

Specimen Hill Wind Farm

Community Information Session

Biloela, 23 February 2022

Anthony Russo, General Manager Development - QLD

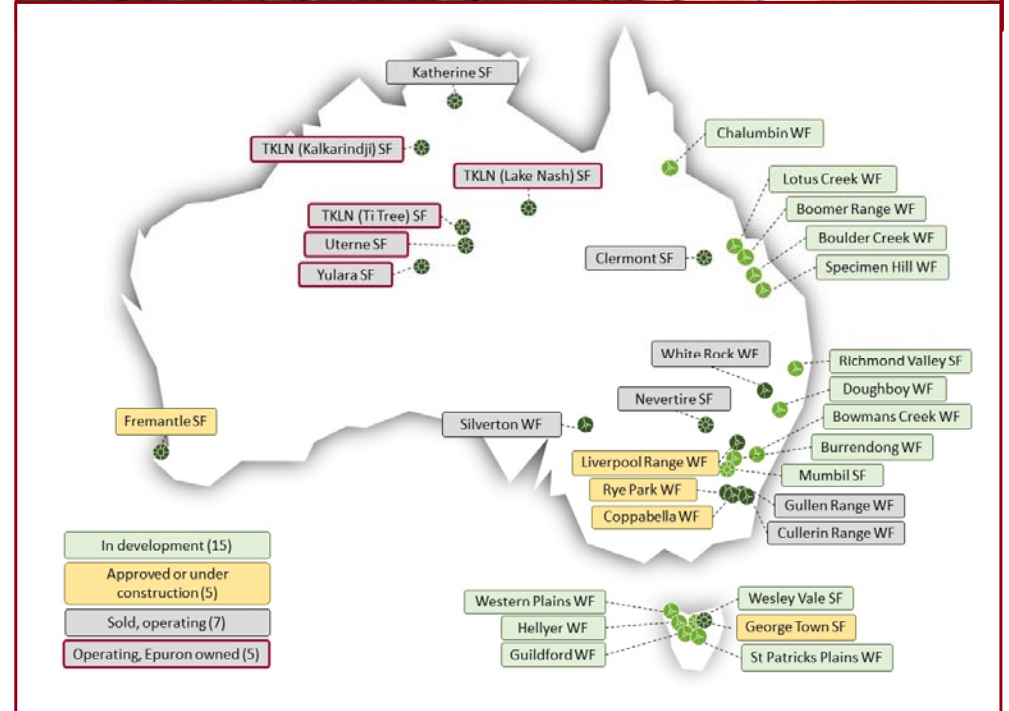
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Acknowledgement of Country

We acknowledge the Gaangalu Peoples as the Traditional Custodians of the land upon which we meet and their continuing connection to lands, waters and communities.
We pay our respects to Elders past, present and emerging.

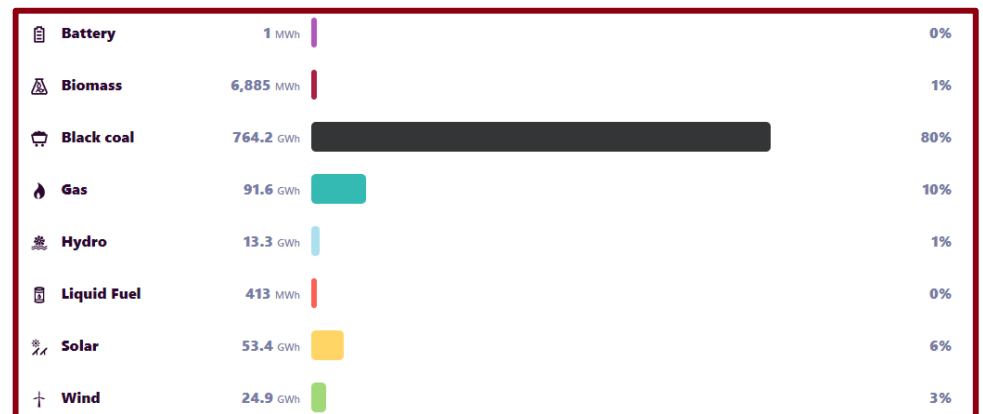
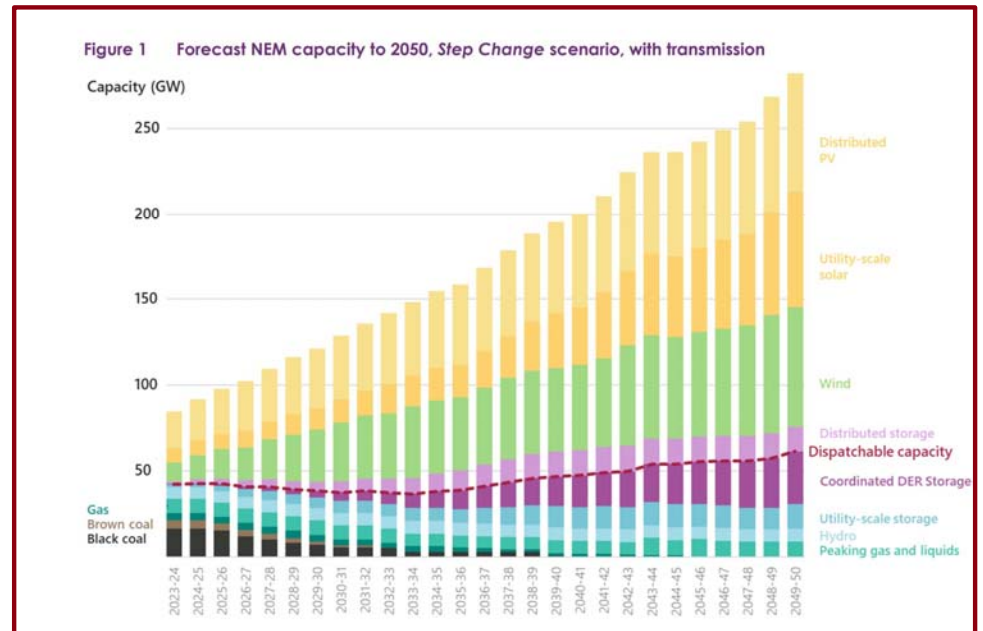
Epuron

- Developing renewables since 2003.
- **4000 MW** of utility-scale wind farm experience including 8 approved wind farms.
- **12** wind farm projects in development (Qld, NSW, Tas).
- **400 MW** of utility-scale solar energy experience including 5 operating solar farms
- **6** solar farm projects in development (WA, NSW, Tas, NT).
- Signatory to Clean Energy Council's Best Practice Charter.
- Expert team, collaborative and consultative approach.

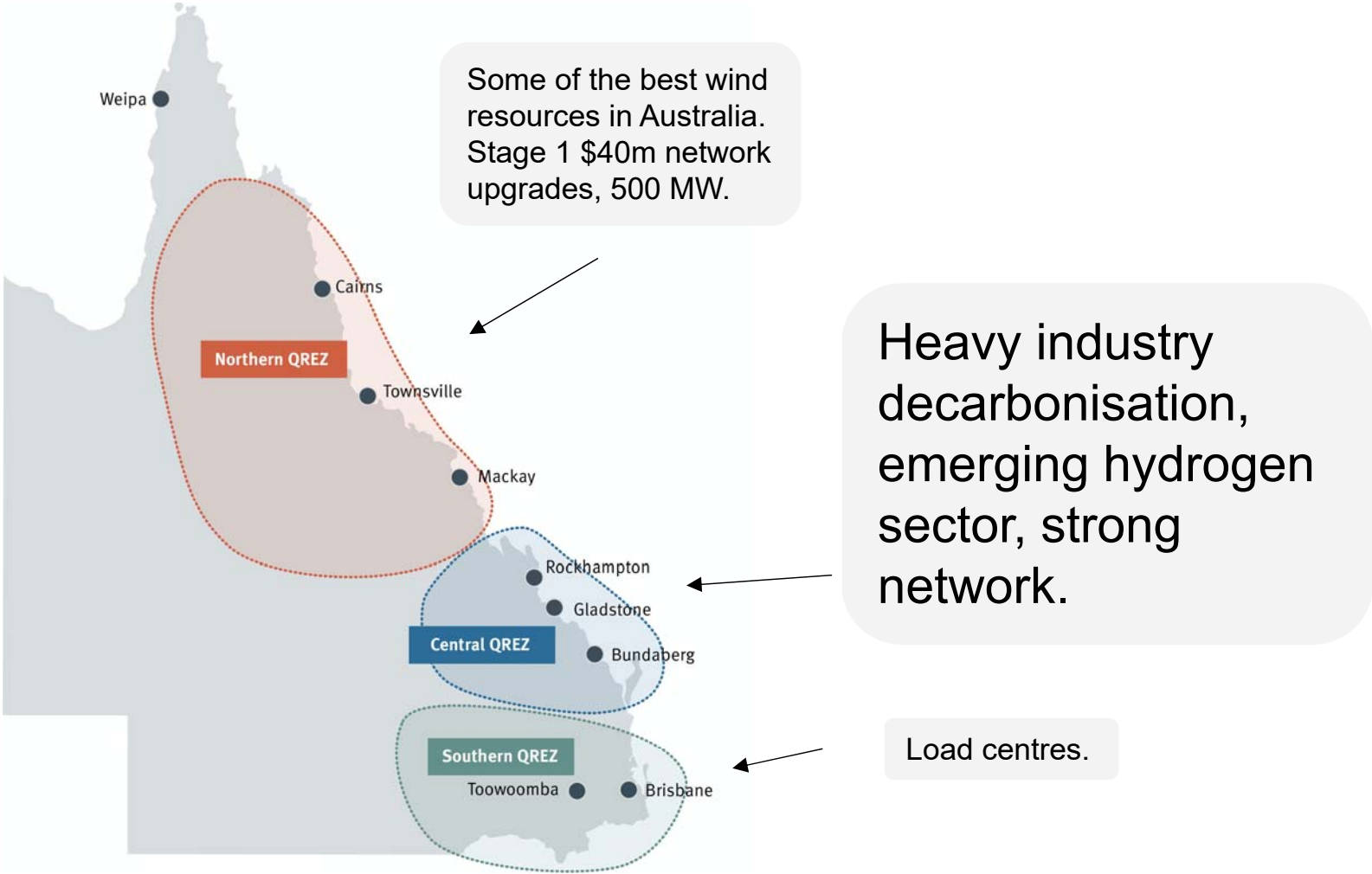


Big picture

- Coal retiring 2-3 times faster than expected.
- Draft 2022 ISP = NEM needs 135GW solar, 70GW wind, 45GW storage by 2050.
- Triple the previous forecast and nine-times the variable RE we have now.
- Qld. renewable energy target 50% by 2030 (currently ~20%).
- AEMO projects 47 GW of new RE in Qld by 2050.



Queensland's renewable energy zones



Site selection



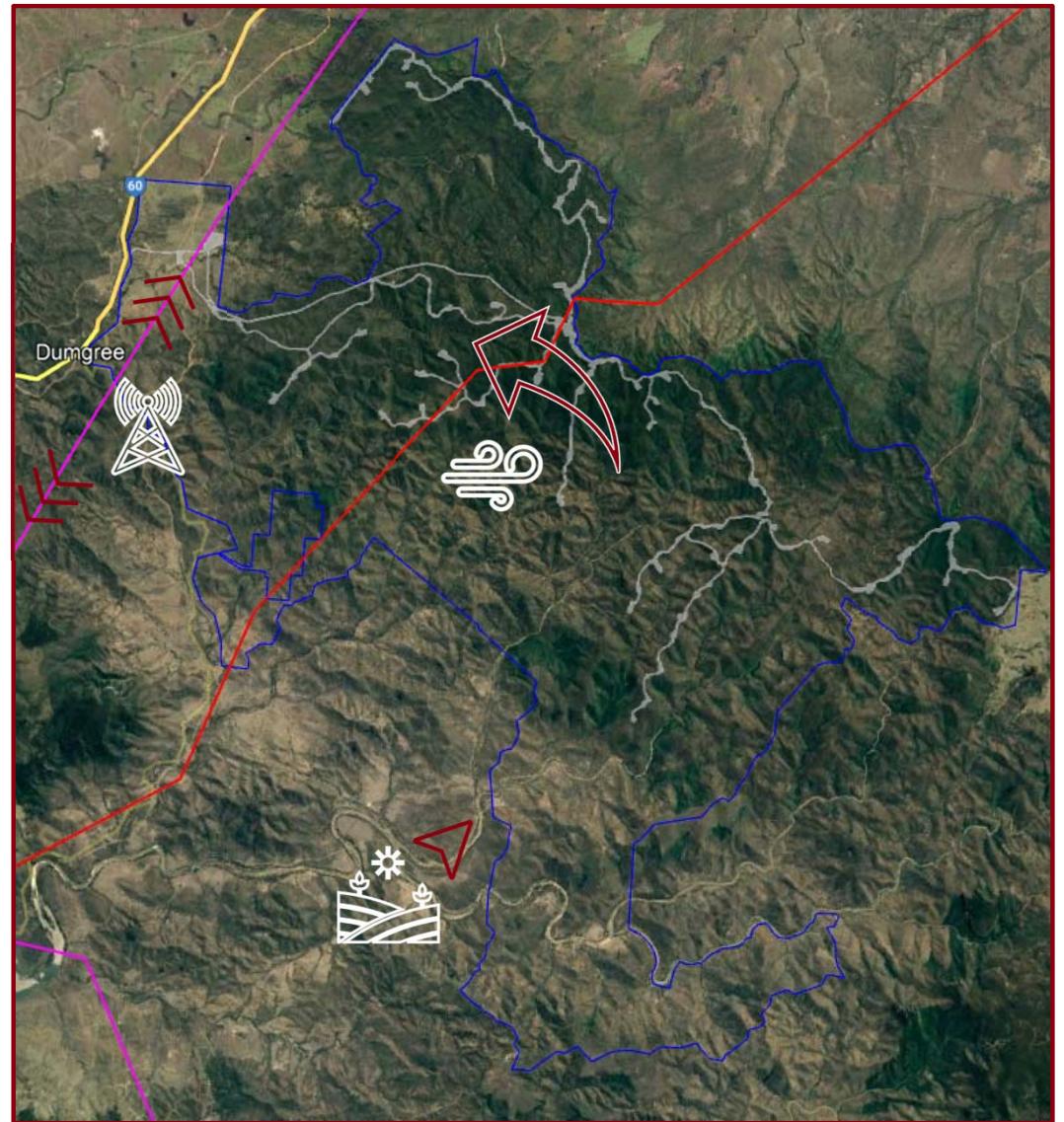
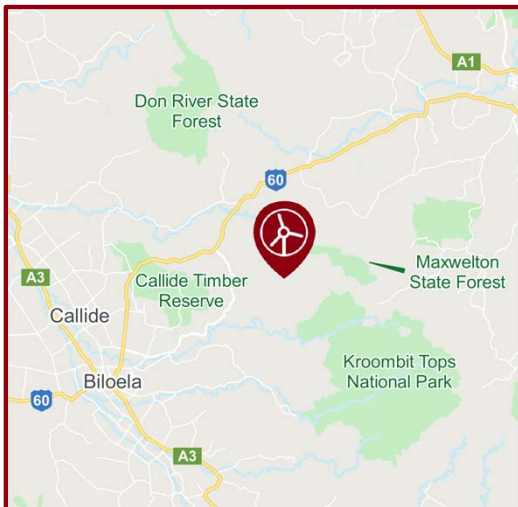
Wind resource



Grid connection

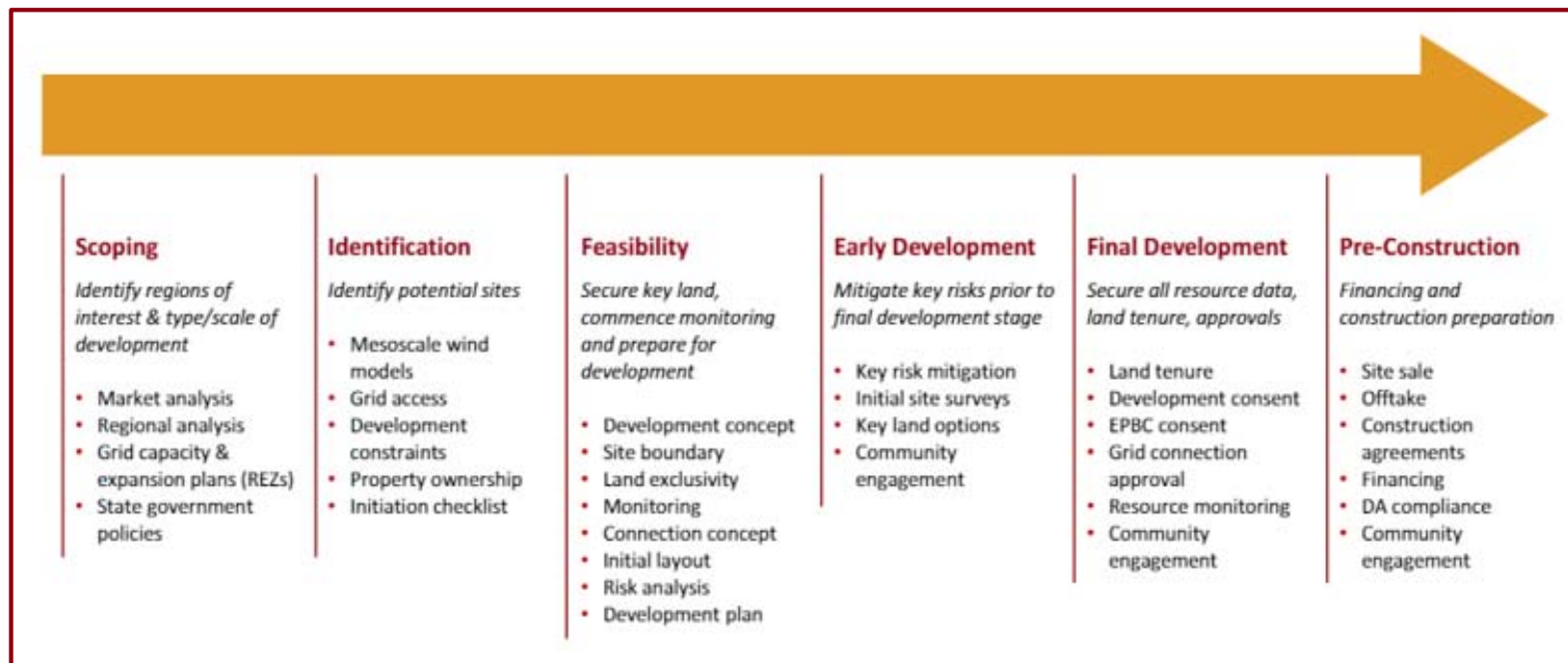


Land tenure



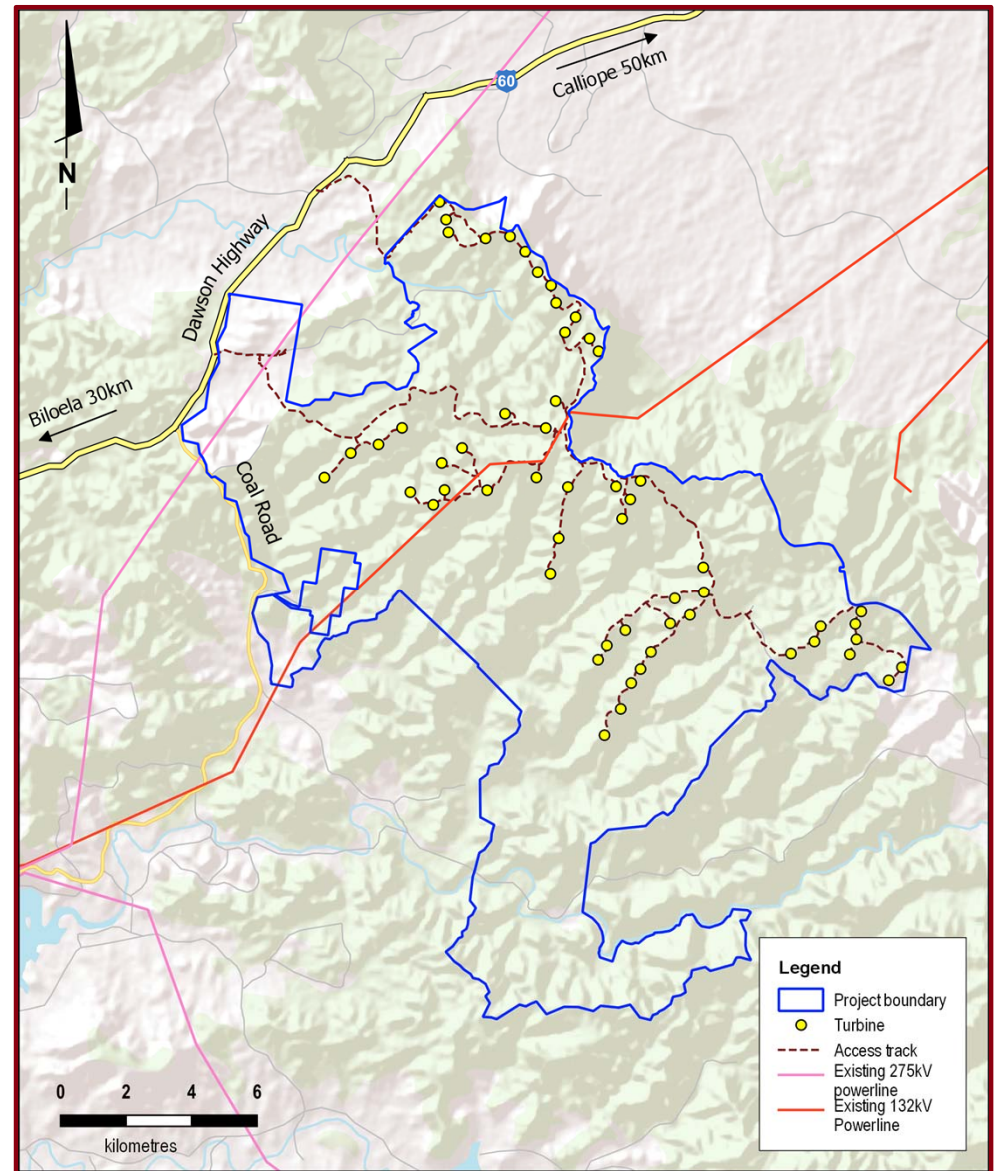
Project design process

- Feasibility study process advances project definition over time.
- Iterative design process, constraints and opportunities considered (e.g. ecology, cultural heritage, civil works, wind resource modelling etc.)
 - Original concept considered 85 wind turbines (maximise economic wind resource).
 - Footprint reduced to 56 wind turbines (avoidance of site-specific constraints).



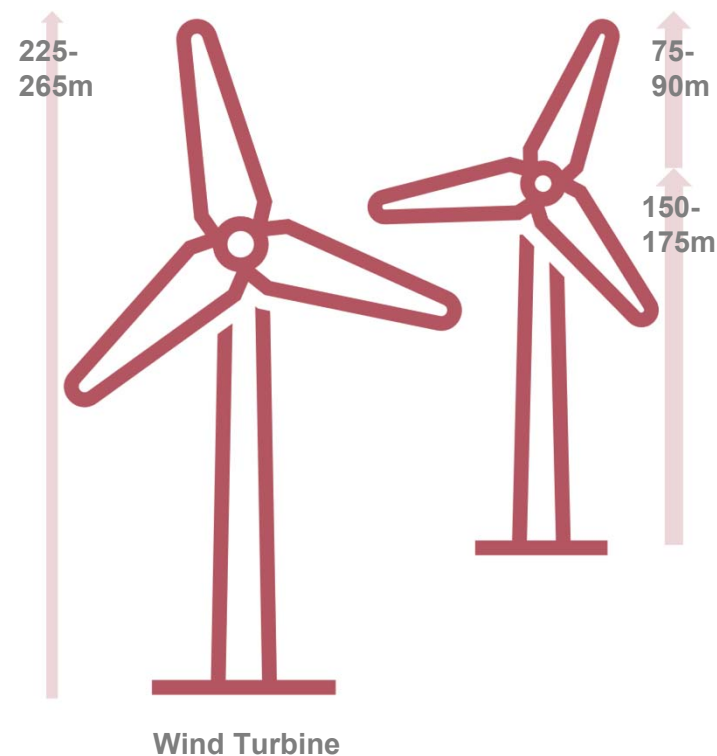
Proposal

- Location: approx. 25 km north-east of Biloela, in Banana Shire Council and Gladstone Regional Council areas.
- Capacity: 56 wind turbines, approx. 336 MW.
- Wind resource: monitoring since 2018 (6 sodar sites, 5 met masts).
- Grid connection: new substation to connect to 275 kV Powerlink transmission line with optional battery storage. Internal collector sub-station and overhead transmission line.
- Land tenure: land agreements with landholders, pastoral land use.
- Outside Maxwellton State Forest and Kroombit Tops National Park.



Wind turbine specifications

| Parameter | Unit | Qty |
|-------------------------------|-----------------|-----------|
| 1. Hub Height (Up to) | Metres | 150 – 175 |
| 2. Blade Length (Up to) | Metres | 75-90 |
| 3. Total Tower Height (Up to) | Metres | 225-265 |
| 4. Wind Turbine Capacity | Megawatt | 5 to 7 |
| 5. Wind Farm Size | # Wind Turbines | 56 |
| 6. Total Wind Farm Capacity | Megawatt | 280-392 |



Components - examples

Access tracks



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

Tower foundations



- 800m³ concrete
- Constant pour to maintain integrity
- Preliminary design (final planned in 2022)

Components - examples

Hardstands



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

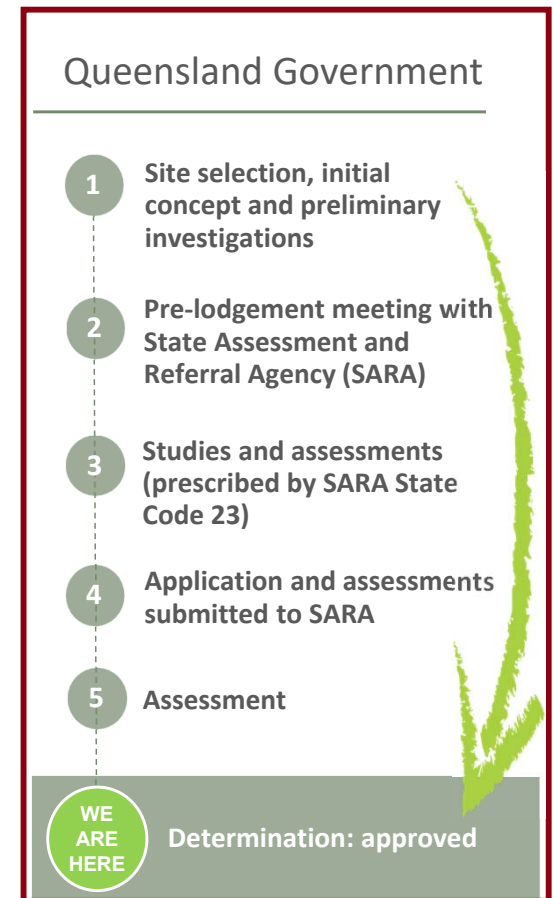
Substations



- 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

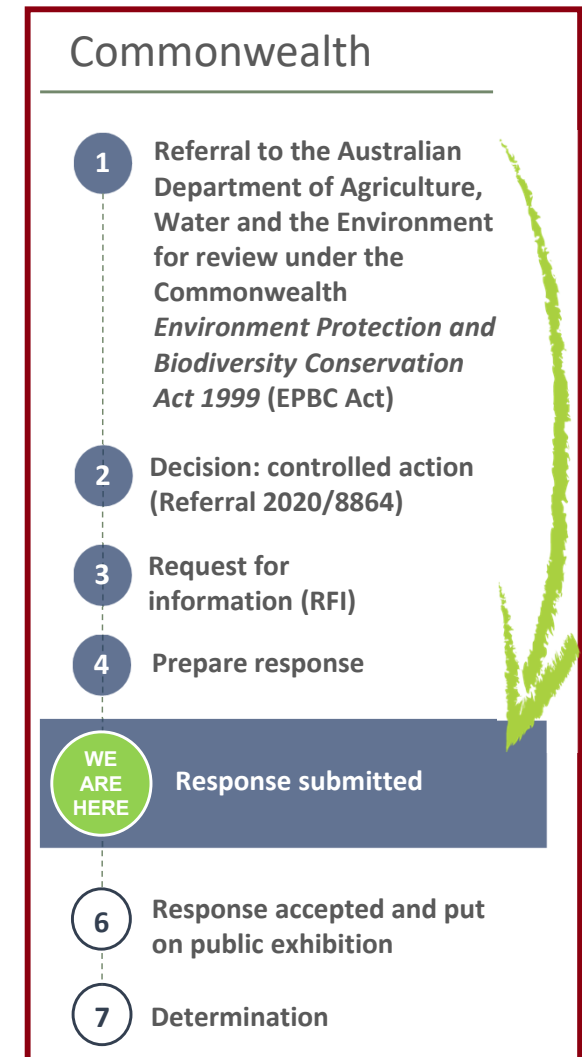
Assessment – State

- Development Application approved December 2021
 - Material change of use for Wind Farm (State code 23).
 - Operational works for clearing native vegetation (State Code 16).
- Technical studies 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.



Assessment - Commonwealth

- Referral lodged January 2021
- Federal Department of Agriculture, Water and Environment (DAWE) deemed proposal a 'controlled action' assessable by Preliminary Documentation (PD) in February 2021
- Request for Information (RFI) issued by DAWE in March 2021.
- Initial response to RFI submitted to DAWE in November 2021 with supplementary information provided in February 2022.
- Draft PD will be placed on public exhibition following adequacy review by DAWE, most likely in Q2 2022.



Traditional Owners

First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People

- Port Curtis Coral Coast Claim, southern portion of project area.
- Cultural Heritage Management Agreement signed in November 2020.
- Indigenous Land Use Agreement signed in November 2020.



CHMA signing November 2020

Gaangalu Nations People

- Northern portion of project area.
- Cultural Heritage Agreement signed in March 2021.



CHMA signing March 2021
(including Boulder Creek Wind Farm)

Community engagement

- Project updates issued via mail and email.
- Project website with feedback form: specimenhillwindfarm.com.au
- Information sessions.
- Ongoing engagement and consultation with community members and stakeholders via email and phone.



We value your input

We welcome feedback from the local community and other interested parties. This feedback will be used to inform key priorities. Please complete and submit your feedback by the deadline. Your feedback will not be shared publicly, and your identity will remain anonymous.



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Ecology

- Rigorous and comprehensive assessment requirements
- Extensive surveys – over 1,000 person hours across autumn and spring seasons.
 - Surveys and stakeholder input into project design to avoid or minimise potential impacts to the extent practicable.
 - Significant residual impact (SRI) to be offset.
- Matters of State Environmental Significance
 - Potential for SRI on 25.7 ha ‘of concern’ & 17.7 ha ‘watercourse’ vegetation



Ecology

- Matters of National Environmental Significance (EPBC Act)
 - Initial assessment of SRI in response to RFI (habitat)
 - *Cycas Megacarpa* 287 ha
 - Koala habitat 797 ha
 - Greater glider 208 ha (denning)
 - Greater glider 131 ha (foraging)
 - Collared delma 201 ha
 - Squatter pigeon 101 ha



C.megacarpa



Collared delma, spring survey



Squatter pigeon, autumn survey

Visual amenity

State Code 23 Performance Outcome 09

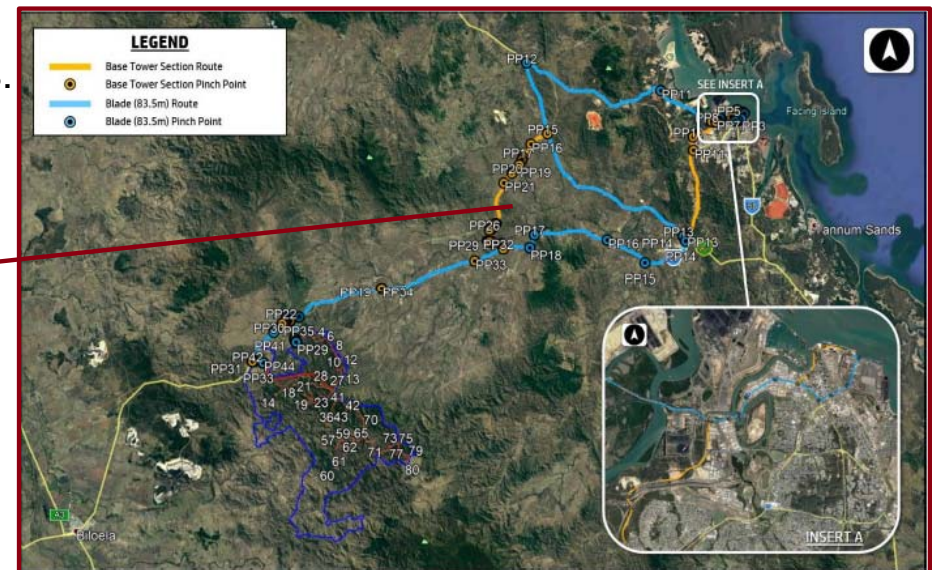
Development avoids, or minimises and mitigates, adverse impacts on the character, scenic amenity and landscape values of the locality and region through effective siting and design.



Photomontage of what the wind farm would look like from 'Rockford' 7005 Dawson Highway

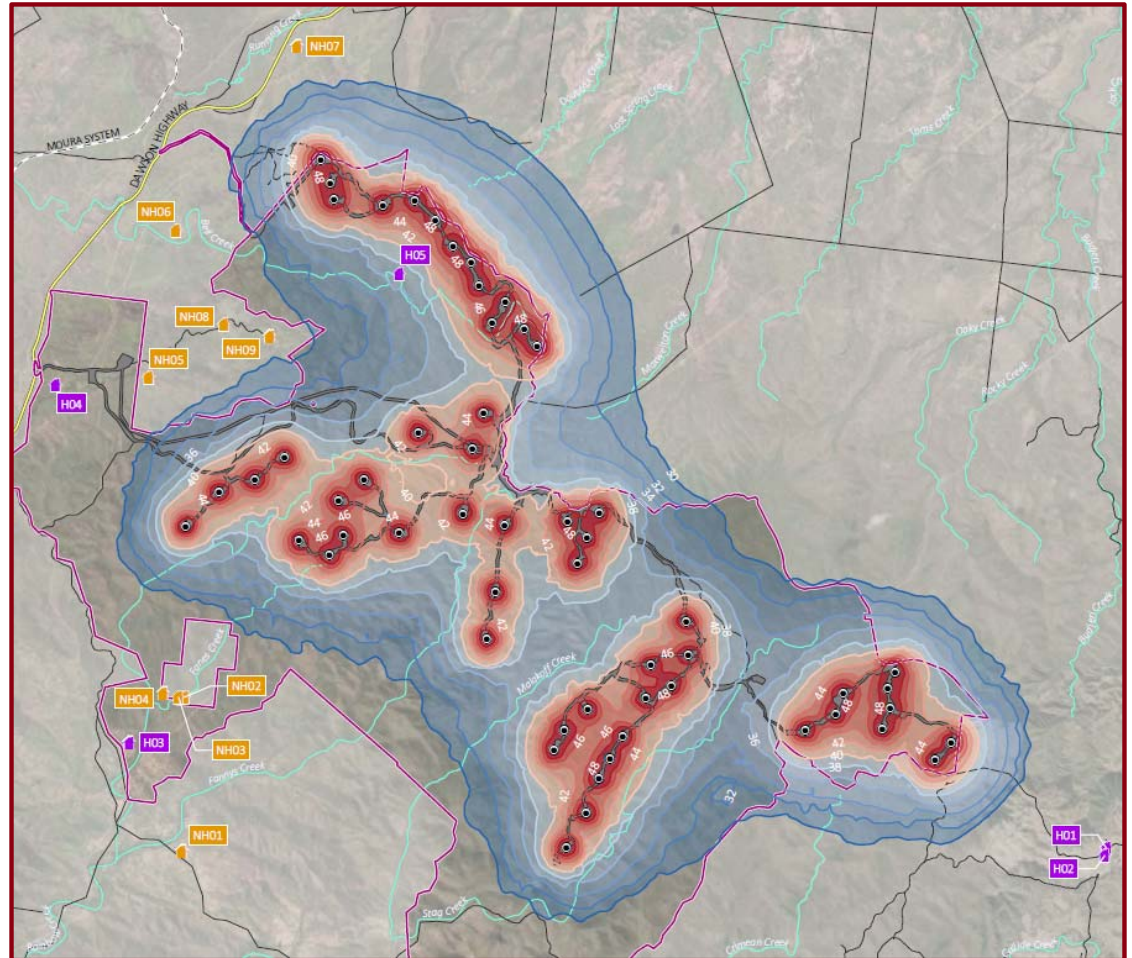
Transport

- Delivery of components along existing route from Port of Gladstone (~130 km).
 - Swept path analysis, large components: blades (83.5m length) and tower (6.3m diameter).
 - Feasible route with mitigation measures (Traffic Management Plan).
- Tower delivery requires diversion.
 - Moura Short Line Deep Creek Overpass of Dawson Highway height restriction 6.1m
 - Base tower diameter 6.3m
 - Diversion via Mount Alma Road and Calliope Station Road (with associated road upgrades).
 - Longer alternative identified (370 -380km) under investigation.
- Minor impact on road network
 - 15-250 vpd (peak) State Controlled Roads.
 - 214-284 vpa (Peak) Council roads.



Noise

- Noise assessment undertaken against criteria provided in State code 23.
 - Night-time (host): 45 dB(A) / background + 5 dB(A)
 - Night-time (non-host): 35 dB(A) / background + 5 dB(A)
 - Day-time (host): 37 dB(A)
 - Day-time (non-host): background + 5 dB(A)
- Predictive modelling indicates compliance at all host and non-host lots.
- Additional pre-construction modelling to be undertaken.



Carbon lifecycle

- Greenhouse gas (GHG) emissions from construction estimated at 610,000 t CO₂-e
 - Materials (steel, concrete)
 - Transportation (tower and blade from China, nacelle from Europe)
 - Vegetation clearing
- GHG reductions estimated at 362,000 t CO₂-e/year (for above project)
 - Replacement of energy produced from bituminous coal
- GHG emissions from construction fully offset by emission reductions generated by the wind farm within 1.7 years of operation.
- Ratio GHG reductions : GHG construction emissions estimated at 18:1

Socio-economic benefits

- ~\$0.75bn investment to engineer, procure and construct the project
 - Significant direct and indirect expenditure, value-add and household income in local, regional and Qld economy.
 - Preliminary analysis indicates \$100m-\$250m in direct and indirect expenditure in local economy during construction.
- 2 years of construction work
 - 250-350 jobs on site – civil/electrical, construction, admin, support etc..
 - Aim for local work force where possible.
- 25 + years of operation
 - 15-30 long term jobs for local people.
 - Mostly wind turbine technicians – electrical trade.
 - Landscaping, admin, support etc.
- 1.1 GWh/year of clean renewable energy in the Central REZ
 - Emission reductions ~ 0.4m t/CO_{2-e} per year
 - QAL Refinery 3.1m t/CO_{2-e}, Rio Tinto Yarwun 2.1m t/CO_{2-e}, APLNG 2.1m t/CO_{2-e}, etc
(Source: Clean Energy Regulator 2019-2020 Safeguard Facility Data)

Construction opportunities

- Electricians HV/ LV
- Engineers
- Heavy vehicle drivers
- Steel fixers, & Welders
- Riggers & Labourers
- Road constructors
- Crane operators
- Geotechnical testers
- Excavator operators
- Mechanical fitters
- Project managers
- Environmental officers
- Plumbers
- Fence builders
- Supervisory roles
- Surveyors
- Security Officers
- Landscapers & Gardeners
- Cleaners
- Maintenance staff
- Caterers
- Administration staff
- Safety officers
- Accommodation services

Operations opportunities (25+ years)

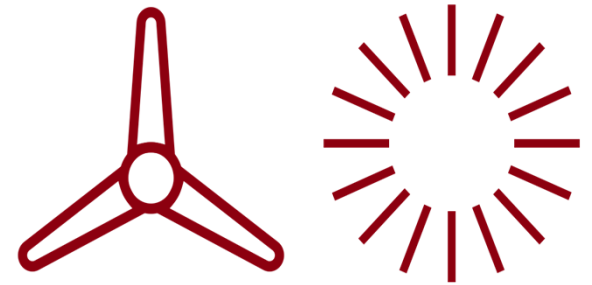
- Operations team remains with the project
- Wind turbine technicians
 - Electrical experience (typically)
 - Special training
 - 1 technician per 5-6 turbines
- Managers/admin
 - 2-3 depending on project size and ownership
- Landscaping
 - Ongoing offset and ecology management requirements
 - Rehabilitation
- Community liaison
 - Contact for any community concerns
- Total team 15-30
 - Living locally, or sourced locally

Next steps

- Quarter 1 to Quarter 2 2022
 - Feedback from Community Information Session
 - Public exhibition of Preliminary Document Report
 - Commence baseline socio-economic assessment and local procurement policy
- Quarter 3 2022 to Quarter 2 2023 (pre-construction activities)
 - Completion of Final Development activities (Commonwealth approval, grid connection)
 - Commence pre-construction activities (detailed design, secondary approvals, management plans)
 - Final investment decision to proceed with construction
- Mid 2023* construction (24-30 months)

* Indicative, subject to completion of previous stages

Questions



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Thank you

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