



**ARK ENERGY**

# **Boomer Green Energy Hub**

## **Community Information Sessions**

**Duaringa - 4-6pm Wednesday, 28 February 2024**

**Marlborough – 4-6pm Thursday, 29 February 2024**

# Acknowledgement of Country

We acknowledge 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 and present.



# Introductions

---

## Ark Energy

- Damian Vermey, Project Director
- Jane Jackson, Project Manager
- Lewis McKee, Project & Stakeholder Engagement Coordinator
- Trina Jensen, Senior Project Manager
- Melissa Pisani, Communications & Stakeholder Relations

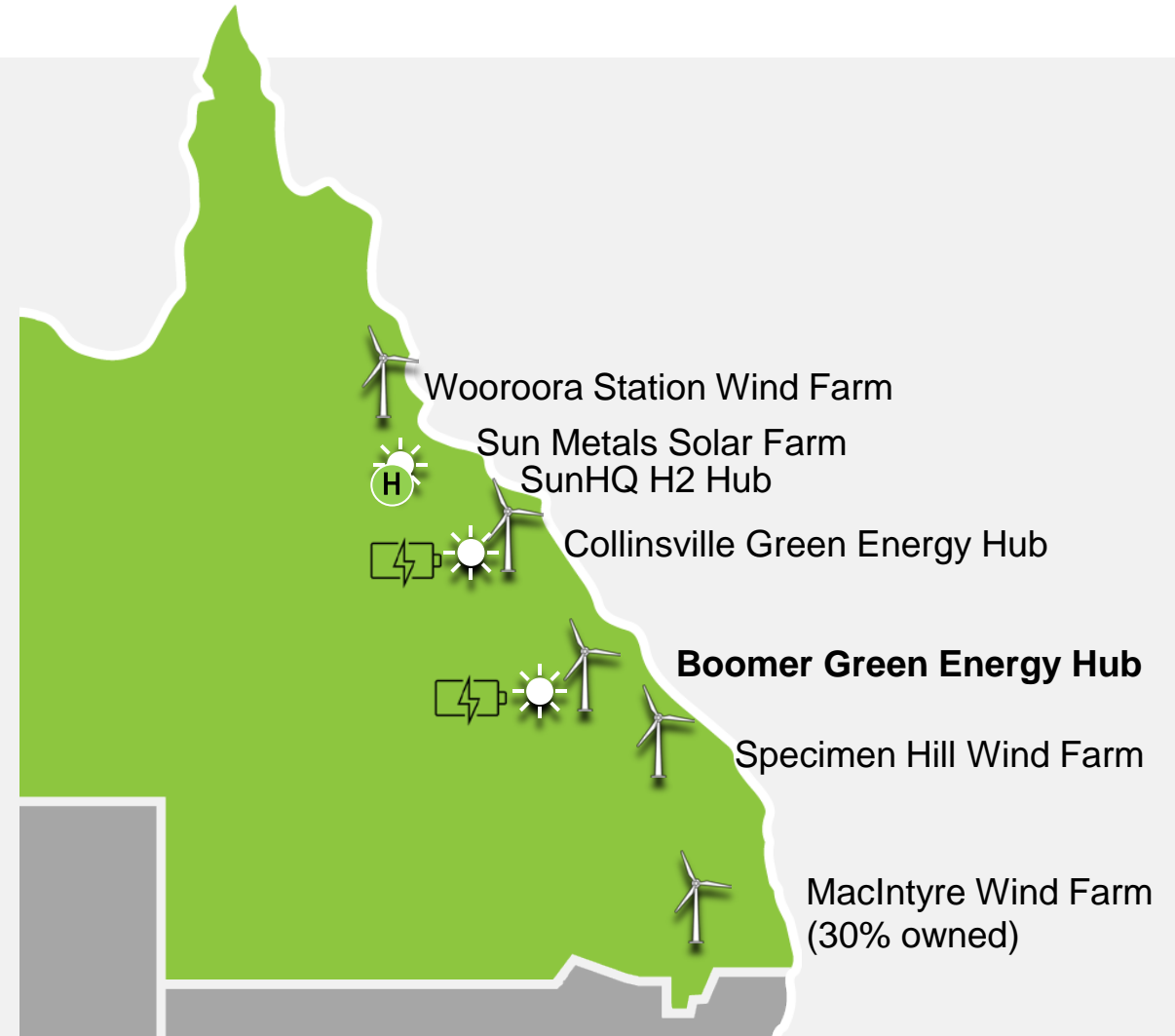
## Specialist Consultants

- Jason Richard, Attexo



# Ark Energy

- Specialising in utility-scale wind, solar and hydrogen. 20+ yrs experience in Aus. Projects across Qld, NSW, Tas.
- Corporate offices in Brisbane, Townsville, Sydney. Regional offices/info centres in Rockhampton, Collinsville.
- Subsidiary of Korea Zinc, largest zinc producer and first major refiner to commit to RE100 and powering global operations from 100% clean energy by 2050.
- 25-year history in Nth Qld through sister company Sun Metals, Townsville.
- Goal to decarbonise the energy supply of Korea Zinc and other third-party customers.



# Energy transition

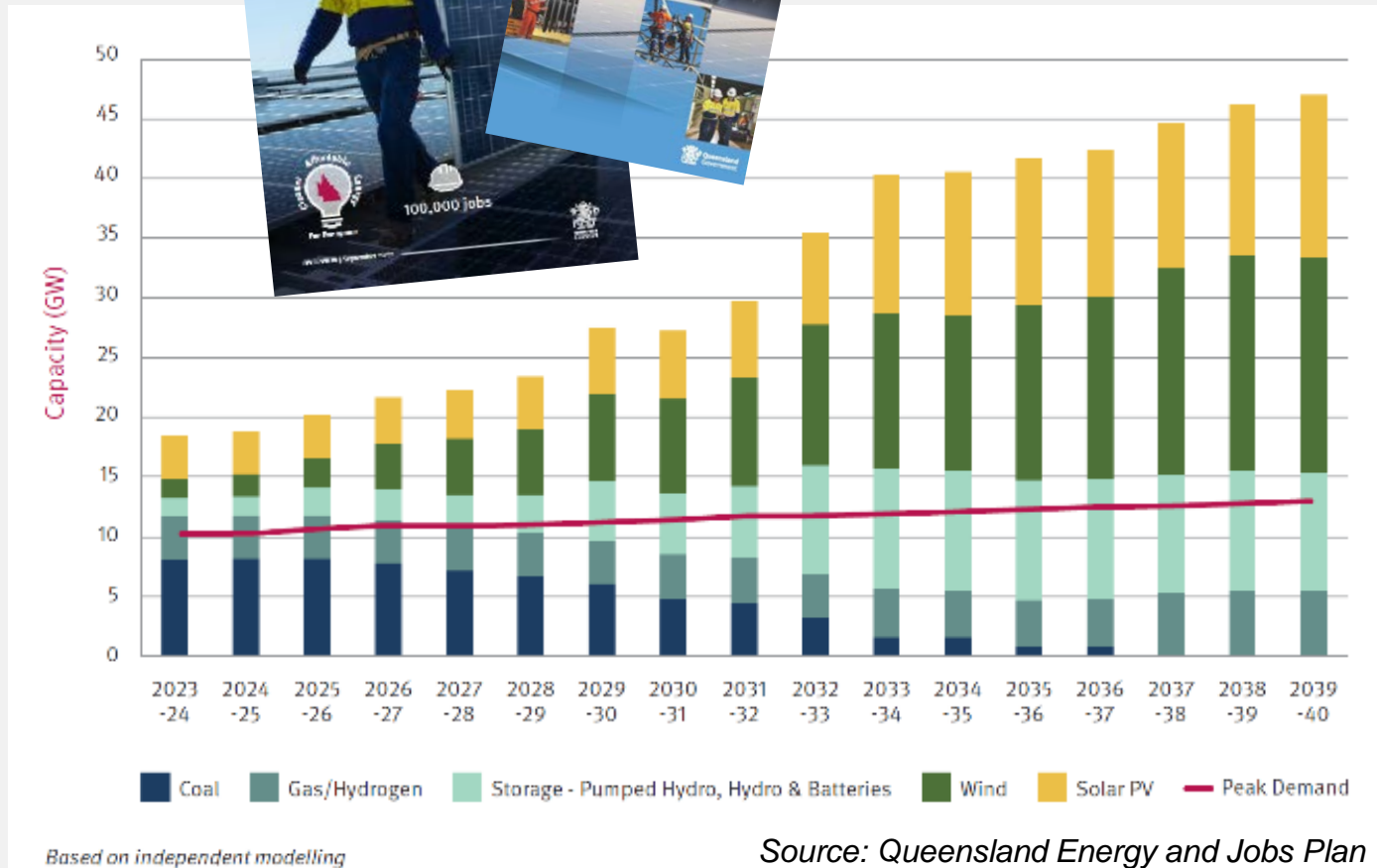
Australian Energy Market Operator's Draft 2024 Integrated System Plan - 'Step-change scenario' predicts:

- Coal out of the National Electricity Market by 2038.
- 6 GW new RE generation required each year for the next decade.
- 57 GW VRE and 19 GW battery storage required by 2030.

Queensland Energy and Jobs Plan renewable energy targets:

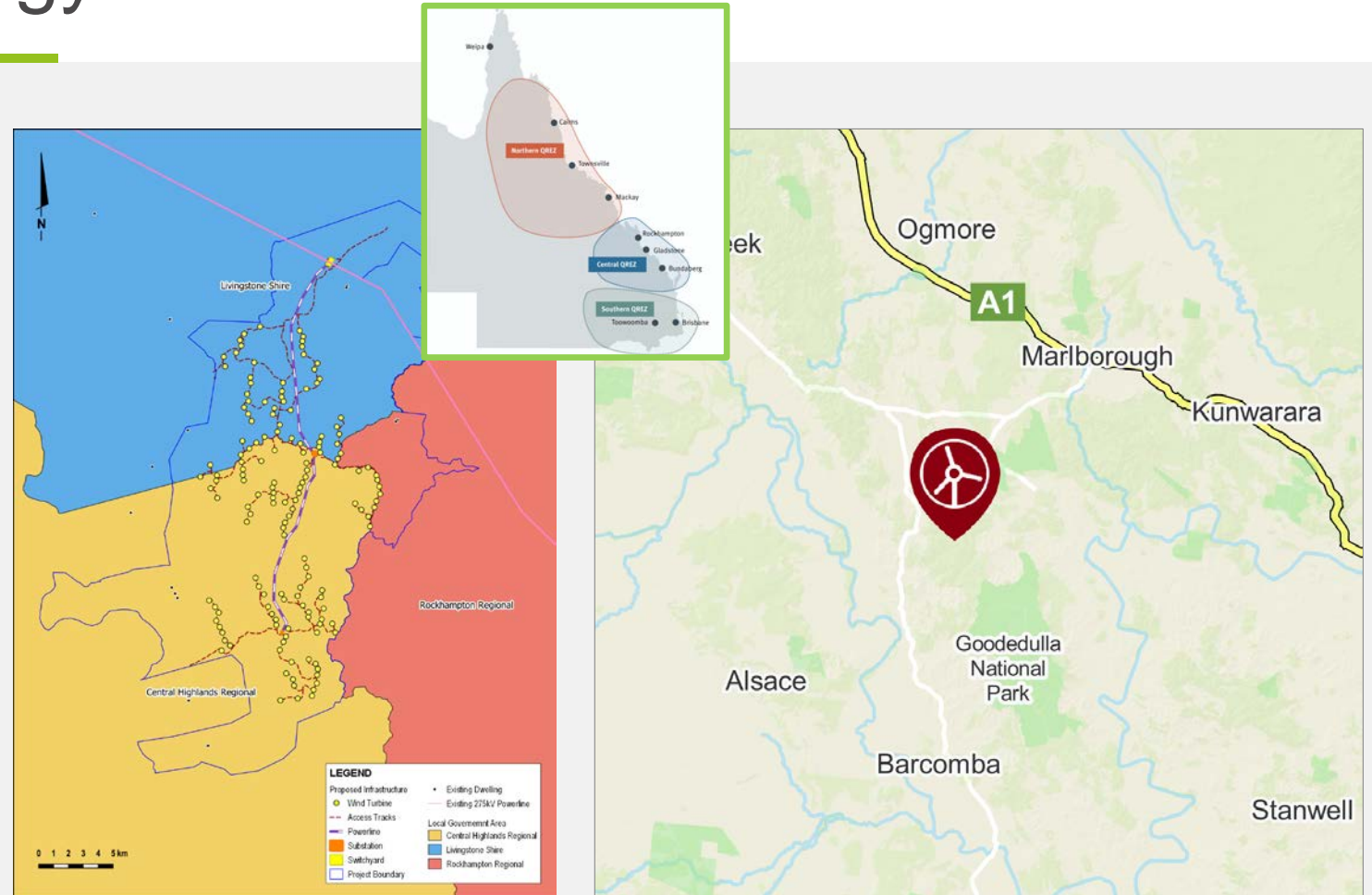
- 50% by 2030; 70% by 2032; 80% by 2035 incl. 25 GW of large-scale wind and solar, net zero by 2050.

Requires speed and scale



# Boomer Green Energy Hub

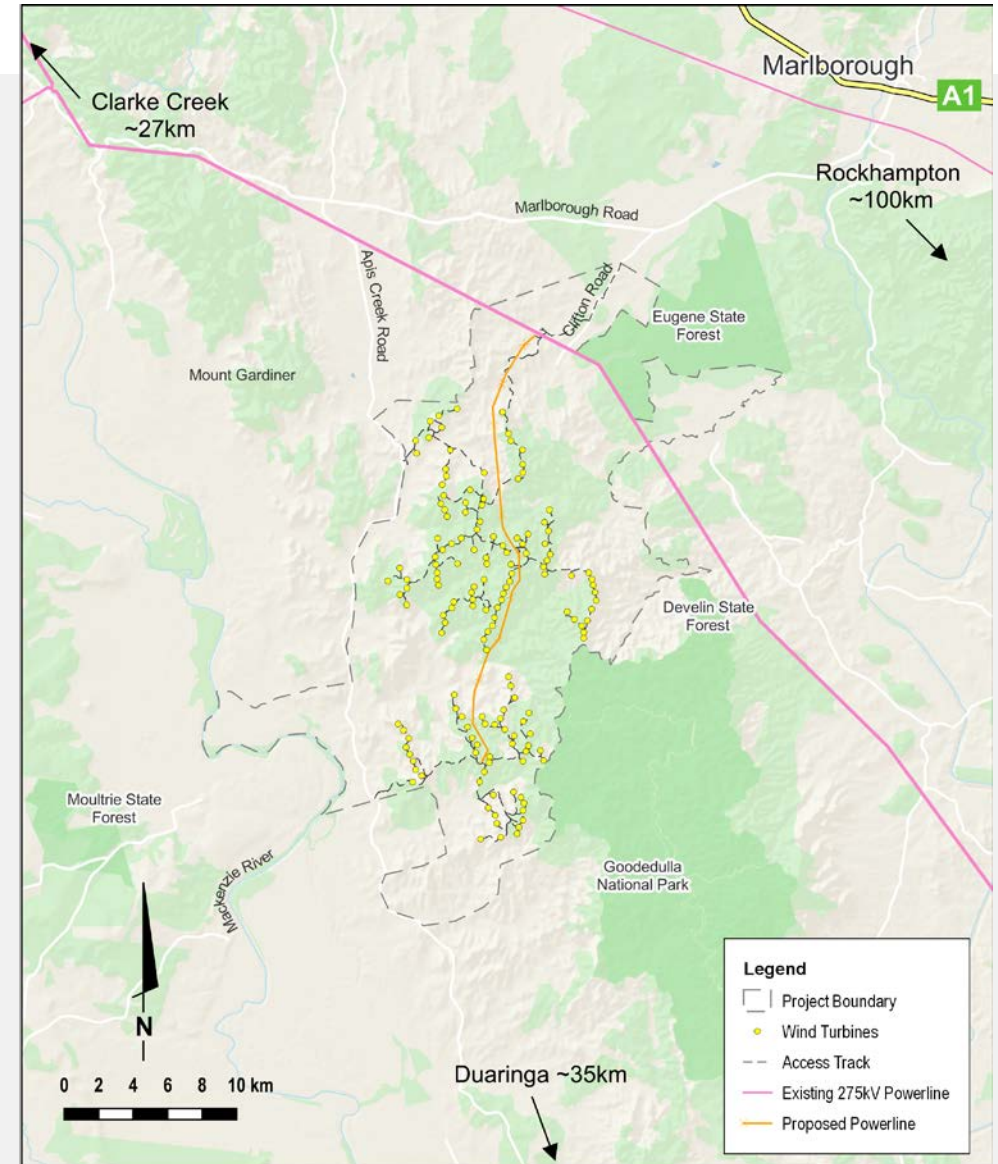
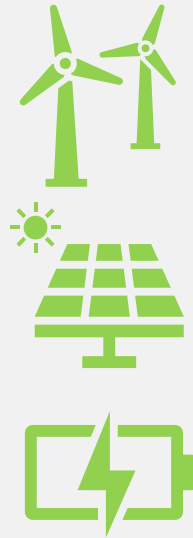
- Privately owned pastoral properties ~100 km north-west of Rockhampton and ~30 km south-west of Marlborough.
- Within Central Queensland Renewable Energy Zone.
- Three LGAs - Central Highlands Regional Council, Livingstone Shire Council, Rockhampton Regional Council.





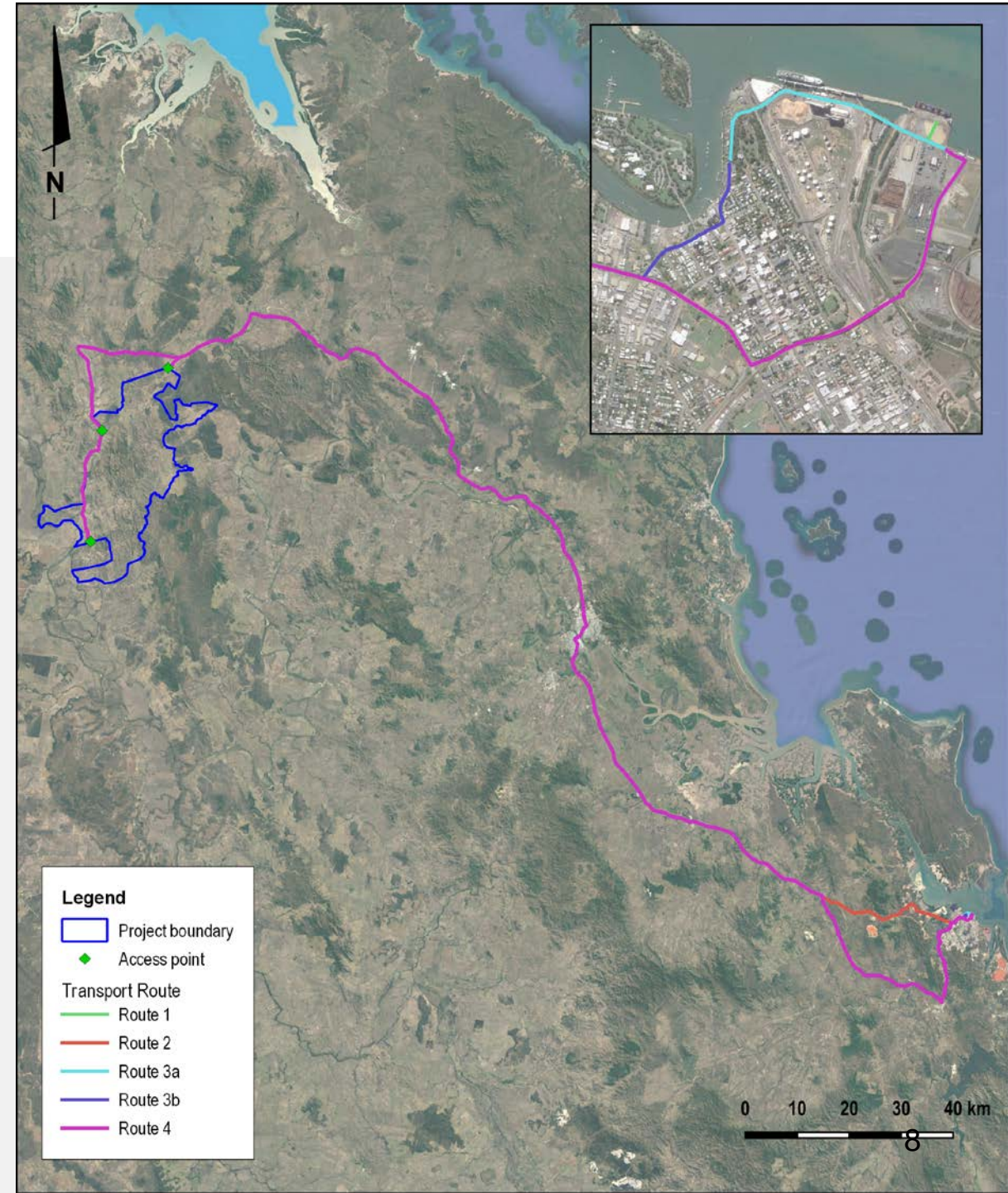
# Boomer Green Energy Hub

- ~150 wind turbines; potential solar >500 MWac; BESS opportunity, 500 MW / 1,000 MWh modelled. ~ 1 GW.
- Grid connection - two Powerlink 275kV transmission lines.
- **Build, own operate.**
- Investment of ~\$3 billion.
- Estimated to generate >\$500M in local and regional expenditure.
- Estimated to create 350+ jobs during construction and ~20 full time jobs during operation.



# Transport route

- Transportation via Port of Gladstone or Port of Mackay under assessment.
- Port of Gladstone accommodating current wind farm projects.
- Larger components (longer than 89m) may be transported via Duaringa.





# Component examples



**Access tracks:**  
5.5m crest width; wider toe width required for cut / fill batters; drainage and erosion control; buried cabling.



**Tower foundations:**  
~800m<sup>3</sup> concrete.



**Hardstands -**  
crane assist pad, high / large equipment; laydown area (blades, tower, nacelle etc.); 1.5 -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.



# State assessment

---

- State Assessment and Referral Agency (SARA) assesses wind component under *State code 23 – wind farm development* and *State code 16 – native vegetation clearing*.
- Rigorous technical studies and preliminary management plans, including:
  - Ecology, environmental offsets, rehabilitation
  - Landscape and visual amenity
  - Electromagnetic interference
  - Aviation impacts
  - Noise and shadow flicker
  - Traffic and transport
  - Stormwater management, erosion and sediment control
- Target to submit draft Ecological Assessment Report to SARA later this year.



# Commonwealth assessment

---

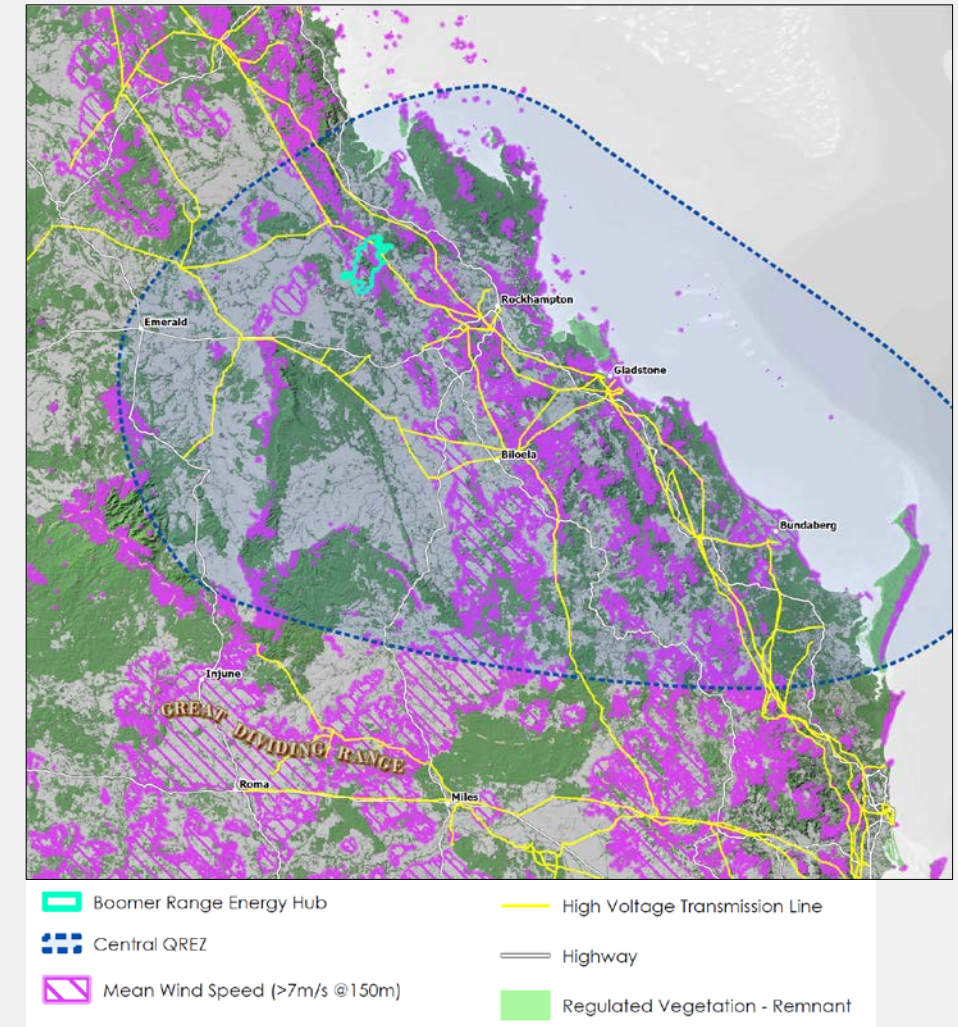
- Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) submitted in December 2022 (Ref 2022/09396).
- DCCEEW determined a controlled action with the following controlling provisions:
  - Listed threatened species and communities
  - Listed migratory species
  - Great Barrier Reef Marine Park, GBR World Heritage property, GBR National Heritage place.
- Assessment by Environmental Impact Statement (EIS).
- Final Guidelines for the EIS issued in May 2023.
  
- Target to submit Draft EIS to DCCEEW later this year.





# Resource availability + responsible development

- Challenge - wind resource located along Great Dividing Range ridgelines. Overlap with vegetation = habitat.
- Maximum extent achievable: avoid, minimise, mitigate.
- Consult with stakeholders - workshop solutions.
- Find workable compromises with meaningful benefit.
- Invest in strategies and commitments for repair i.e. rehabilitation.
- Strategic offsets with active management regimes - weed, fire, feral pest control - to improve habitat values.
- Potential to improve water quality in GBR catchment.
- **Opportunity and focus: nature positive**





# Work in progress

- Resource monitoring - ongoing
- Cultural heritage surveys and engagement with Traditional Owners, Barada Kabalbara Yetimarala Peoples.
- Ecology surveys
- Technical studies
- Civil and electrical design
- Consultation: community and stakeholders.



# Ecology – work to date

---

- **Vegetation** – surveys across multiple seasons (autumn 2022, spring 2022, spring 2023), 803 survey sites in total.
- **Fauna** – surveys in winter and spring 2022, targeted surveys in winter and spring 2023. Methods have included habitat assessments, camera trapping, passive acoustic detection of microbats, harp-trapping, spotlighting and call playback, koala BKSS, active searches for reptiles.
- **Bird and bat utilisation surveys (BBUS)** - eight seasonal BBUS required under State Code 23 and EIS Guidelines. Six seasonal BBUS completed in autumn and spring 2022, autumn, winter and spring 2023, and in February 2024. Collision risk modelling will also be undertaken on completion of the final BBUS.
- **Aquatic ecology** - Aquatic ecology assessment and water quality sampling undertaken in July 2023 (late wet season) and November 2023 (early wet season). Great Barrier Reef is a controlling provision (approximately 100km downstream of the project area).





# Findings - vegetation

---

- Most common vegetation community within the project area is a woodland community dominated by a mix of narrow-leaved ironbark (*Eucalyptus crebra*) with a subcanopy of rosewood (*Acacia rhodoxylon*) that occurs on slopes and ridges of hills. This corresponds to Regional Ecosystem (RE) 11.11.1 which is listed as Least Concern under the *Vegetation Management Act 1999*.
- Other predominant vegetation communities include narrow-leaved ironbark woodland associated with RE 11.11.4 and narrow-leaved ironbark and variable-barked bloodwood (*Corymbia erythrophloia*) woodland associated with 11.12.1, both also listed as Least Concern.
- None of those vegetation communities are listed as Threatened Ecological Communities (TECs) under the EPBC Act.
- Riparian corridors occur throughout the central and southern parts of the project area and are dominated by forest red gum (*E. tereticornis*), river sheoak (*Casuarina cunninghamiana*), paperbark (*Melaleuca* spp.) fringing woodland associated with RE 11.3.25. Although this community is listed as Least Concern, black ironbox (*Eucalyptus raveretiana*) is associated with this riparian vegetation community and is listed as Vulnerable under the EPBC Act.



# Findings – MNES flora and fauna species

## Flora

- Black ironbox (*Eucalyptus raveretiana*) listed as Vulnerable. Found within the site boundary but not within the project area – no anticipated impact.
- Two listed threatened cycads recorded, *Cycas terryana*, NC Act Vulnerable – small number of individuals may need to be translocated, *Cycas megacarpa* listed as Endangered under the EPBC Act (and NC Act). Found within the site boundary but not within the project area – no anticipated impact.

## Fauna and birds

- Greater glider (*Petauroides Volans*) listed as Endangered. Within the project area.
- Koala (*Phascolarctos cinereus*) listed as Endangered. One found within the site boundary but not within the project area.
- Squatter pigeon (*Geophaps scripta scripta*) listed as Vulnerable. Within the project area.
- White-throated needle tail (*Hirundapus caudacutus*) listed as Vulnerable and Migratory. Within the project area.
- Rufous fantail (*Rhipidura rufifrons*) listed as Migratory. Within the site boundary.
- Oriental cuckoo (*Cuculus optatus*) listed as Migratory. Within the site boundary.





# Design iterations and EIS plans

---

- Results of the field surveys have led to significant design changes, including the relocation of a number of project facilities to avoid sensitive habitats for key listed threatened fauna.
- The EIS will detail how the mitigation hierarchy has been applied to each protected matter known or likely to occur within the project area.
- The following preliminary plans are being developed as part of the EIS:
  - Over-arching Environmental Management Plan
  - Bird and Bat Management Plan
  - Fauna Management Plan
  - Vegetation Management Plan
  - Weed and Pest Management Plan
  - Rehabilitation Plan
  - Sediment and Erosion Management Plan
  - Offset Strategy
  - Surface Water Quality and Great Barrier Reef Assessment
  - Carbon Lifecycle Assessment
  - Socio-Economic Assessment

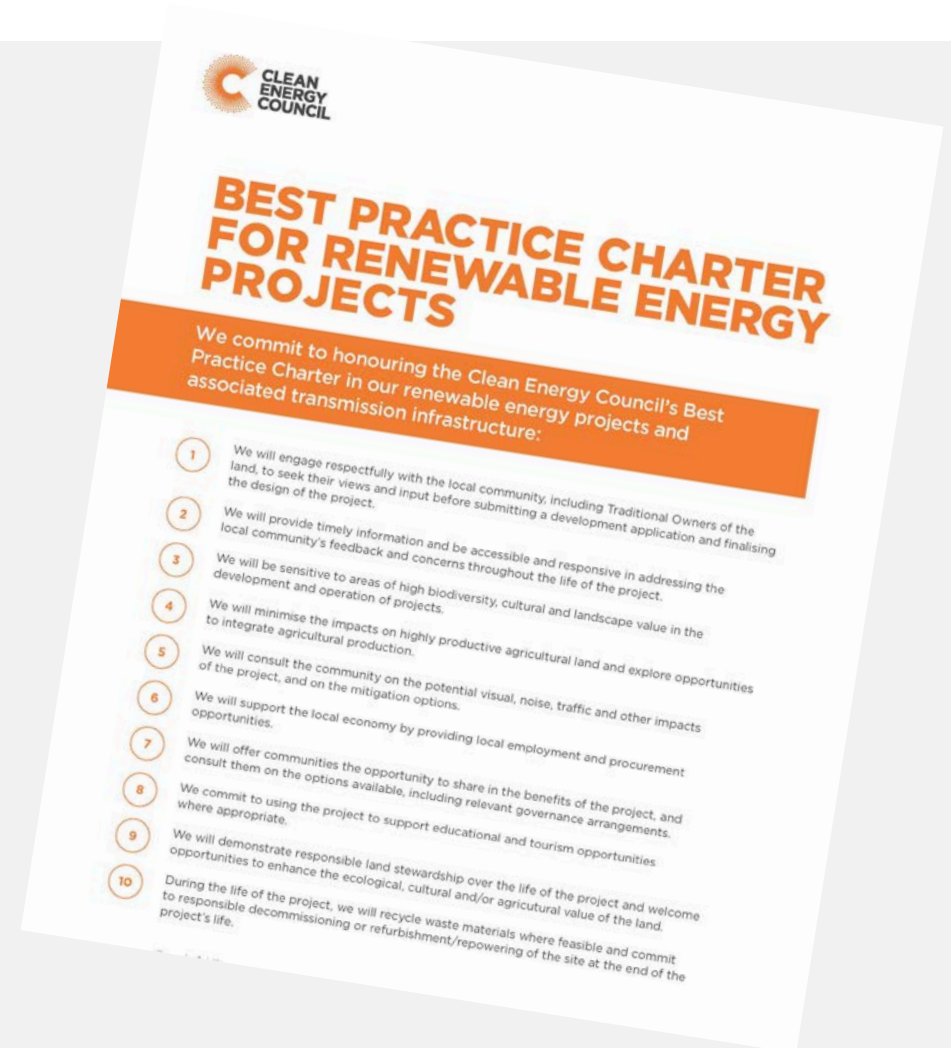


# Ark Energy approach - consultation

- Guided by International Association for Public Participation (IAP2).
- Signatory to the Clean Energy Council's *Best Practice Charter for Renewable Energy Projects*.
- Open, accessible, responsive, transparent.

## Focused on:

- Providing opportunities for interested community members and stakeholders to participate.
- Maximising opportunities for the local / regional community to benefit in meaningful ways.



# Ark Energy approach - local procurement

---

- Ark Energy is committed to maximising the local benefits and opportunities of its projects, and providing full, fair and reasonable opportunity for local participation.
- This includes:
  - Working with government, industry bodies and local communities to improve local industry participation and capabilities.
  - Ensuring existing local capabilities are considered when planning work scope.
  - Optimising opportunities for local businesses.
  - Employment of local personnel.
- Dedicated procurement team: [procurement@arkenergy.com.au](mailto:procurement@arkenergy.com.au)



# Ark Energy approach - First Nations participation

---

- Ark Energy recognises the continuing connection that Aboriginal and Torres Strait Islander Peoples have to their land and Traditional Custodians are important project stakeholders.
- Committed to agreements that provide meaningful benefits for Traditional Owners (Boomer Green Energy Hub project area is Barada Kabalbara Yetimarala Peoples country).
- Work hard to develop long-term, positive relationships.
- Committed to engagement and creating opportunities for First Nations peoples and businesses generally to support growth and development.
- Engagement and employment opportunities tailored to each project.





# Community engagement

---

- Boomer Green Energy Hub Office & Information Centre: 1/24 William St, Rockhampton.
- Councils - Central Highlands Regional Council, Livingstone Shire Council, Rockhampton Regional Council and Advance Rockhampton.
- NGOs – eg Capricorn Conservation Council, Fitzroy Basin Association, Capricornia Catchments.
- Elected representatives – Hon Michelle Landry, MP.
- Business networks and industry events.



# Community 2023

Duaringa State School P&C Golf Day Fundraiser; official opening of the Boomer Green Energy Hub office and information centre; Rockhampton Energy Forum; Greater Whitsundays Regional Projects Forum in Mackay; Advance Rockhampton's Meet the Proponent.



# Other topics of interest

---

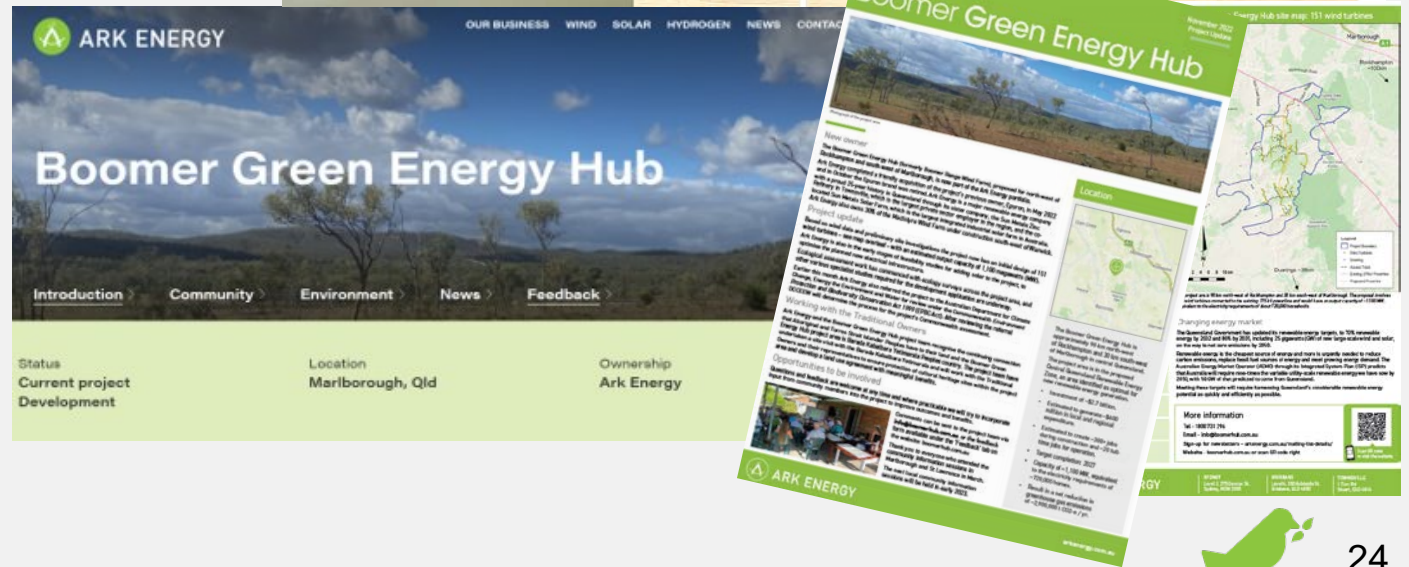
- Fire management and safety
- Erosion and sediment control
- Landscape and visual impact
- Noise
- Construction traffic
- Water usage
- Workforce accommodation
- Recycling and decommissioning
- Community benefits





# Information, consultation

- Website with feedback form: [www.boomerhub.com.au](http://www.boomerhub.com.au)
- Newsletters – by email and mail.
- Information centre in Rockhampton.
- Anytime - [info@boomerhub.com.au](mailto:info@boomerhub.com.au), 1800 731 296.
- Briefings / meetings.
- Public information sessions.
- Community consultative group (to be formed).





# Key benefits

---

- Investment of ~\$3 billion.
- Generate significant economic activity across the Central Highlands Regional, Rockhampton Regional and Livingstone Shire LGAs:
  - Estimated to generate >\$500M in local and regional expenditure.
  - 350+ jobs during construction and ~20 full time jobs during operation.
- Capacity of ~1 gigawatt (GW) of clean energy – reducing carbon emissions and putting downward pressure on electricity prices.
- Community benefit program from start of construction and for the life of the project.
- Net reduction in greenhouse gas emissions. Life cycle analysis indicates net positive after 1.7 years of operation, including component manufacture, construction and clearing.
- Opportunity of net gains for key species and biodiversity in the area.



# Next steps

---

- Resource monitoring – ongoing
- Environmental assessment work
- Cultural heritage work and ongoing engagement with Traditional Owners.
- Ongoing engagement with local community and stakeholders
- Form Community Consultative Group
- Civil and electrical design
- Dual ECI process with main contractors
- Geotechnical studies
- Progress grid connection

## Target dates

- Lodge DA (State) Q2 2024
- Lodge Draft EIS (Cwlth) Q2 2024
- Approvals end 2025
- Start of construction 2026
- Construction period ~3.5 years
- Construction completion 2029



# Questions

---



# Thank you

---

Boomer Green Energy Hub

T 1800 731 296

E [info@boomerhub.com.au](mailto:info@boomerhub.com.au)

W [boomerhub.com.au](http://boomerhub.com.au)

