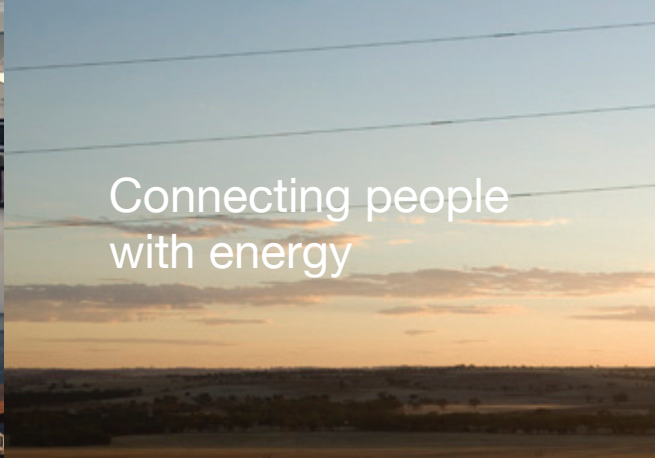


# Substations



Connecting people  
with energy

## What is a substation?

Substations form an important part of the electricity network. Substations 'step' or 'convert' power voltage up or down so that electricity can be delivered from power generators (very high voltages) through to your home, workplace and community (low voltages).

Each substation has a unique function and plays an important role in providing power throughout the network.

## There are three main types of substations across our network:

### Terminal substations

Terminal substations are the largest of the substations and are best located close to or within an area with high electricity requirements. They are generally located outside densely populated areas to accommodate the amount of land required, which is approximately 330 metres x 680 metres.

### Zone substations

Zone substations receive electricity from terminal or other zone substations and convert it to the lower voltages required for homes and businesses. It is important that zone substations are located close to the communities they serve so that they are able to deliver power efficiently.

### Distribution substations

Distribution substations are the smallest substations. They reduce the voltage down to a level usable by homes and businesses and supply a much smaller area than a zone substation - for example a few streets or even a single customer.

## Why do we need to have substations close to homes and businesses?

In a State that is continuing to develop and grow there is an increasing demand for electricity across the power network. As homes continue to use more power and industry, communities and businesses continue to grow, more substations will be required. Zone substations are likely to be in close proximity to suburban areas as these particular substations convert the power to the lower voltages necessary for transfer through to homes or offices.





Through the continued expansion and maintenance of Western Power's network, we are helping the State grow and fulfil its bright future.

## How do we choose a substation's location?

When planning any new infrastructure, sustainability is our central priority. It should meet the needs of current and future generations by considering environment protection, social advancement and economic prosperity in our business activities and decisions.

Once we have identified a number of potential sites within a suitable area, a preferred option is identified and put forward for the relevant internal and external approvals. We seek input into this process from our stakeholders, including the community.

For more information on substation site selection please visit [westernpower.com.au](http://westernpower.com.au)

## Working with the community

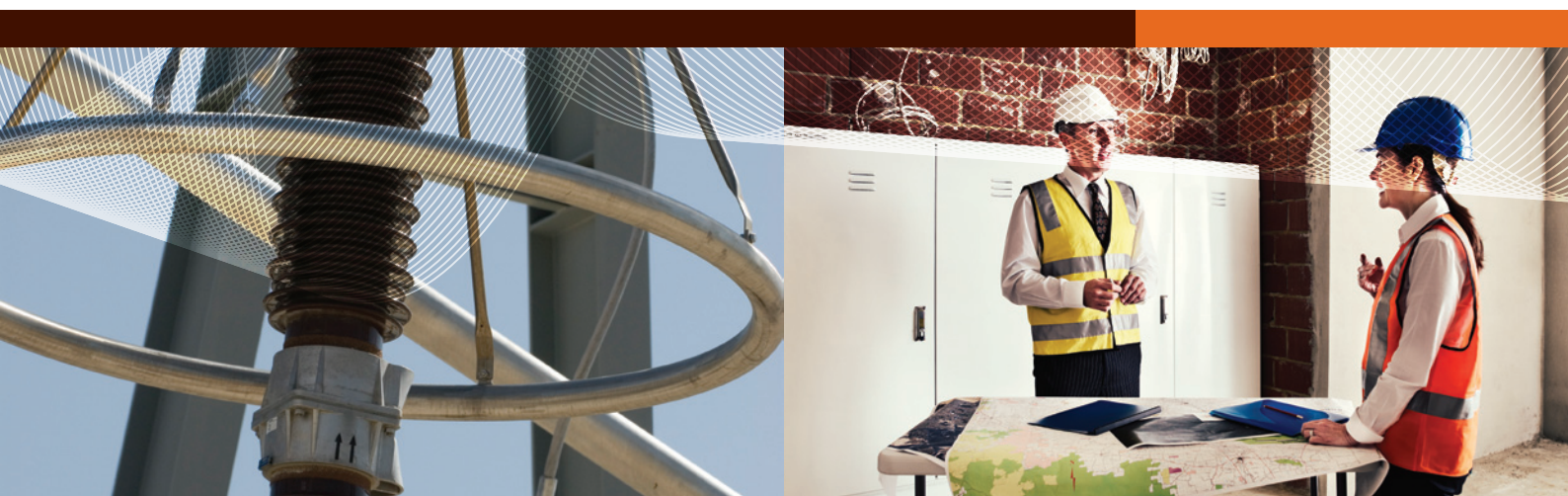
We have worked with many communities across our network and with their support we continue to develop new ways of minimising the social and environmental impact of substations. Western Power continues to work with local communities and councils in the design and location of substations.

## We consider:

- careful site selection - location, surrounding land use, topography
- substation design and layout or alternative substations
- substation screening methods such as walls and landscaping
- minimising overhead powerline entries where possible.

## Noise levels

Substations are known to emit noise. In some situations, it is necessary to build a solid wall around a substation or alternatively to install noise enclosures around transformers. These requirements are determined in accordance with Government noise regulations.



## Safety

A common community concern relates to electric and magnetic fields (EMF), which occur wherever electricity is used. They are a natural by-product of electricity and occur around all electrical appliances in our homes.

We design, construct and operate our powerlines and facilities in compliance with the guidelines recommended by the World Health Organisation and the National Health and Medical Research Council of Australia. We remain committed to the recommended safe limits of exposure to EMF for workers and the community.

For more information please see our EMF brochure or visit some of the following websites:

Energy Networks Association [www.ena.asn.au](http://www.ena.asn.au)

World Health Organisation [www.who.int](http://www.who.int)

Australian Radiation Protection and Nuclear Safety Agency [www.arpansa.gov.au](http://www.arpansa.gov.au)

National Health and Medical Research Council of Australia [www.nhmrc.gov.au](http://www.nhmrc.gov.au)

## Security

We ensure that all of our substations meet the industry guidelines for safety and security, from Energy Networks Australia. We ensure that our substations are kept safe and secure for the surrounding community, particularly children, and that our infrastructure is protected to ensure a reliable supply of electricity to the community. These considerations can place limitations on the design of a substation.

Some security measures and methods we consider include:

- ensuring adequate and easy to understand signage is placed at each substation
- fencing of the substation at appropriate heights
- the use of alarms, CCTV and security lighting
- regular monitoring of the site.

## The future of substations

We are committed to seeking new and innovative solutions for our infrastructure. We recognise the need to work with communities in this process to ensure we consider important local sensitivities in our design and location, while also taking into account the economic responsibility we have to the broader community.



## Contact information

Faults & emergencies, power interruptions,  
estimated restoration times (24 hrs)

13 13 51



Telephone Interpreter Services

13 14 50

General enquiries  
(7am - 5pm Monday to Friday)


13 10 87

TTY users  
(speech or hearing impaired only)

1800 13 13 51

[enquiry@westernpower.com.au](mailto:enquiry@westernpower.com.au)  
[westernpower.com.au](http://westernpower.com.au)

363 Wellington Street Perth WA 6000  
GPO Box L921 Perth WA 6842

 This information is available in alternative formats on request.

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