

# Transmission lines and fire

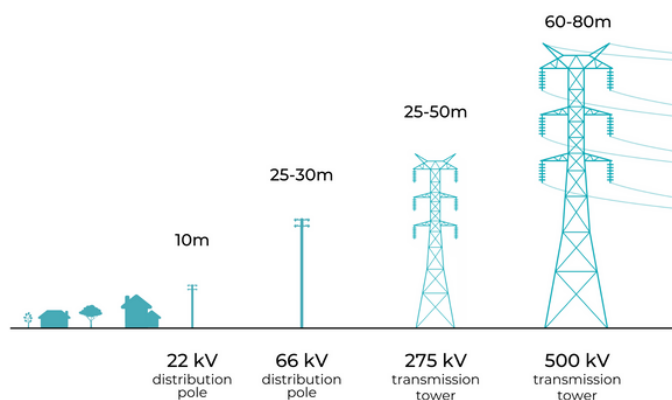
This fact sheet explores common questions regarding transmission lines and fire in Australia.

## What are transmission lines?

Electricity is delivered to homes and businesses via two types of power lines – transmission lines and distribution lines.

Transmission lines are the large towers you might often see throughout regional and outer city areas. They carry large volumes of electricity at high voltages from generators, such as wind or solar farms, to infrastructure that connects to distribution lines.

Distribution lines are the smaller power poles you might see along your street. They transport the electricity, at lower voltages, to our homes and businesses.



## What is the risk of fire around transmission lines?

Electric sparks can ignite fires. In Australia, it is common for lightning strikes to start bushfires.

The risk of transmission lines starting a fire is extremely low, and they are designed and managed to minimise these risks.

In recent decades across Australia, there have been only two instances where transmission lines have caused a fire.\*

When bushfires do burn near to transmission lines, there are increased risks, but energy and emergency management agencies work hard to restrict fire near to these assets and minimise the risk to ongoing power supply.

There have been fires started or exacerbated by some types of distribution lines, in particular Single Wire Earth Return lines, as found by the Royal Commission into the Black Saturday fires.

*\* validated with transmission companies in New South Wales, Queensland, Tasmania and Victoria*

## Why do we need to build new transmission?

To ensure we can connect new renewable generation where it is located, replace coal and gas, and deliver reliable low cost energy supply to all, we need new transmission lines. Energy authorities estimate around 10,000 km is needed by the early 2030s in the eastern states.

## What makes transmission lower risk?

Transmission lines, when managed and maintained properly, pose a very low risk of starting a fire.

Transmission networks are unlikely to start or be damaged by fire because:

- Transmission lines are supported on tall towers (up to 80m high)
- The lines have dedicated corridors (easements) with an average width of 50 metres, which allow access to private land in order to maintain infrastructure
- There is greater control of vegetation growing immediately underneath the lines, which reduces the risk of contact from trees and branches
- If transmission component failures do occur, they often occur in extreme weather events that are usually accompanied by rain (e.g. cyclones and thunderstorms)
- Individual transmission line conductors are separated by great distances and are not likely to clash during extreme weather events

## Keeping transmission low risk

### Design

Design of transmission lines and network assets are required to consider and address fire risk. Where lines are located in environments deemed to be high risk, additional measures must be put in place. These will likely include more frequent condition inspections and higher standards for asset and easement maintenance.

### Construction

Fire mitigation actions during the construction of transmission lines include complying with restrictions on days of high fire danger, and staff being equipped with and trained to use firefighting equipment.

### Maintenance

Transmission companies apply asset management and maintenance practices to minimise risks and look after the transmission lines and surrounding easements. Methods used include:

- Ground inspections
- Aerial inspections using helicopters, drones and infrared techniques
- Light detection and ranging (LiDAR) imaging which picks up changes in vegetation to inform maintenance teams when work is needed to reduce fuel load in the easement
- Prompt implementation of rectification works

## For more information, see these factsheets:

- [Bushfire Factsheet](#) – Energy Networks Australia
- [Bushfire Management](#) – Powerlink
- [Electricity Transmission Lines: Bushfire Management & Community Safety](#) – Energy Safe Victoria
- [Fighting fires around transmission lines](#) – CFA
- [Fires and transmission lines safety](#) – Powerlink
- [Managing bushfire risk](#) – Transgrid
- [Managing fire risk – electricity transmission network](#) – AusNet Services

