Fact Sheet | Clean Energy Link

Western Power Terminals

The Western Power network contains terminals which are the essential connection points for large-scale renewable energy generators, such as wind and solar farms.

These terminals enable the efficient flow of power in the transmission network.



What are terminals?

Terminals are critical components of an electricity network. They're like major intersections or junctions, managing the flow and voltage levels of electricity around the transmission network to keep the network stable and provide safe and reliable electricity supply. They:

1. **transform voltage for safe and efficient power delivery by** changing high-voltage electricity (such as 330,000 kilovolt or 330kV) received from energy generators to lower levels (such as 132,000 kilovolt or 132kV) suitable for transporting to substations via the transmission network. They also convert electricity to higher voltages for bulk transfer across long distances to large industrial consumers.
2. **enhance network reliability by** interconnecting multiple transmission lines, providing alternative power routes and ensuring a continuous power supply.

What does a terminal look like?

Terminals vary in size based on infrastructure required and are made up of the following:



Gantries

The most noticeable features of a terminal, they are tall, frame-like steel structures where high-voltage transmission lines connect to the station.



Transformers

Known as the 'heart of the station', are the large bulky metal equipment responsible for changing the electricity's voltage.



Switchgear and equipment

Carry out the primary functions including circuit breakers, disconnectors, earth switches, current transformers, voltage transformers and surge arrestors. These are used to disconnect, measure and divert power around the terminal to ensure electricity flows safely and reliably.



Insulators and conductors

Connect all the equipment and transmission lines within the terminal. Insulators are made of ceramic or glass and look like stacks of white or brown discs. They are crucial for preventing electricity from flowing to the ground.

Terminals also include:



Small buildings

Which house control equipment, monitoring systems, and other operational necessities.

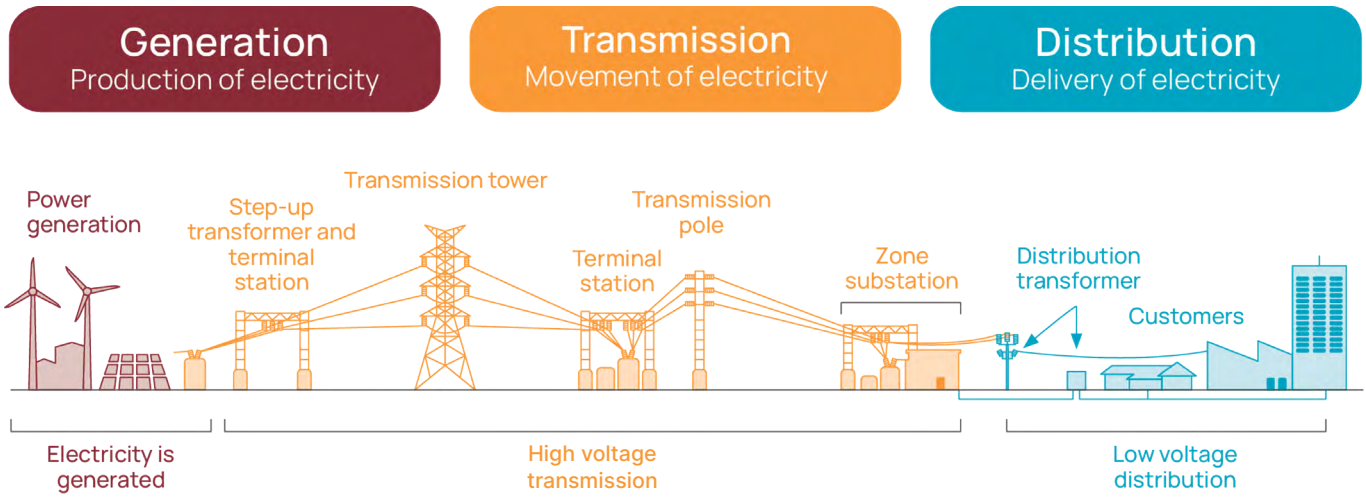


Security measures

To keep the high voltage electricity inside secured including locked gates, warning signs, terminal cameras and remote-controlled floodlights. You might also notice some landscaping around the perimeter to help them blend in with the surroundings.

WA's main electricity network has 29 terminals, you might have spotted one on your travels.

How electricity moves through WA's energy system



Energy networks are made up of different tiers of infrastructure, each with a distinct role. Transmission refers to energy infrastructure that carries high-voltage energy in bulk across long distances from generation sources to substations and industrial customers. In contrast, the distribution network handles the delivery of electricity, transforming it to a lower voltage suitable for use in our homes and businesses.

Frequently asked questions

How do you keep terminal stations safe?

Terminal stations contain high voltage electrical equipment and live electricity. They are secured within locked fences and are monitored by security devices.

Terminal stations are built to strict regulations set by Building and Energy.

Why are terminals lit up?

When terminals are operating at night, some level of lighting (maintained at low levels) is required for security purposes while minimising impacts on surrounding communities and landholders.

Do terminal stations create noise?

Terminal stations are designed to operate quietly and safely within communities. While some equipment inside the station, like power transformers or cooling systems, may produce a low humming sound, it's usually minimal and compliant with Noise Regulations.

How does Western Power ensure safety with regards to EMF?

Electric and Magnetic Fields (EMF) are carefully considered in the planning, location and operation of Western Power network assets and guided by Australian and international health in line with the Energy Network Australia EMF Management Handbook (www.energynetworks.com.au/resources/factsheets/emf-management-handbook).

How can you find out more?

Western Power is committed to delivering a safe, resilient and affordable electricity network to achieve our shared decarbonisation goals.

For more information regarding the Clean Energy Link program visit Western Power's website **westernpower.com.au** or email us at **cleanenergylink@westernpower.com.au.**

More information

Western Power is committed to working with local communities and stakeholders and we'll regularly share project information and updates.

To stay informed, sign up to receive project news.

www.westernpower.com.au

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