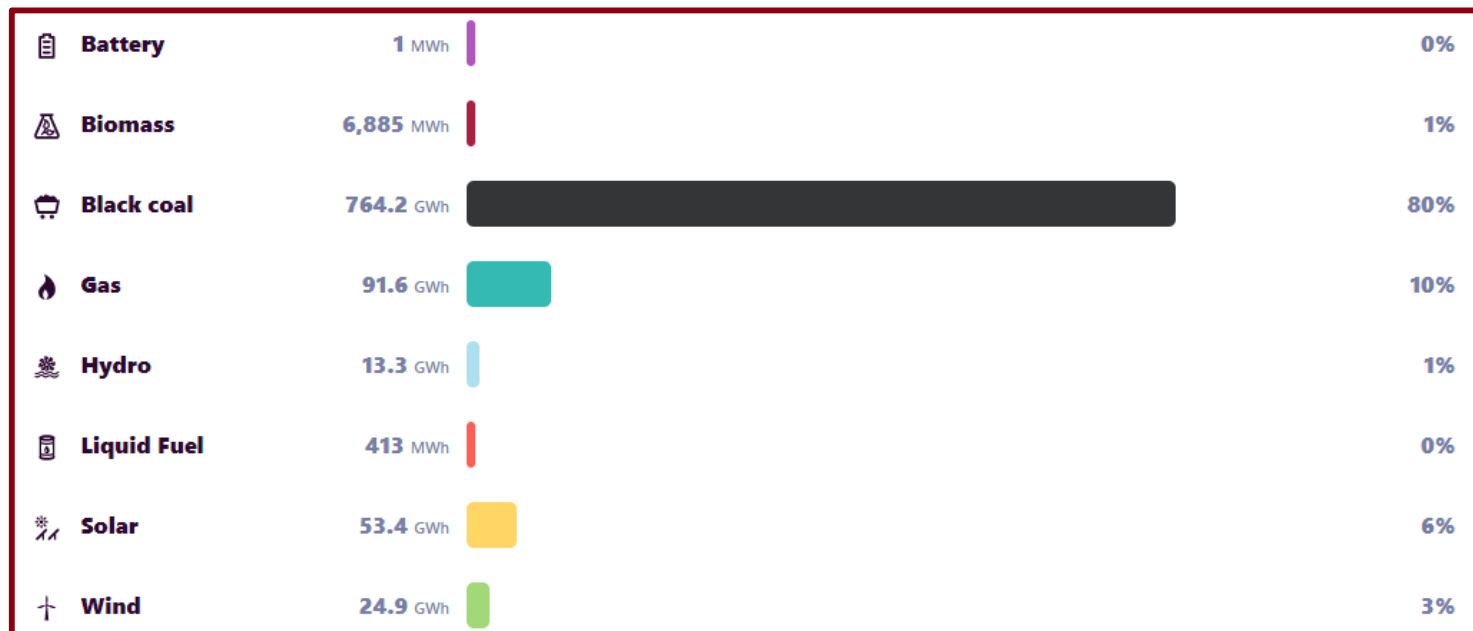
- In development (14)
- Approved or under construction (5)
- Sold, operating (7)
- Operating, Epuron owned (5)

# Engagement

- Epuron is a founding signatory to the Clean Energy Council Best Practice Charter for Renewable Energy Projects
  - Engage respectfully with communities
  - Be sensitive to environmental and cultural values
  - Make a positive contribution to the regions
- Community Information Sessions
  - Key project milestones
  - Opportunity to learn more about the proposal, discuss the project in person with members of the project team and ask questions
  - Website | Feedback forms | Project updates

# Big picture

- Australia needs new power sources – coal fleet retiring in next 20 years
- QLD Government commitment to cheaper and cleaner energy and more jobs for Queenslanders
  - Target: 50% renewable energy by 2030

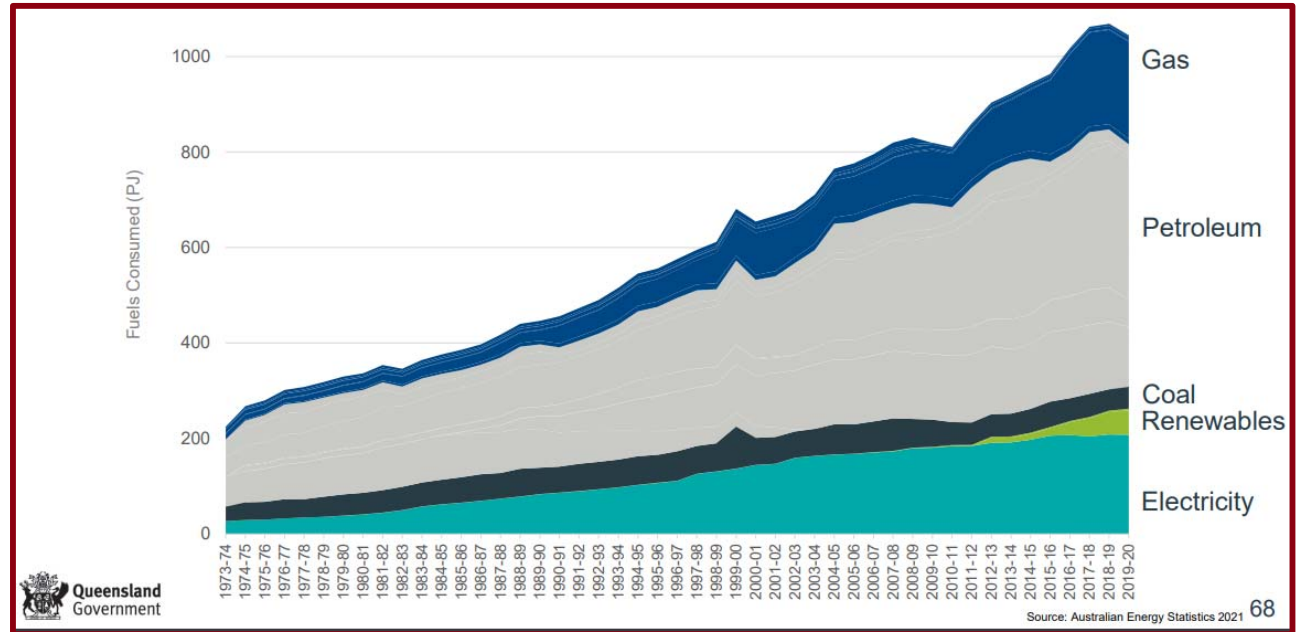


Past 12 months (Australian Energy Market Operator)



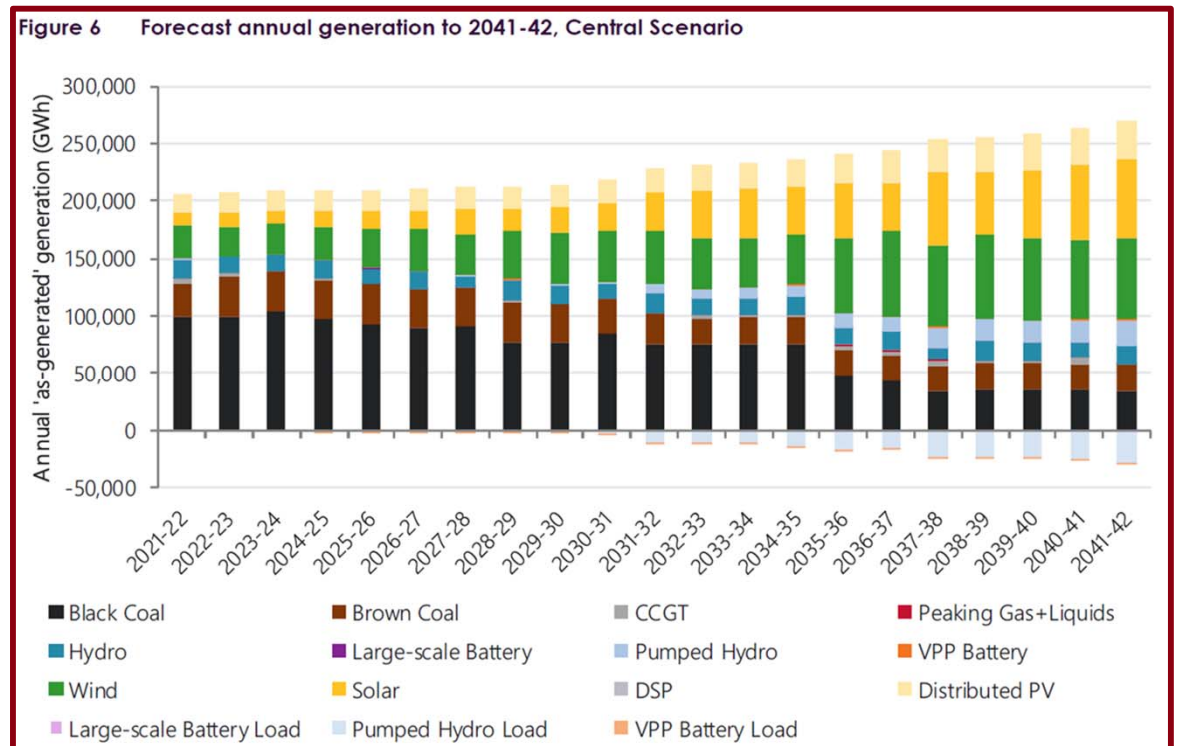
# Energy transformation

- Electric vehicle transition
- Shift from petroleum fuel sources towards electricity
- Growing electricity demand in addition to renewable energy targets



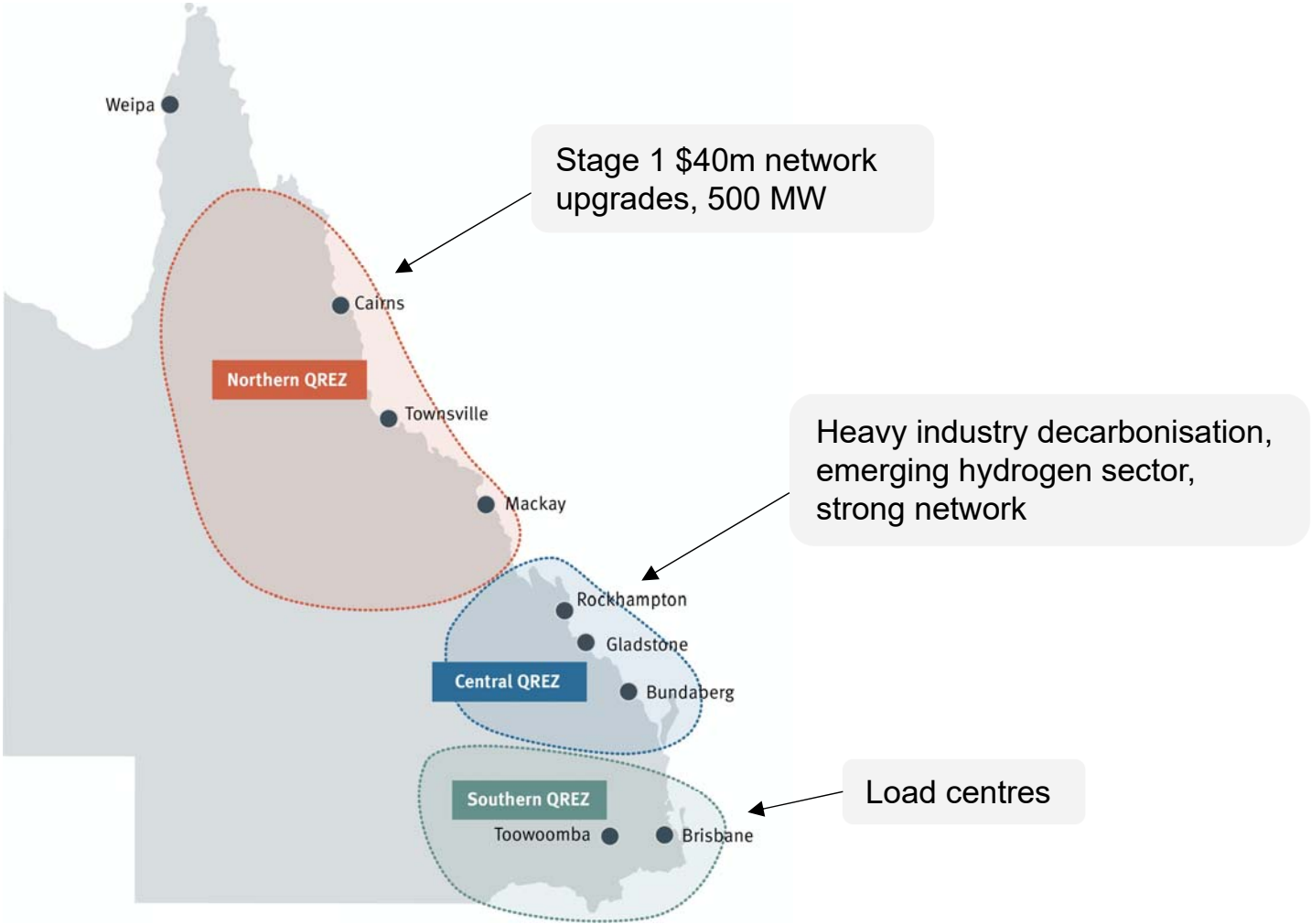
# New generation sources

- Renewable energy targets and growing demands requires new generation sources
- Coal fleet ageing and expected to close by 2050
- Australian Energy Market Operator expects 45% of new demands from wind





# Queensland renewable energy zones



# Development concept



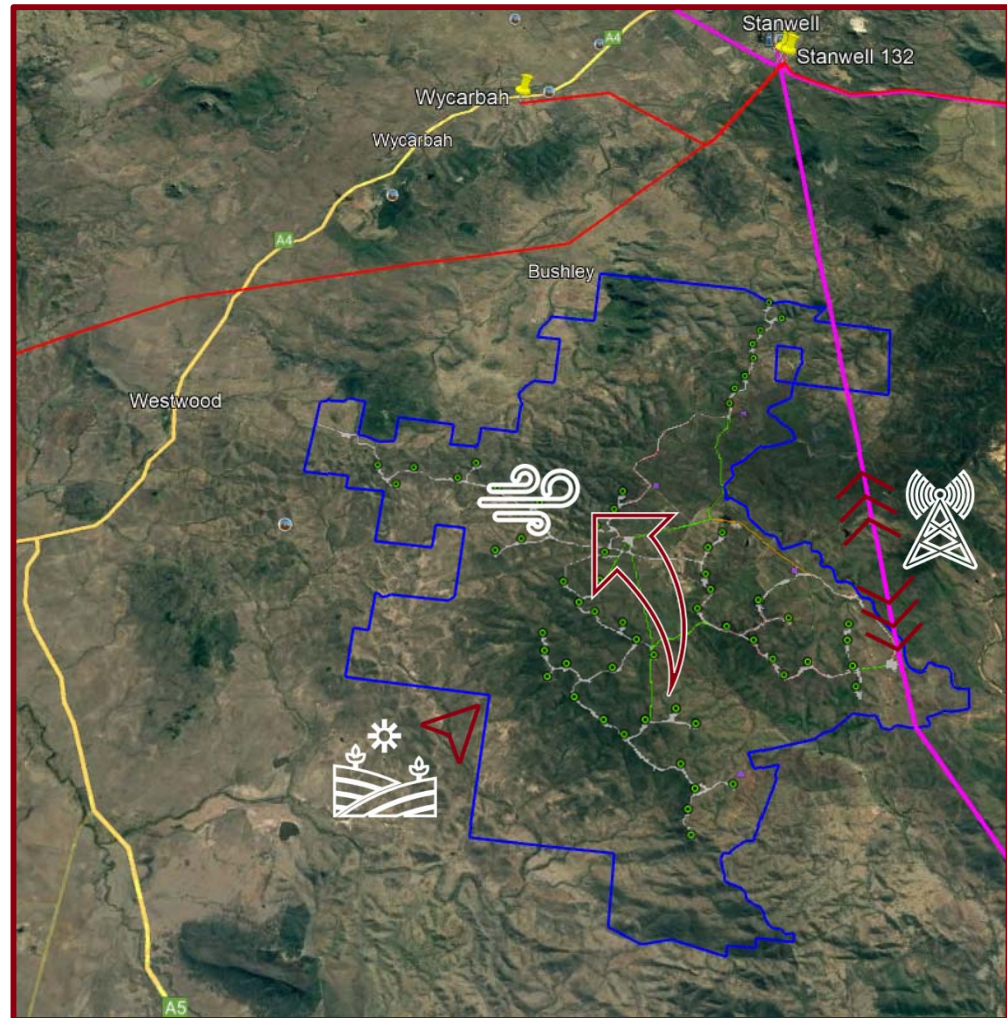
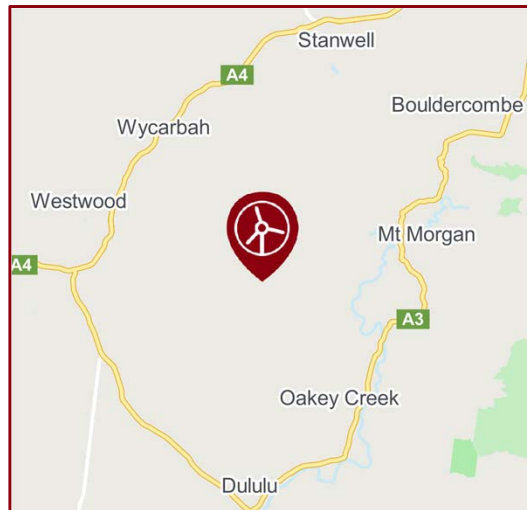
Wind resource



Grid connection

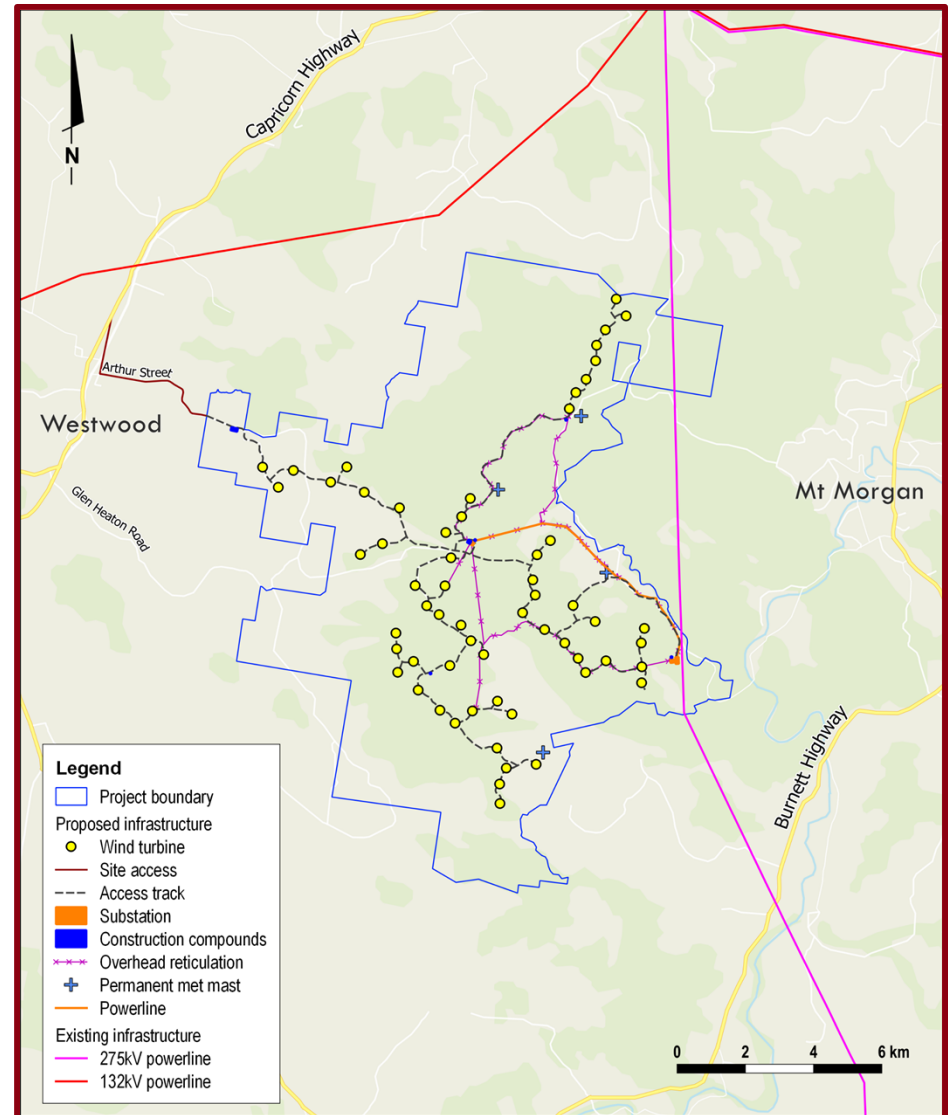


Land tenure



# Boulder Creek Wind Farm

- 40km SW Rockhampton
- Rockhampton Regional and Banana Shire Councils
- Wind resource: ranges between Westwood and Mt Morgan, monitoring since 2018
- Grid connection: 275 kV Powerlink transmission line
- Land tenure: land agreements with landholders, pastoral land use



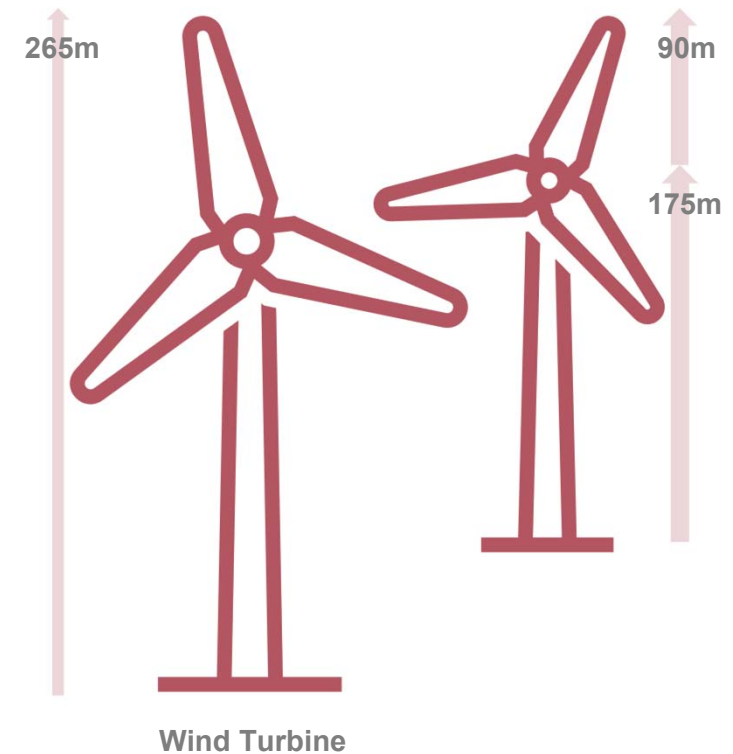
# Project design

- Definition advances through Epuron's development stage gates (e.g. flora, fauna, wind modelling, etc)
- Opportunities and constraints design iterations



# Specifications

Parameter	Unit	Qty
1. Hub Height (Up to)	Metres	175
2. Blade Length (Up to)	Metres	90
3. Total Tower Height (Up to)	Metres	265
4. Wind Turbine Capacity	Megawatt	5 to 7
5. Wind Farm Size	# Wind Turbines	60
6. Total Wind Farm Capacity	Megawatt	420





# Components: Access Tracks

- 5.5m crest width
- Wider toe width required for cut / fill batters, drainage and erosion control
- Buried cabling
- Preliminary design





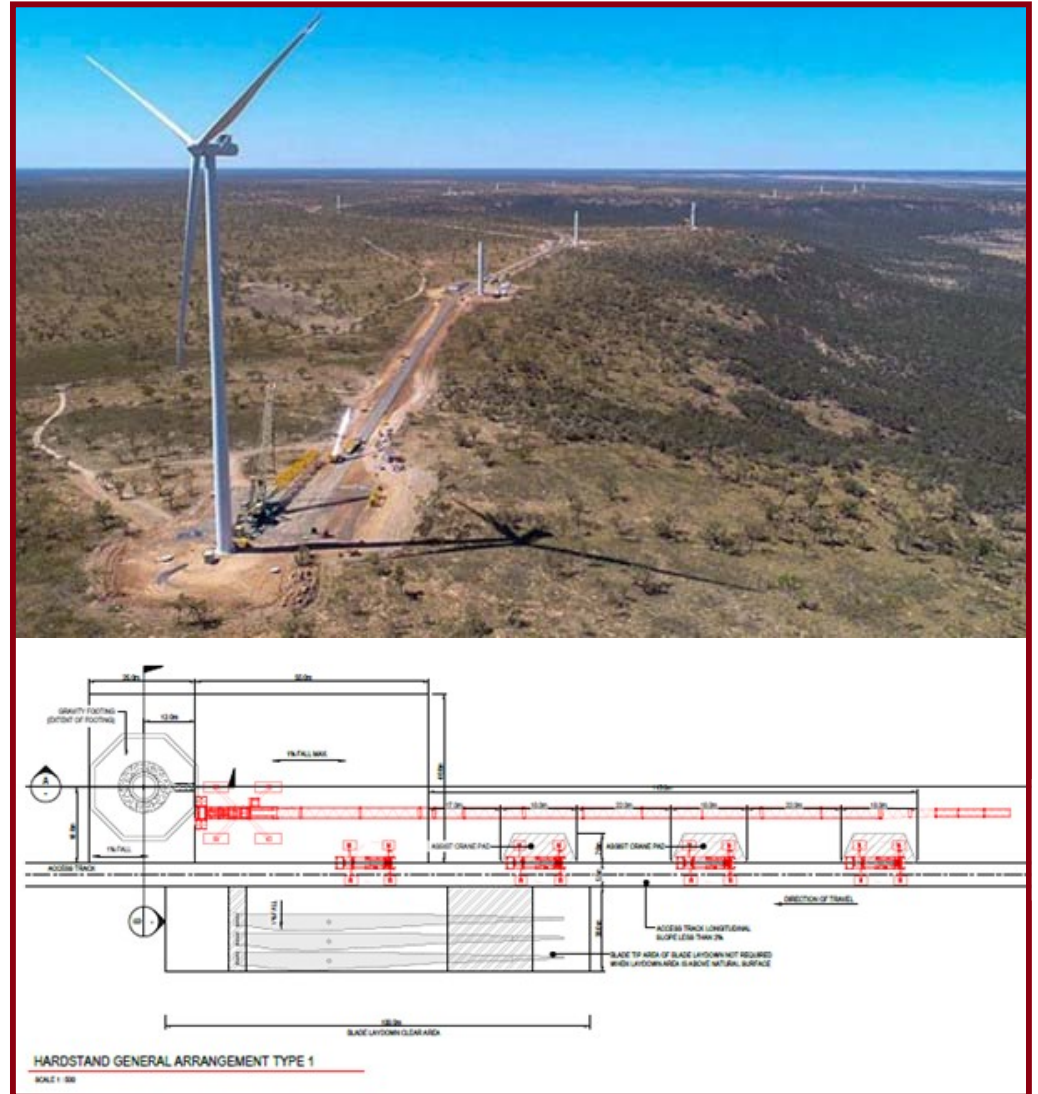
# Components: Turbine Foundations

- 800m<sup>3</sup> concrete
- Constant pour to maintain integrity
- Preliminary design (final planned in 2022)



# Components: Hardstands

- Crane assist pad, high / large equipment
- Laydown area (blades, tower, nacelle etc)
- 1.5 to 2 ha per turbine



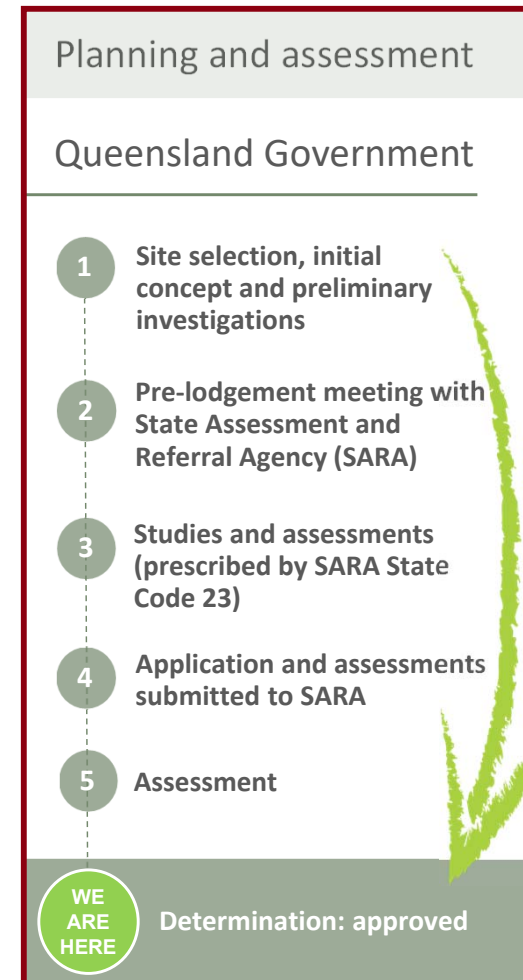
# Components: Substations

- Wind farm collector to link turbines across site
- Low voltage to high voltage connection
- Potential for battery storage to support grid connection
- 2 ha each



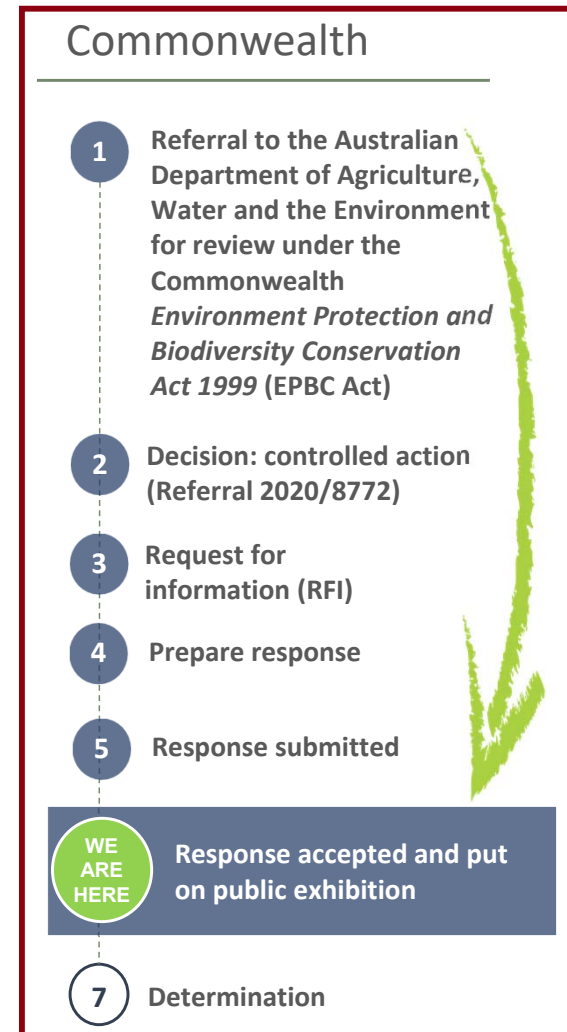
# State Approval

- Development Permit granted on 15/10/2021
  - Material change of use for Wind Farm
  - Operational works for clearing native vegetation
- Technical studies undertaken include:
  - Aviation Impact Assessment
  - Ecological Assessment Report (including Vegetation Management Plan, Fauna Management Plan, Bird and Bat Management Plan)
  - Electromagnetic Interference Assessment
  - Landscape and Visual Impact Assessment
  - Noise Impact and Shadow Flicker Assessment
  - Traffic Impact Assessment and Preliminary Route Assessment (port to site)
  - Preliminary Stormwater Management Plan
  - Preliminary Construction Management Plan and Erosion and Sediment Control Plan



# Commonwealth Approval

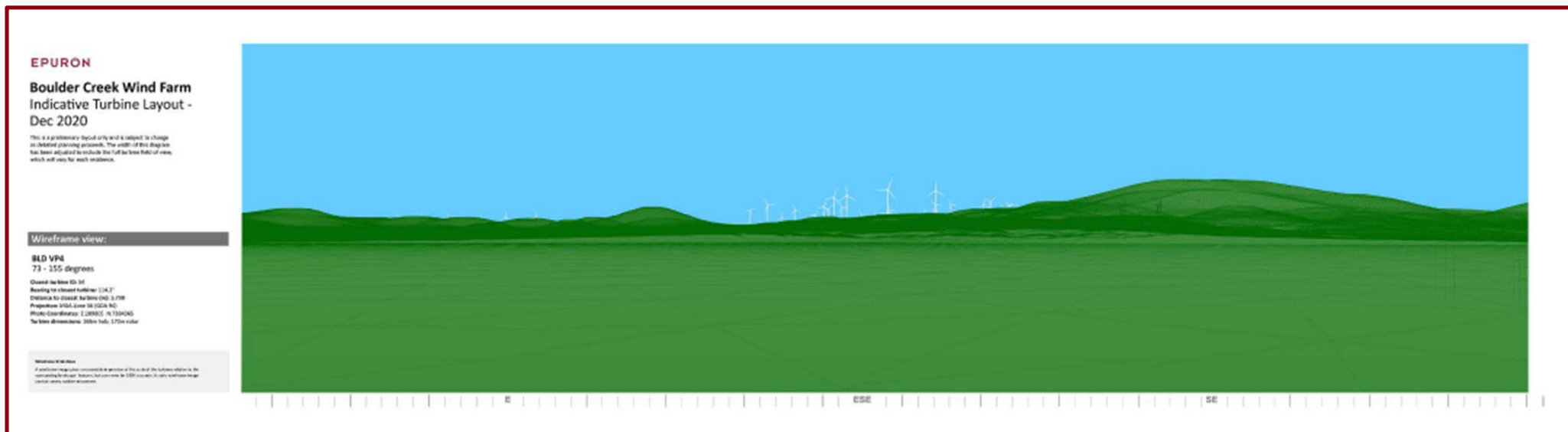
- Referral lodged in January 2021
- Assessment by Preliminary Documentation
- Response accepted in November 2021
- Public Exhibition in December 2021
- Approval anticipated in Q1 2022
- Key considerations:
  - Greater glider (14.5 ha)
  - Koala (552 ha)
  - *Cycas megacarpa* (95 ha)
  - Environmental Offsets Strategy





# Visual Amenity

- State Code 23 Performance Outcome 09
  - *Development avoids, or minimises and mitigates, adverse impacts on the character, scenic amenity and landscape values of the locality and region through effective siting and design.*





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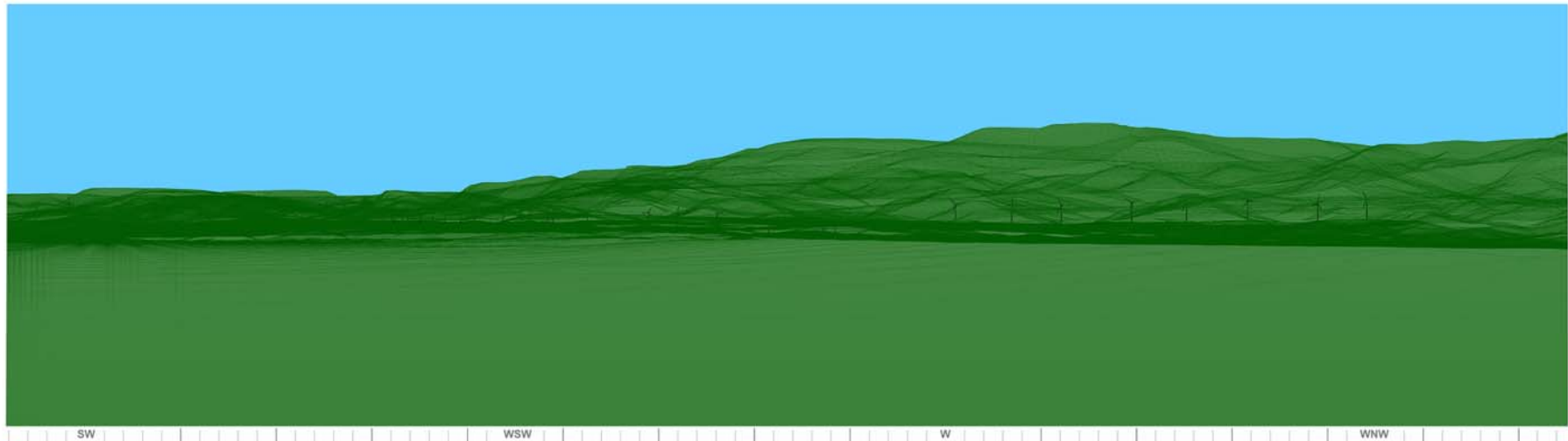
## Boulder Creek Wind Farm Indicative Turbine Layout - Dec 2020

This is a preliminary layout only and is subject to change as detailed planning proceeds. The width of this diagram has been adjusted to include the full turbine field of view, which will vary for each residence.

### Wireframe view:

**BLD VP3**  
221 - 302 degrees  
Closest turbine ID: 47  
Bearing to closest turbine: 285.4°  
Distance to closest turbine (m): 8,810  
Projection: NGA Zone 56 (GDA 94)  
Photo Coordinates: E: 2235548 N: 7384245  
Turbine dimensions: 165m hub, 170m rotor

Wireframe Evaluation  
A wireframe image gives a reasonable impression of the scale of the turbines relative to the surrounding landscape features, but can never be 100% accurate. A scale wireframe image cannot convey turbine dimensions.

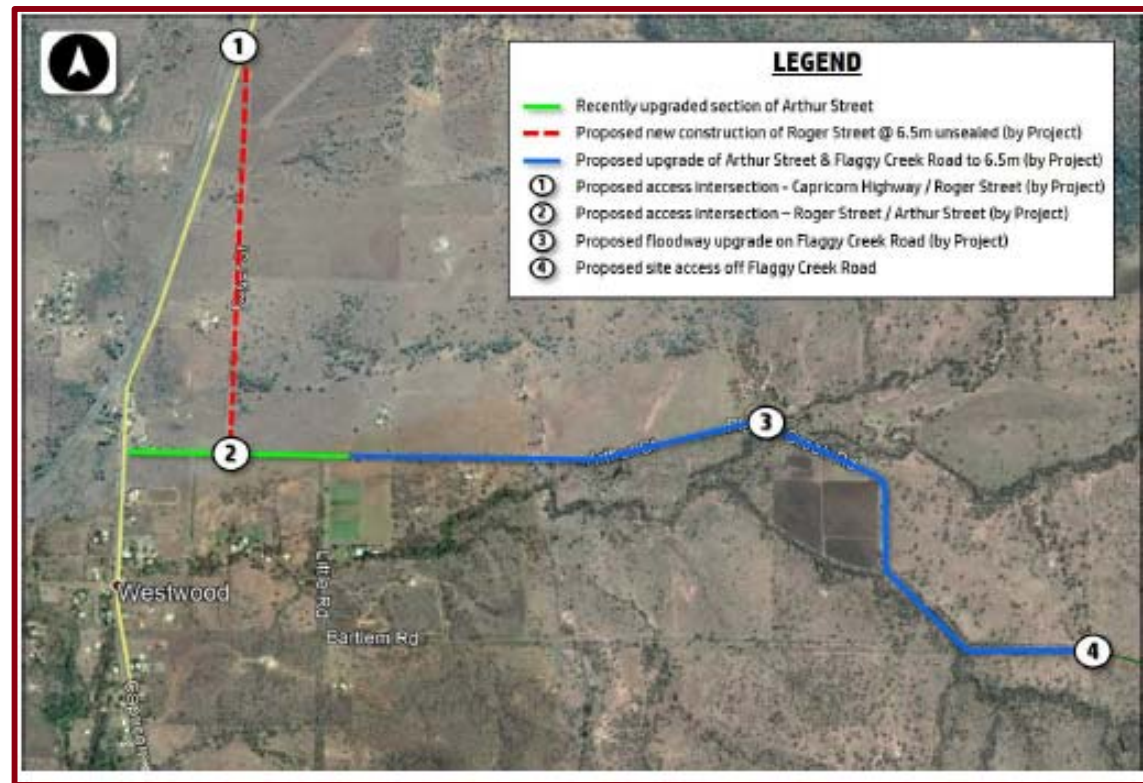


View from Mount Morgan (wireframe)

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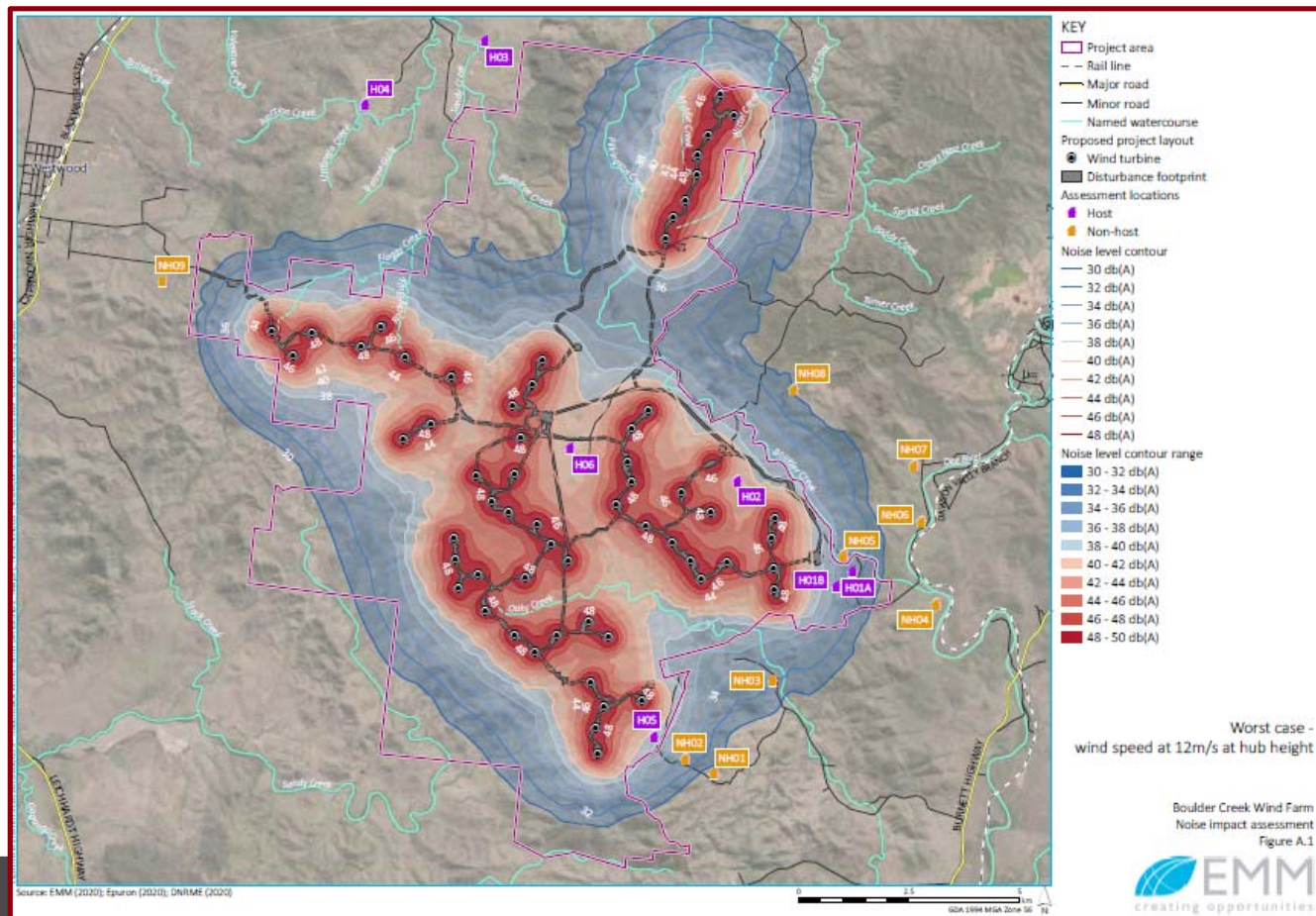
# Transport

- Delivery of components from Port of Gladstone and transport along existing road network
- Swept path analysis for transport of large components: blades (85m length) and tower (6.3m diameter)
- Feasible route identified, Traffic Management Plan for rectification of pinch points prior to construction (e.g. pavement widening, vegetation clearing, signage removal etc)
- Low volume of traffic movements, deliveries of large components to avoid temporary road closures during key periods.
- 1.5 km of new road required near Westwood (Roger Street before Arthur Street)



# Noise

- Predicted to comply with the minimum noise assessment criteria provided in State Code 23 at all host and non-host lots
  - Night-time: 45 dB(A) / background + 5 dB(A) (host lots); 35 dB(A) / background + 5 dB(A) (non-host lots)
  - Day-time: 37 dB(A) / background + 5 dB(A) (non-host lots)



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# Ecology

- State: requires clearing of 359.7 ha of least concern vegetation, 47.3 ha of regrowth least concern vegetation and 0.9 ha of regrowth endangered vegetation
- Commonwealth: requires clearing of habitat for Greater Glider (14.5 ha), Koala (552 ha) and *Cycas megacarpa* (95 ha)
- Environmental Offset Strategy



# Cultural Heritage

- Darumbal and Gaangalu Nation Peoples country
- Cultural Heritage Management Agreements
  - Gaangalu Nation People for the southern and eastern parts of the site
  - Darumbal People for the north-west part of the project.



# Socio-economic benefits



- \$750m Capital Investment in the project
- 2 years of construction work
  - 250-350 jobs on site – civil/electrical, construction, admin, support etc
  - No workers camp proposed, encouraging works to spend time and money in local community
  - Aim for local work force where possible
- 25+ years of operation
  - 10-15 long term jobs for local people
  - Mostly wind turbine technicians – electrical trade
  - Landscaping, admin, support etc
- 1.2 GWh/year of clean renewable energy in the Central REZ
  - Offsetting 0.5m tonnes of CO<sub>2</sub> each year

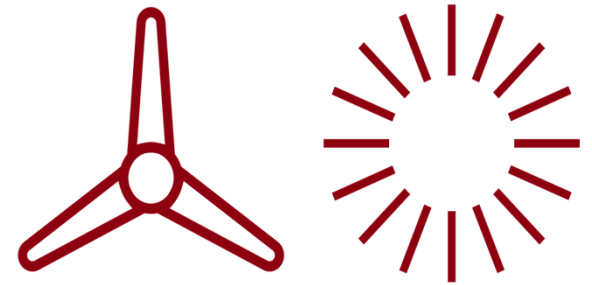


# Next steps



- December 2021
  - Feedback from Community Information Sessions
  - Public exhibition of Preliminary Document Report closes
- Calendar year 2022
  - Commonwealth approval
  - Detailed design, secondary approvals
  - Final investment decision
- 18-24 months construction

# Questions



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# Thank you

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