

# Working safely around the Western Power network



The information in this fact sheet has been developed for use in conjunction with the standards, guidelines and codes of practice applicable to your industry, and to allow you to put adequate risk management procedures in place before working around electrical network assets.

To reduce the risk, Western Power recommends you plan for works away from network assets as a priority.

## Occupational safety and health obligations

Working around electricity, whether underground or overhead, is high risk work. A person in control of the work area must ensure that no person, plant or materials enters the danger zone of an overhead powerline or other electrical network assets. The danger zone is set out in the Occupational Safety and Health Regulations 1996 – Reg 3.64.

Furthermore, if there is a risk that work conducted at a workplace might interfere with any electrical services the person having control of the site must:

- Establish the location of the service/s that might be affected
- Have an accurate diagrammatic representation of the service that might be impacted by works, at the workplace before work commences

(Occupational Safety and Health Regulations 1996 – Reg 3.21)

Any information provided to you by Western Power should not be used in isolation. **Refer to the Occupational Safety and Health Act 1984 and Occupational Safety and Health Regulations 1996, which outline the Worksafe WA requirements for working near electricity.**

## Obtaining network asset information

It is essential to know the location and voltage of any underground power cables and overhead network assets in the vicinity of your work area to assess the risk and carry out work safely. Information on both overhead and underground network assets can be obtained, free of charge from Dial Before You Dig at [1100.com.au](http://1100.com.au) or freecall 1100.



## Working near electricity process

<b>1</b>	Seek out asset information: <b>Submit a Dial Before You Dig enquiry on <a href="http://1100.com.au">1100.com.au</a></b> or freecall 1100 to determine the location and voltage of Western Power overhead and underground network assets
<b>2</b>	Perform an <b>onsite inspection</b> – existence, location, alignment of assets that could be impacted by your works
<b>3</b>	Conduct a <b>job risk assessment</b> and safe work method statement to determine if works can be completed outside of the danger zone/s
<b>4</b>	<b>Consider your options</b> , if works cannot be completed outside of the danger zone/s, contact Western Power to establish what services are available to ensure that you can complete your works safely
<b>5</b>	<b>Follow the 4 P's of excavation: Plan, Pothole, Protect and Proceed</b> , for any works in proximity to underground network assets. Visit Dial Before You Dig at <a href="http://1100.com.au">1100.com.au</a> or freecall 1100 for further advice on 'safe excavation' practices.

## Options for works within the danger zone

Western Power offers services that may assist where your detailed job risk assessment and safe work method statement has determined you are unable to work outside of the danger zone. These services are listed below.

<b>Distribution network assets</b> (0 – 33,000 volts)	Aerial visual covers (tiger tails)	<ul style="list-style-type: none"> <li>Available for installation on low voltage powerlines only, up to 1,000 volts</li> <li>Does not provide insulation or reduce the danger zone</li> </ul>
	Isolation or de-energisation	<ul style="list-style-type: none"> <li>Ensures work can be undertaken within the danger zone/s safely</li> <li>Cost and time implications apply</li> </ul>
	Relocation or removal	<ul style="list-style-type: none"> <li>Ensures work and/or event activity can be undertaken safely</li> <li>Cost and time implications apply</li> </ul>
<b>Transmission and communication network assets</b> (33,000 – 330,000 volts)	Relocation	<ul style="list-style-type: none"> <li>Ensures work and/or event can be undertaken safely</li> <li>Cost and time implications apply</li> </ul>
	Isolation	<ul style="list-style-type: none"> <li>Ensures work can be undertaken within the danger zone/s safely</li> <li>Cost and time implications apply</li> </ul>
	Clearance assessments	<ul style="list-style-type: none"> <li>Ensures work can be undertaken within the danger zone/s safely</li> <li>Ensures clearances required Australian Standards</li> </ul>
	Earth potential rise/ low frequency induction studies	<ul style="list-style-type: none"> <li>Provides a network based review of your studies</li> <li>Cost and time implications apply</li> </ul>
	Provision of technical data	<ul style="list-style-type: none"> <li>Provides specific network data that may be useful for your job risk assessment/safe work method statement</li> <li>Cost and time implications apply</li> </ul>
	Civil/ structural assessments	<ul style="list-style-type: none"> <li>Ensure the works will not impact network assets</li> <li>Cost and time implications apply</li> </ul>

See [westernpower.com.au](http://westernpower.com.au) for information, costs and schedules

## In case of emergency

1. In a life threatening emergency, **call emergency services on 000** as a priority
2. For all other electrical emergencies, or after you have called 000, call Western Power's 24/7 emergency number on **13 13 51**

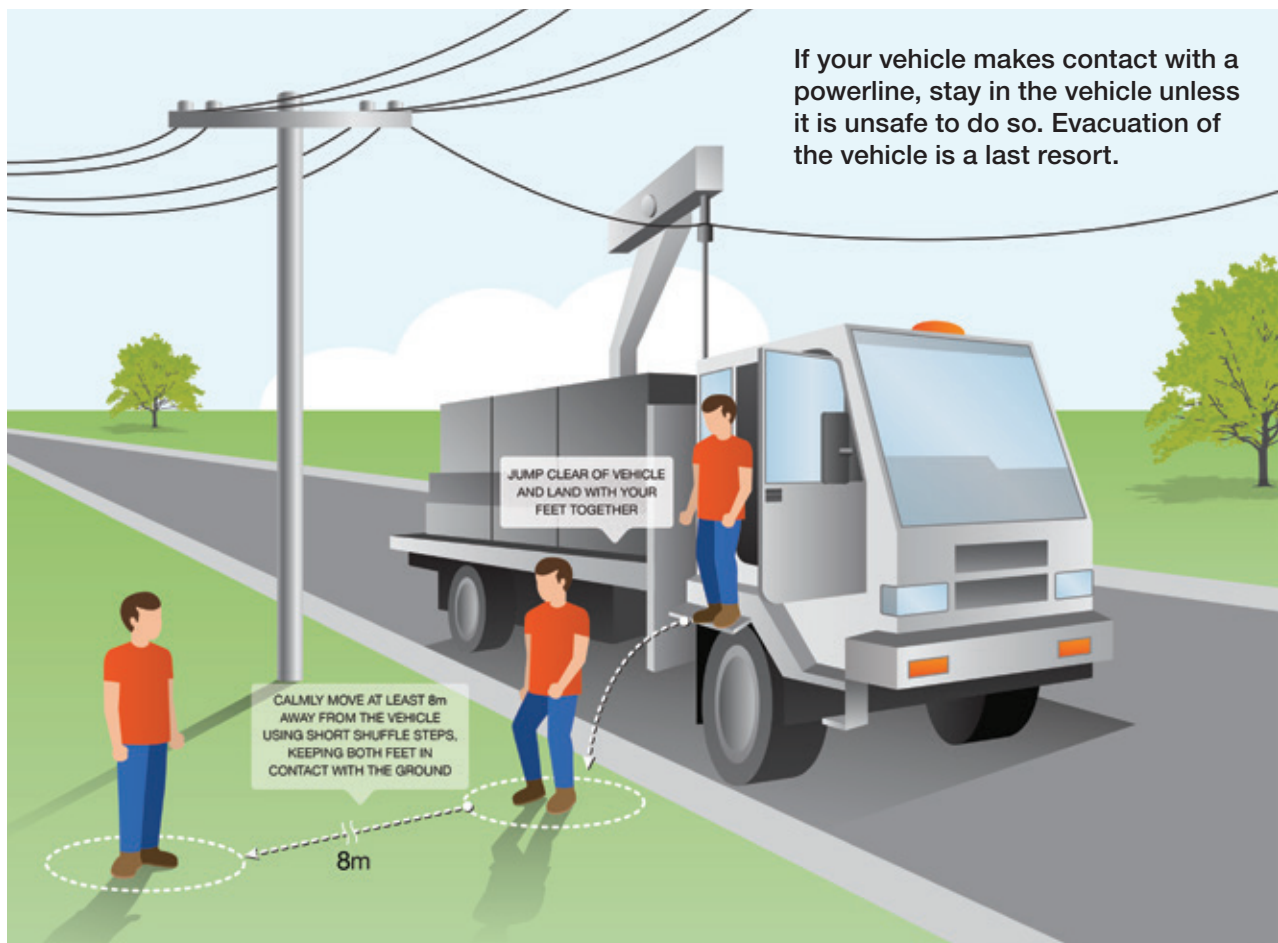
## When is it an emergency

- There is a fire on or near the Western Power network
- Powerlines are on the ground, low hanging, dangling, clashing together or arcing
- A pole has fallen or is leaning and sparking
- An underground cable, green dome or padmount transformer (green kiosk) is damaged or has exposed wires

- A substation door or gate is open
- You feel tingling or shocks from taps or appliances

## If you see an emergency involving Western Power electrical assets

1. Call emergency services on 000
2. Call Western Power on 13 13 51
3. Keep bystanders clear – at least 8m from any impacted network assets
4. Wait for Western Power to attend to make the area safe
5. All instances of electric shock and or electrocution need to be reported in to EnergySafety on Freecall 1800 678 198



## What to do if you are in a vehicle in contact with electricity

1. Turn the vehicle off and try to stay calm
2. Advise any bystanders not to approach and to remain at least 8m away from the vehicle and any downed electrical assets
3. It is safe to use your mobile phone, whilst in the vehicle, to call 000 and 13 13 51
4. Stay in the vehicle unless it is unsafe to do so due to fire or other life threatening circumstances.
5. Evacuating a vehicle in contact with powerlines is extremely dangerous and should be avoided if possible
6. If you are forced to evacuate, jump clear of the vehicle, landing with both feet together. Do not touch the ground and the vehicle at the same time as this may create a path for electricity to flow to earth through your body, which could electrocute you.
7. Slowly shuffle at least 8m away, do not run or lift your feet
8. Do not return to the vehicle until the area has been declared safe
9. You may need to quarantine the vehicle for 24 hours and have the tyres professionally examined or replaced
10. If you receive an electric shock, seek medical advice even if you are not injured

## Working around overhead network assets

It is a legislative requirement for third parties to Western Power to work outside the danger zones. A danger zone is a specific area surrounding live electrical apparatus that ordinary persons, equipment and materials must not enter. The size of the danger zone is determined by the voltage of the electrical apparatus.

If your works enter the danger zone as prescribed in Regulation 3.64 of the Occupational Safety and Health Regulations 1996, or you make contact with the network, you may be prosecuted and be liable for any damage to the network. It is Western Power's obligation to inform Worksafe WA of any non-compliance concerns.

### Always

- Establish the location and voltages of network assets in your work area to determine the required clearances by contacting Dial Before You Dig
- Check the height of loads
- Determine the extension, reach and height of equipment
- Use a competent spotter to ensure clearances are maintained

### Where possible

- Do not lift loads directly underneath powerlines
- Do not lift loads over powerlines
- Establish your lay down area, site storage and disposal points away from the Western Power network

## Working around underground electrical network assets

Digging, excavating, drilling and other underground works can be life threatening if the risks are not managed appropriately. Accidental contact with electrical network assets can also leave an entire community without essential services.

For the location and voltage information of all underground network cables submit a Dial Before You Dig enquiry at 1100.com.au or freecall 1100 at least two days before commencing works.

## Guidelines for undertaking excavation work

1. Follow the 4 Ps process: Plan, Pothole, Protect and Proceed. For further guidance on safe work practices relevant to your industry contact Worksafe WA or your industry association.
2. Contact Dial Before You Dig to obtain a cable location plan – Free call 1100 or visit **1100.com.au**. Plans supplied include overhead powerline and underground cable voltage information which is used to determine minimum approach distances.
3. Determine if the proposed excavation is within the minimum approach distance of any underground cables and/or overhead powerlines using your industry standards, codes of practice and guidelines regarding safe excavation.
4. Consider the operating height and reach of any excavation equipment to ensure that it does not enter the danger zone for overhead powerlines.
5. Engage a qualified underground service locating professional to confirm the locations of known and any unknown underground services in the work area.
6. Determine the collapsible area of the proposed excavation.
7. Pothole by hand or other non-destructive means to remove small amounts of soil to prove the location and depth of underground services. Check that no services have been exposed after each shovel load.
8. Only use mechanical excavation after all services have been identified and exposed.
9. Proceed with care.
10. Stop work and call Western Power on 13 10 87 if you are unable to locate an underground cable, encounter any issues associated with the underground network such as damaged insulation or cables or in the event that you discover a cable not shown on your plan.

**Further guidance on safe excavation in WA is provided in *WorkSafe's Excavation Work Code of Practice 2013*.**

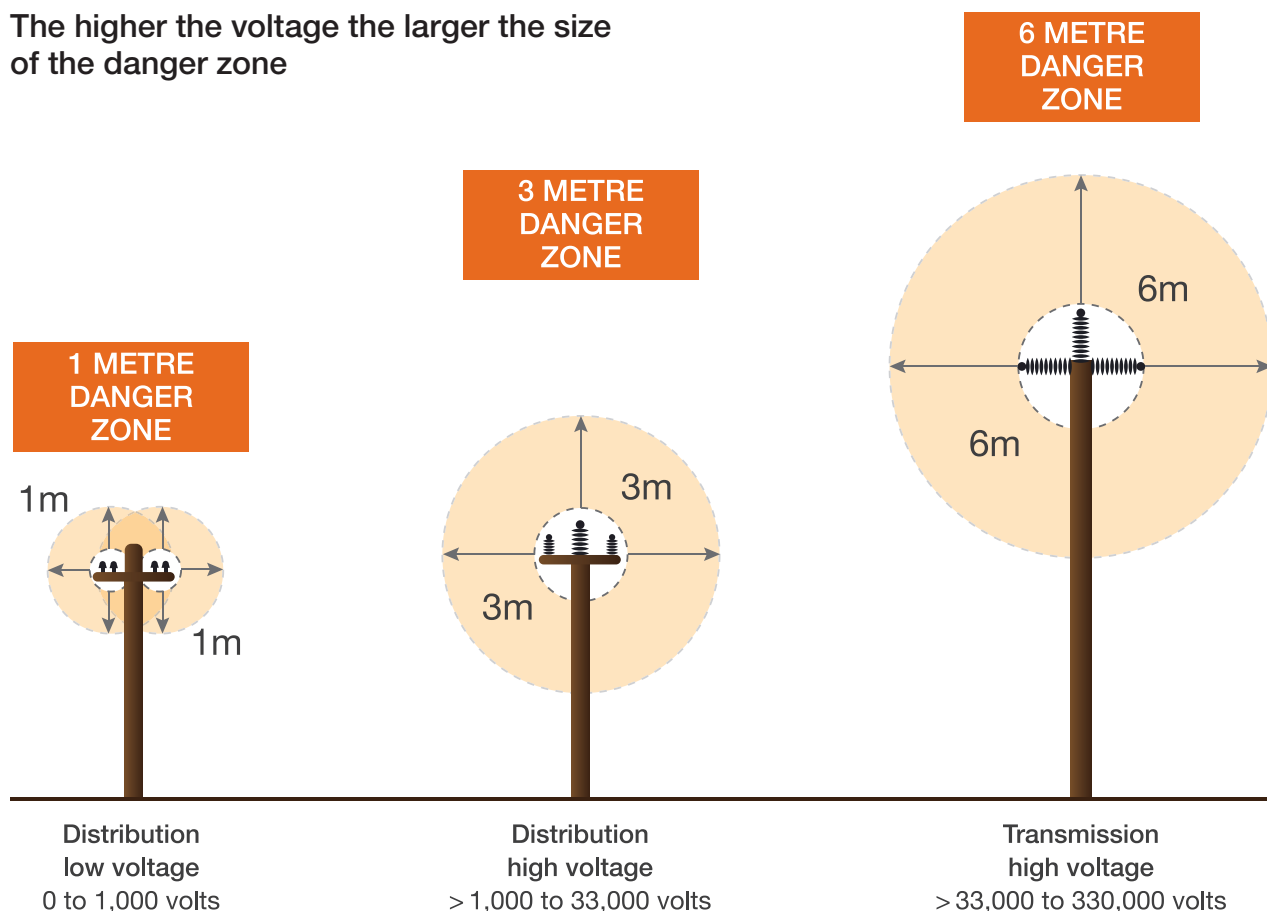
## Minimum approach distances for underground works

You should only commence digging once you have identified and proved the location of underground services. Western Power requires you to meet the following minimum approach distances

Nominal voltage	Minimum approach distance	
	Power tool or plant	Non-powered hand tool/ non-destructive digging
Up to and including 1,000V	30cm	Approach with care, avoid contact
1,000V up to and including 33kV	50cm	
Greater than 33kV up to and including 132kV	3m*	



The higher the voltage the larger the size of the danger zone



\* Stickers illustrating the danger zones can be ordered for free by contacting [communityenquiries@westernpower.com.au](mailto:communityenquiries@westernpower.com.au)

## Oversize vehicle movements

Transporting oversized loads can be dangerous, especially if steps have not been taken to ensure that the load remains a safe distance from powerlines. Mainroads WA requires Western Power to authorise all load movements around the State where the load is more than 4.3m high (4.6m for livestock vehicles and towed agricultural machinery).

1. Refer to Main Roads WA with your route to obtain a permit for travel
2. Apply to Western Power for authorisation of the oversized load movement, if the height of the load exceeds 4.3m
3. Western Power to assess the application
4. Western Power to issue an Oversize Load Movement Authorisation.
5. Once the Authorisation has been issued no changes can be made. If changes are required a new authorisation must be issued, incurring a new permit processing fee.

If works are required, such as the raising of powerlines, Western Power will provide you with a quote. At times it may be determined that an escort is required to ensure that the vehicle is kept clear of powerlines at all times.

See [westernpower.com.au](http://westernpower.com.au) for further information and a schedule of applicable fees.

The heights of powerlines can vary depending on the voltage and environment. Operators of loads 4.3m and above must refer to Main Roads WA before applying to Western Power for authorisation.

## Western Power

Emergencies and power outage ..... 13 13 51  
(24 hours, seven days a week)

General enquiries ..... 13 10 87  
(7am - 5pm Monday to Friday)

Telephone interpreter services: 13 14 50

TTY users (speech or hearing impaired only): 1800 13 13 51

Fax: (08) 9225 2660

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

Web: [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 if requested.

Emergency services ..... 000

## Dial Before You Dig

Web ..... [1100.com.au](http://1100.com.au)

Freecall: 1100

## To download a copy of the danger zones to your smartphone homescreen:

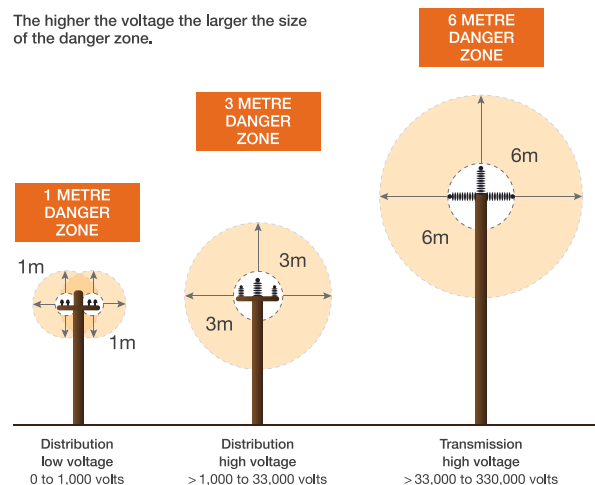
### For iPhones:

- Enter the following URL:  
[http://www.westernpower.com.au/images/danger\\_zone.jpg](http://www.westernpower.com.au/images/danger_zone.jpg)  
to launch the 'danger zone' image
- Tap on the Share button (bottom left)
- Tap on the Add to Home Screen button in the share menu

### For Android phones:

- Enter the following URL:  
[http://www.westernpower.com.au/images/danger\\_zone.jpg](http://www.westernpower.com.au/images/danger_zone.jpg)  
to open the 'danger zone' image
- Tap on the vertical ellipsis (top right)
- Tap on the Add to Home Screen button

The higher the voltage the larger the size of the danger zone.



### For further information

[westernpower.com.au/workingnearelectricity](http://westernpower.com.au/workingnearelectricity)



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