

### Powering the future

EnergyConnect is a high voltage infrastructure project that involves 700kms of new transmission lines between the electrical grids of NSW, SA and VIC. Transmission lines connecting state grids are commonly referred to as interconnectors.

The interconnector is being built between the SA border and Wagga Wagga via Buronga with an additional line between Buronga and Red Cliffs, Victoria.

### EnergyConnect involves the construction of:

- A new double-circuit 330 kV transmission line from the SA border to the Buronga Substation approximately 135kms.
- A new double circuit 330 kV transmission line from the Buronga Substation to the Dinawan Substation approximately 376kms.
- A new double circuit 500 kV transmission line from Dinawan Substation to Wagga Wagga Substation approximately 176kms.
- A new double circuit 220 kV transmission line from Buronga Substation to the Red Cliffs Substation, Victoria approximately 24kms.

Along the project alignment there will be approximately 1,500 towers that differ in size and shape from self supporting structures to guyed towers (structures with a central steel column supported by four steel cables

or guyed wires). On average, the structures will be spaced 460 metres apart. Specialist teams are required to assemble and erect these towers. The guyed towers are preassembled in sections in offsite laydown areas and transported to tower sites by truck for final assembly. For the self supporting towers, laydown areas will be established along the project easement to enable workers using rough terrain cranes and telehandlers to position and bolt sections together.

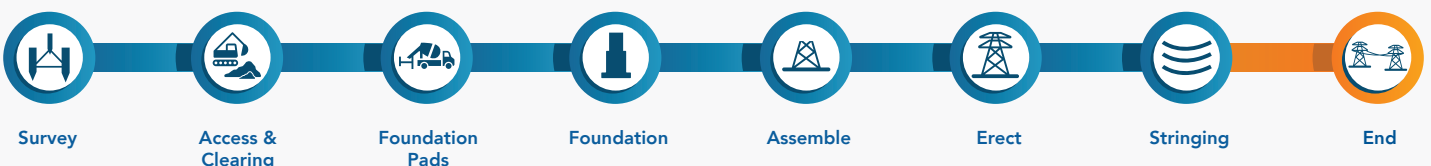
### What type of transmission towers will be used between Wagga Wagga and Dinawan?

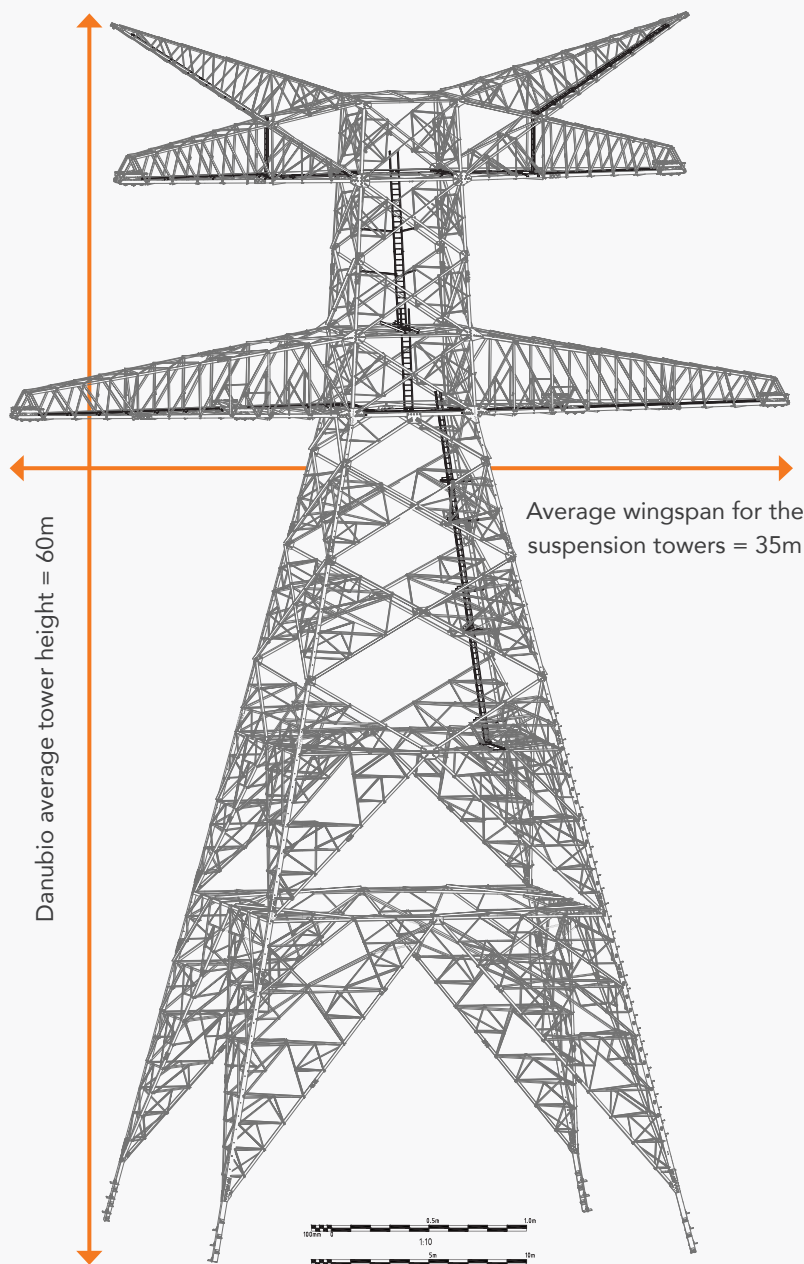
There are 334 towers between Wagga Wagga, NSW and Dinawan near Coleambally and the towers on this line will all be Danubio towers.

These tower types are necessary to support 500kv transmission lines and have a different structure to other towers. Most typical 500kv tower designs result in 80m+ towers, with three cross arms carrying six sets of conductor. The Danubio tower design only has two cross arms, with a wider bottom section holding four bundles of conductor. This allows the tower height to be reduced.

The Danubio towers are the same height as the towers along EnergyConnect’s western alignment with a maximum height of 65m.

### Tower Construction Sequence





## Danubio tower

The design of 500 kV transmission towers varies based on terrain and topography. The two most common types are:

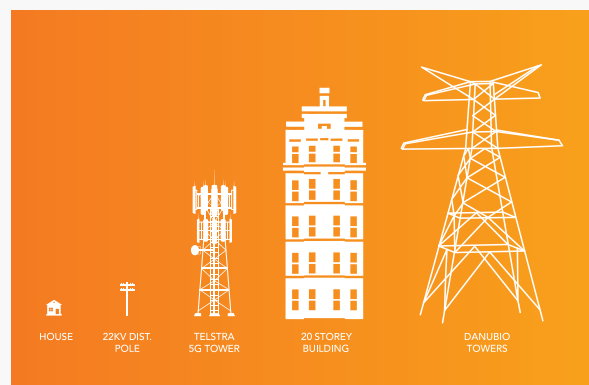
- Suspension towers - used to support the transmission conductors (also known as cables or wires). Their primary function is to keep the wires at a safe height above the ground and to support the weight of the cables across long spans.
- Tension/Angle towers – used as the anchoring points to connect and apply tension to the conductors. Tension towers are the first and last towers of long sections of conductors. This type of tower is also commonly used at road or railway crossings, and where there is a change of direction.

The Danubio is so called after the Danube tower that represents the widest spread tower typology in Europe. Its meaning suggests its “to set in motion, to flow.”

## Why are we using Danubio towers?

Project EnergyConnect is using Danubio towers because the structural strength of the Danubio tower design is required to carry the weight of the heavy quad 500 kV conductor bundles. This will enable the 500 kV infrastructure required to build this nation critical project, linking power between South Australia, Victoria and NSW.

- The average height of the Danubio tower is 60m with a weight of up to 60t for the Suspension towers and 80t for the Angle towers.
- The biggest wingspan on the Angle towers is 50m from tip to tip of the bottom cross arm.
- The design of the Danubio tower is more complex than other towers. These towers are heavier, resulting in longer assembly and erection times.



## Keep Updated on EnergyConnect

Elecnor Australia is committed to working with landowners and communities through the construction of EnergyConnect.

There are several ways to contact the project team. Contact the Project Community and Stakeholder Engagement Team on:

1800 49 06 66 (free call) [pec.community@elecnor.es](mailto:pec.community@elecnor.es)

[secureenergyjv.com.au/projects/energyconnect](http://secureenergyjv.com.au/projects/energyconnect)

Write to us at: Elecnor Australia 1/22 Edward Street, Wagga Wagga NSW 2650

Subscribe to our project e-newsletter at [www.transgrid.com.au/energyconnect](http://www.transgrid.com.au/energyconnect)

To provide any feedback on the way we engage visit [www.secureenergyjv.com.au/tell-us-what-you-think/](http://www.secureenergyjv.com.au/tell-us-what-you-think/)

