



Building the NSW energy superhighway

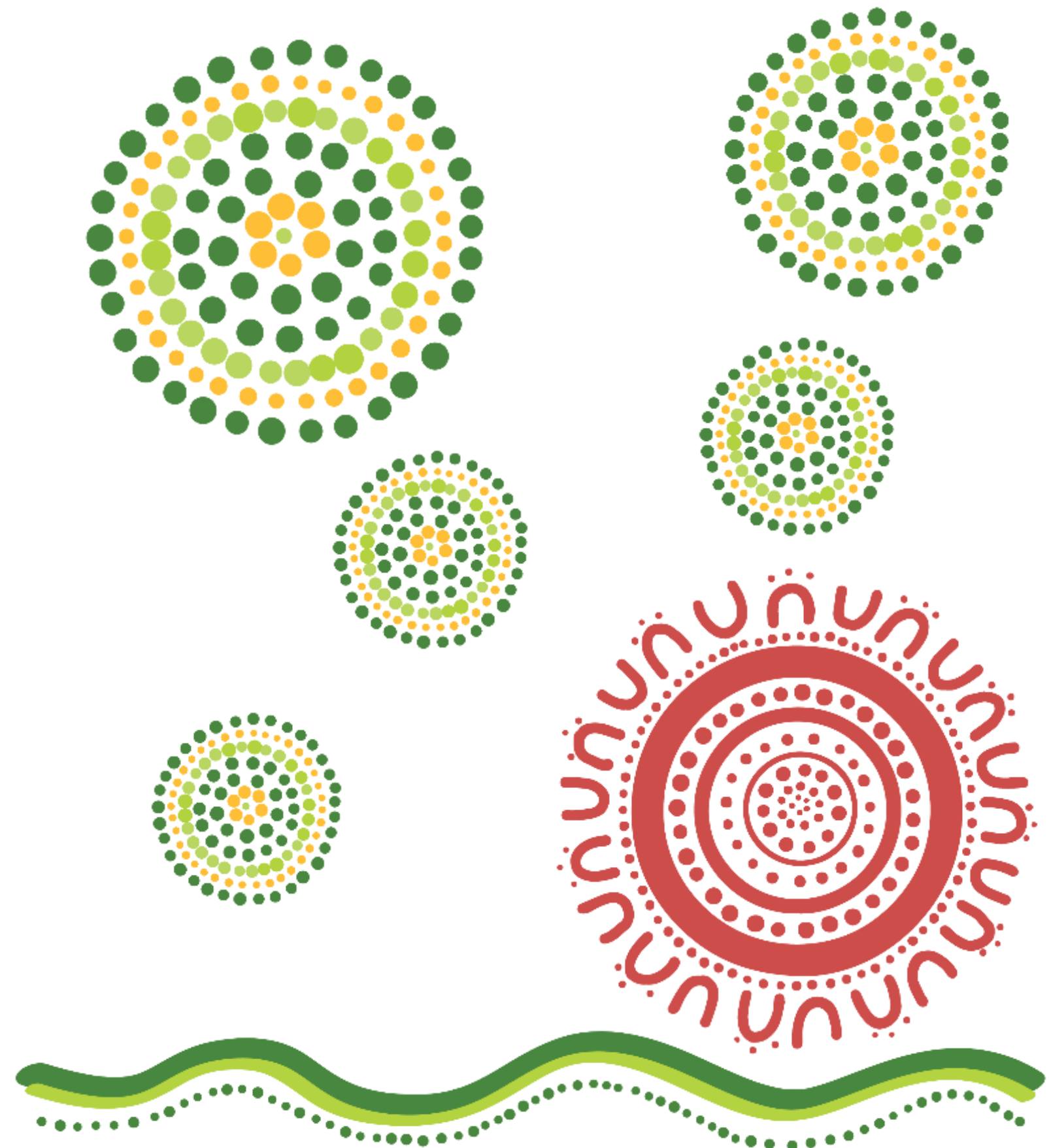
Jeremy Roberts
Project Director – HumeLink
Transgrid

People. Power. Possibilities.

Acknowledgement of Country

In the spirit of reconciliation Transgrid acknowledges the Traditional Custodians of the lands where we work, the lands we travel through and the places in which we live.

We pay respects to the people and the Elders past, present and emerging and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

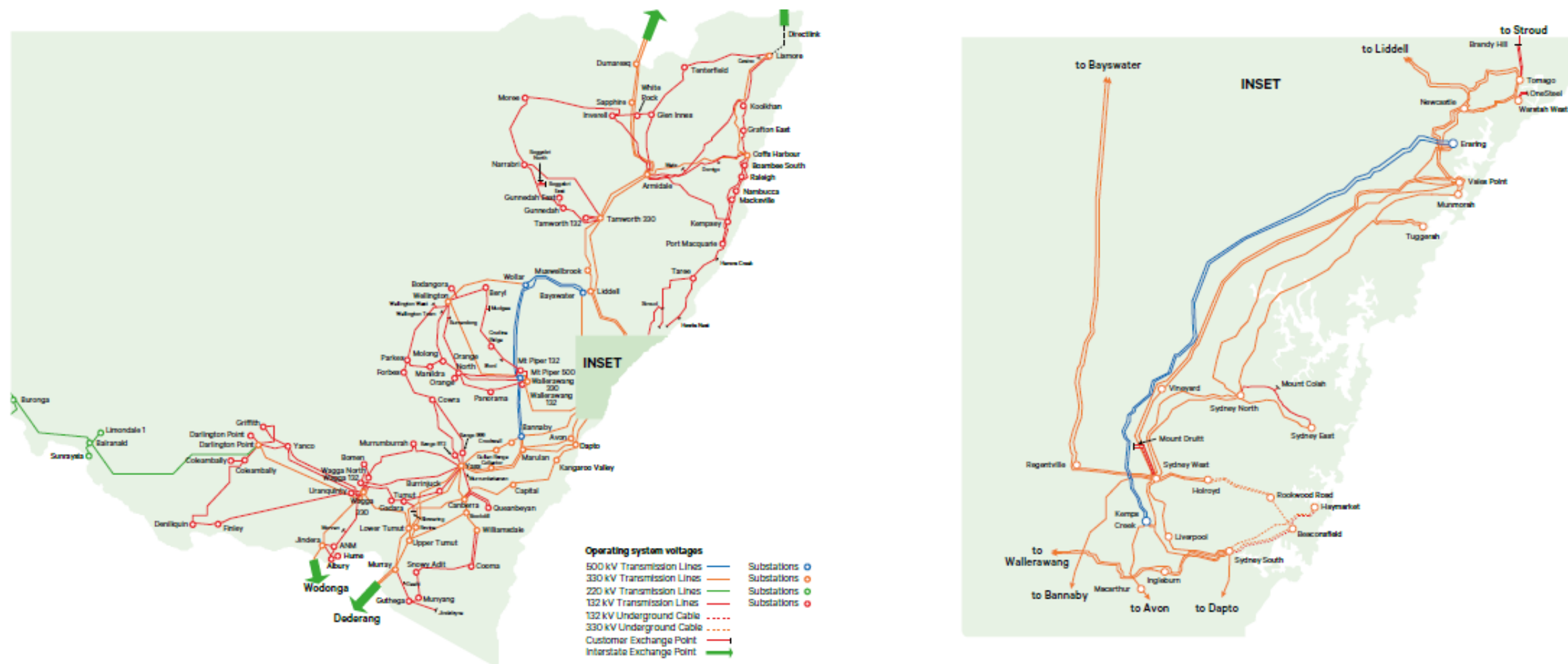


About Transgrid

Transgrid's network delivers a safe, reliable and affordable electricity supply to over 3.7 million households and businesses across NSW and the ACT.

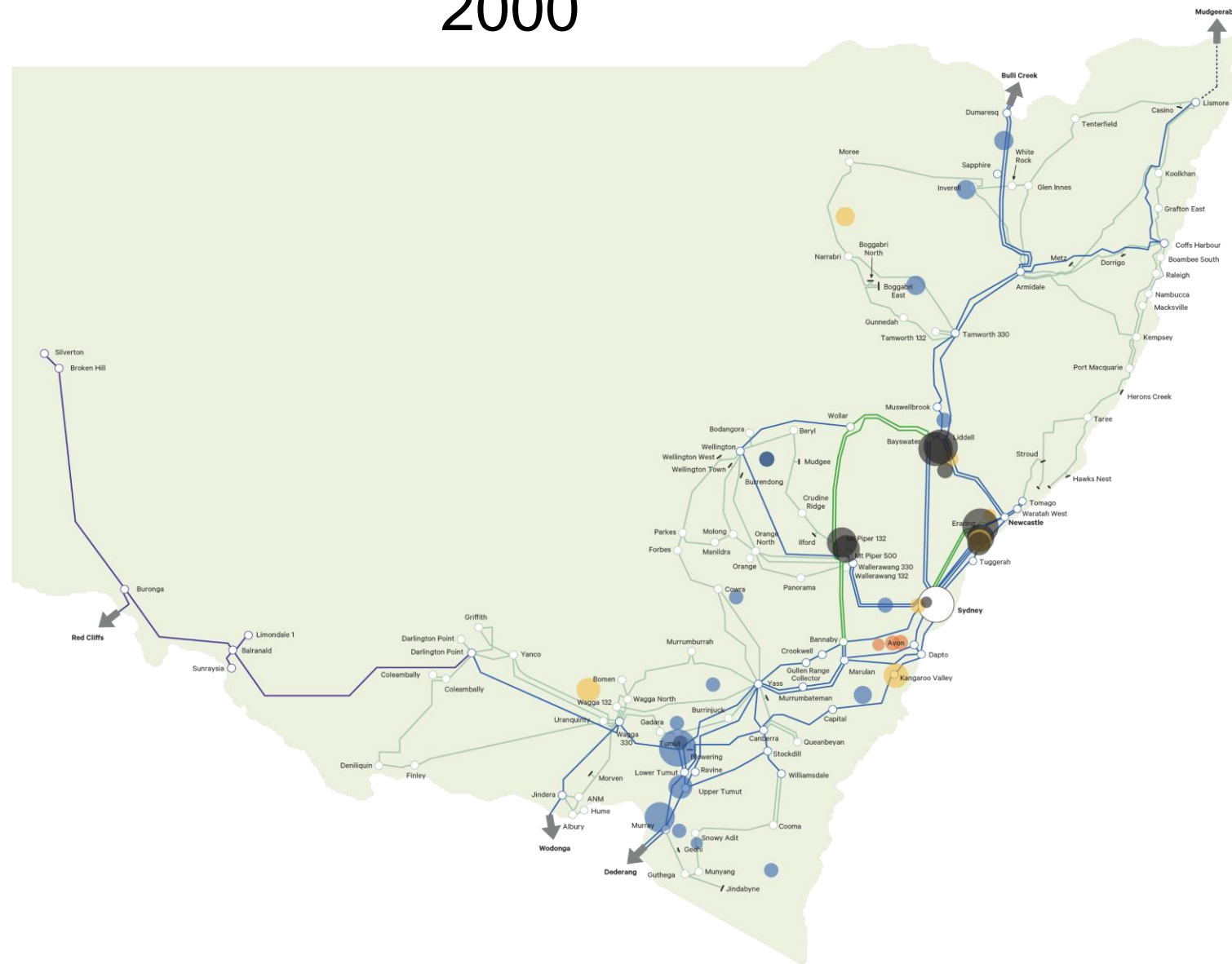
Comprising 121 substations, more than 13,051 kilometres of high voltage transmission lines, 109 kilometres of underground cables and five interconnections to QLD, Vic and soon SA, the Transgrid network is instrumental to the electricity system and economy, and facilitates energy trading between Australia's largest states.

Transgrid's electricity network map

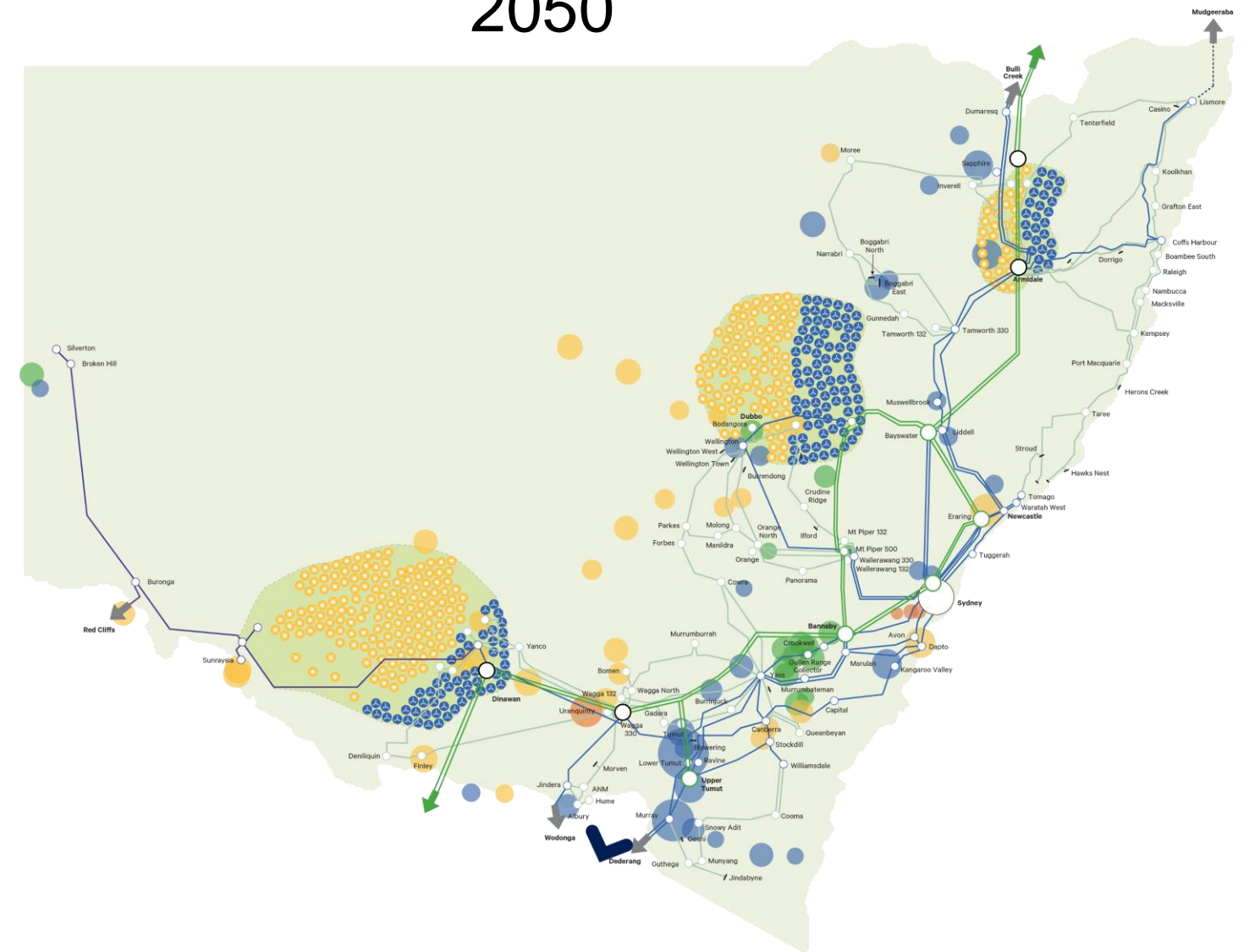


A green grid is fundamentally different

2000

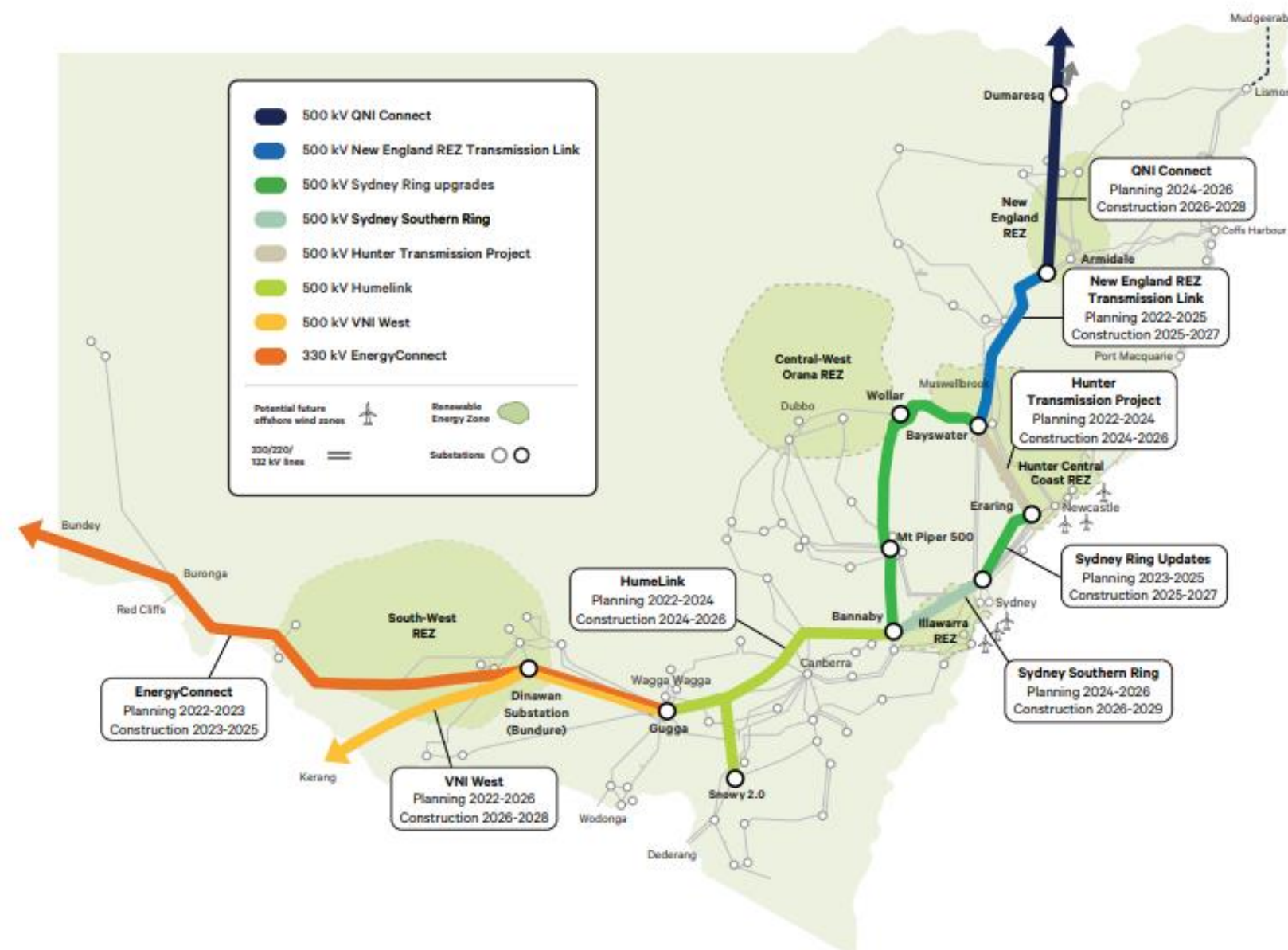


2050



Building the NSW Energy Superhighway

Transgrid is investing \$16.5 billion in transmission infrastructure in NSW over the next decade to create an energy superhighway, connecting new renewable generation to a strong and flexible network.

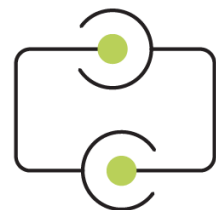


Trialling new technologies to provide system security services

Transgrid delivered the first large-scale grid battery in NSW at Wallgrove to trial a new source of system stability services



50MW/75MWh lithium-ion battery, constructed using Tesla Megapacks



Trial to evaluate technology capability to provide synthetic inertia for the **management of power system frequency**



Potentially lower cost than other alternatives such as synchronous condensers



Helps to **maintain system security** in NSW as coal generators retire or are unavailable

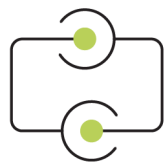


Unlocking capacity on the existing transmission network

Transgrid applied SmartValve units to deliver the Victoria-NSW Interconnector (VNI) upgrade without any new 'poles and wires' infrastructure.



170 MW of additional energy, to power 30,000 homes



no new transmission lines



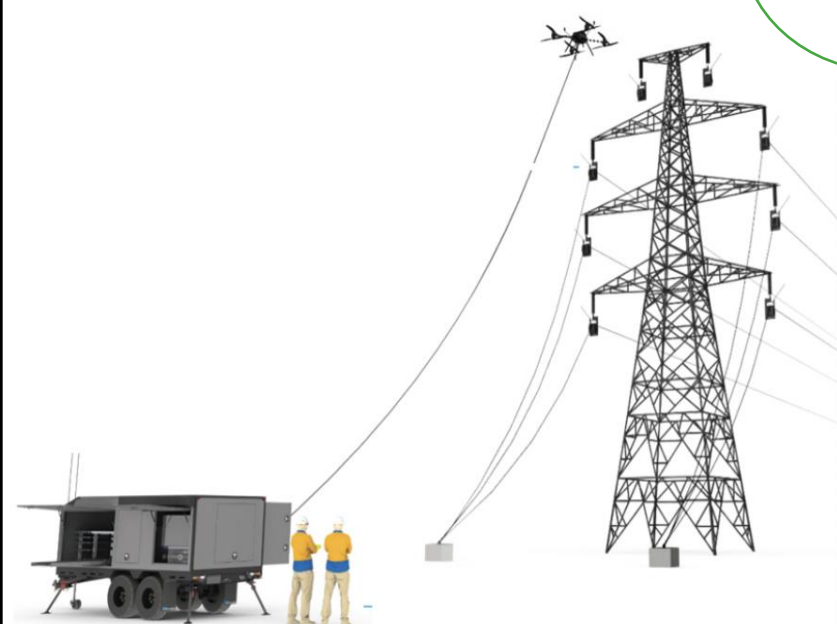
\$45 million



18 months execution



Innovative technologies



1 Reduced Safety Risk Profile

- Eliminates critical safety risks associated with helicopter stringing
- Reduced working at heights exposure
- Improved risk management in energised environments

2 Schedule Compression and Flexibility

- Pre-stringing provides stringing schedule compression.
- Rapidly scalable to meet changing productivity requirements.
- Reduced centreline clearing provides clearing and access schedule compression

3 Unlocking Workforce Capacity

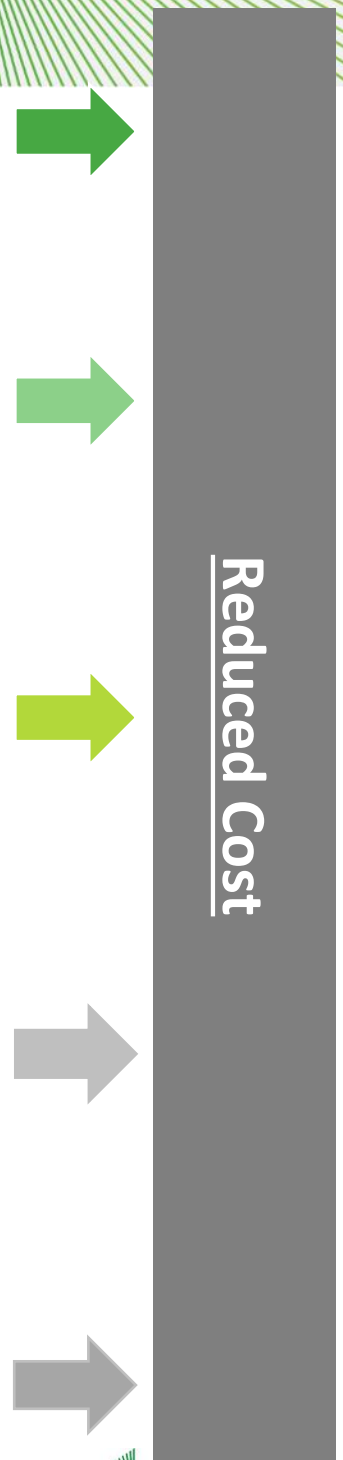
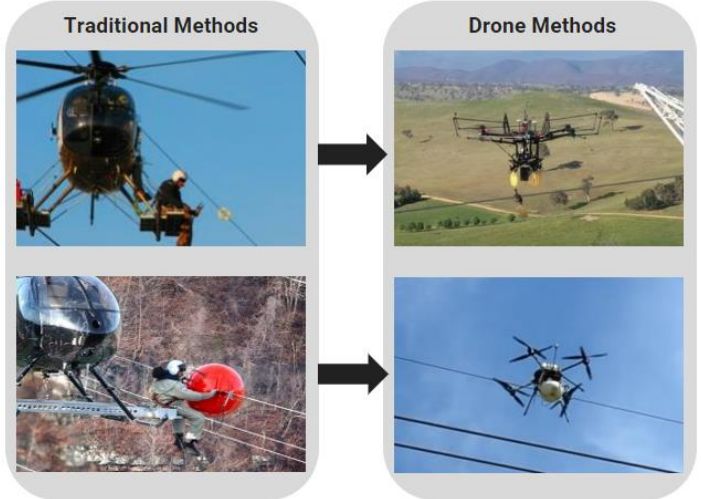
- Allows critical line workers to focus on activities requiring their certifications
- Ability to re-train existing workers and/or tap into new pools of talented resources

4 Improved Social License

- Reduction in centerline clearing requirement
- Reduced biosecurity risk profile
- Reduced disruption to heritage sites and communities

5 Certainty of Supply

- Guaranteed capacity and availability of services
- Ensures the benefits associated with drone stringing are realised



Jobs and skills in the regions

Clean Energy Training Centre:

A first-of-its-kind Clean Energy Training Centre in Wagga Wagga, NSW.

Partnership with Charles Sturt University, Thomson Bridge, and Ironbark Training.

- A one-stop, end-to-end training facility with an annual capability of:
 - more than 3,500 people receiving licence and competency based short courses
 - 150 trade qualifications at varying certificate and diploma levels.

Transgrid partnership with Charles Stuart University:

- \$2 million Engineering Scholarship Fund with Charles Sturt University.
- 100 scholarships from 2023 to 2029, valued at \$20,000 each for engineering students
- Developing regional career pathways for scholarship recipients through engineering cadet placements with Transgrid and other organisations across regional NSW.