

BUSHFIRES + ENERGY NETWORKS

NOVEMBER 2013

BUSHFIRE IS AN EVER-PRESENT THREAT ACROSS MUCH OF AUSTRALIA. THE POTENTIAL OF HOTTER, DRIER AND WINDIER CONDITIONS IN THE FUTURE WILL LIKELY INCREASE THE DANGER OF MORE REGULAR AND SEVERE BUSHFIRES. ADEQUATE PREPARATION IS CRITICAL NOT ONLY FOR HOUSEHOLDERS AND BUSINESS OWNERS IN BUSHFIRE-PRONE AREAS, BUT ALSO FOR OPERATORS OF ELECTRICITY NETWORKS.

Energy network businesses operate extensive transmission and distribution networks across the country, with a total of over 880,000 km of combined distribution and transmission power lines nationwide, as well as over 7 million power poles. With responsibility for such a huge asset base, energy network businesses are acutely aware of their role in safely and responsibly managing these assets to mitigate the risk of bushfires.

ENA and its members are committed to ensuring that customers across Australia are provided with a safe and reliable supply of electricity. Community safety is of the utmost importance to network businesses, as is the need to strike a balance between the reliability of supply and the cost to customers of delivering electricity services.

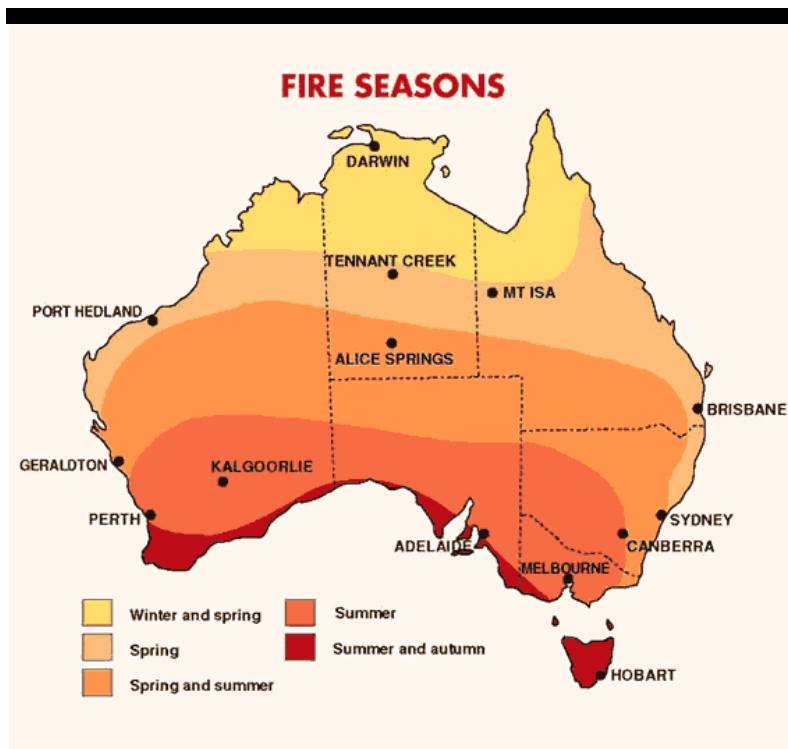
ISSUES AND CHALLENGES FOR ENERGY NETWORKS

Energy network businesses face the unique challenge of managing a substantial asset base that spans thousands of square kilometres. Electricity networks also operate in a variety of climatic and geographical conditions, with some networks facing greater bushfire risks than others.

Transmission networks generally have a lower risk of being affected by, or associated with, bushfire related incidents because they must maintain higher clearances from vegetation and increased distances between power lines. Conversely, distribution businesses face a much more difficult situation, with many more poles and wires to manage, often in closer proximity to vegetation and communities.

Climate and vegetation are the two main influencing factors on bushfires in Australia. They vary greatly across states and territories, with optimum conditions for high fire danger occurring at different times of the year. For example, in the more tropical climates of northern Australia the summer months bring significant rainfall that reduces the threat of bushfires at that time of year. In the southern parts of Australia the typically hot and dry weather in the summer months, combined with a high fuel load (dry vegetation), creates a very high bushfire risk.

FIGURE 1: FIRE SEASONS



Source: Australian Government, Bureau of Meteorology

There is no one way to manage bushfire risks in the varied conditions in which network businesses operate, so network operators have developed an array of solutions specific to their location and network conditions. This ensures that networks are operated in the safest and most efficient manner possible.

State governments are also looking at ways of reducing the threat of bushfires. In 2011 the Victorian Government announced a \$750 million powerline bushfire safety program (PBSP). This 10-year program will deliver on many of the recommendations from the 2009 Victorian Bushfire Royal Commission, following the Black Saturday bushfires. This program aims to reduce the risk of bushfires associated with electrical assets without affecting electricity reliability. The program will invest in asset protection and control equipment, make changes to network operations, replace powerlines in high-risk areas, mitigate reliability impacts on customers, and provide funds for research and development into risk reduction technologies and procedures.

BUSHFIRE MITIGATION STRATEGIES

All ENA members that operate in bushfire-prone areas have detailed plans and strategies for the mitigation of bushfire risk, which are often available on each company's website. These documents explain how each energy network business approaches the mitigation of bushfire risks.

Each jurisdiction adopts a range of response strategies on days of extreme fire danger to protect lives and property from the threat of bushfire. For example, in many jurisdictions, network operators suppress the auto-reclose function and change protection settings to minimise the risks associated with electricity assets. In South Australia, the network operator also temporarily turns off the power supply under prescribed environmental conditions. While all electricity network operators have the ability to disconnect supply if the network poses a high enough risk to the public, only in South Australia is there legislation that enables the network operator to do so with immunity from prosecution.

There are advantages and disadvantages to every approach, and these need to be considered in the context of the environment in which the electricity network business operates. Businesses will adopt a range of levels of sophistication in their approach to managing bushfire risk, with that sophistication being commensurate with local factors such as the community's awareness, the organisation's

tolerance of the risk, the current health of the network, the level of funding available, as well as the local political environment. Regardless of the situation, all ENA members are committed to working with their regulators to ensure the most practical and prudent approach is taken to protect local communities.

Despite jurisdictional differences, some practices are common to all network operators. The primary tool for mitigating the risk of contributing to bushfires is vegetation management. The network operator will clear plants and grasses under power lines, and sometimes replace species with low-growing ones, to maintain low fuel load conditions.

Network businesses also devote substantial resources to regular asset inspections and maintenance regimes to mitigate bushfire risk associated with electricity assets. This includes the replacement of infrastructure in poor condition and employing new technologies that reduce the risks associated with electricity assets.

The public can also play a role in reducing bushfire risks by reporting vegetation they believe poses a hazard to their local electricity network. The contact details of each electricity network operator are included in this document.

ENA AND MEMBER INITIATIVES

ENA and its members continually improve the industry's bushfire mitigation and management practices, and they ensure that knowledge and innovations are shared across the industry.

Network businesses are using or trialling a number of technologies to mitigate the risk of fire associated with electricity assets:

- » Advanced aerial inspection with high resolution digital photography improves the monitoring and inspection of network asset conditions and vegetation;
- » Conductor spacers/spreaders prevent power lines clashing together in high winds;
- » Rapid Earth Fault Current Limiters reduce electrical arcing at the point a fault occurs on the network;
- » Covered conductors are insulated coatings on powerlines in high-risk areas that are designed to reduce the danger from faults or fallen lines;
- » Geographic Information System mapping uses data from electricity assets, vegetation and weather to identify potential risks on the network; and
- » Fault protection relays detect and eliminate dangerous faults on the electricity network.

In Victoria an 'f-factor scheme' has been introduced under the regulatory system for electricity network businesses. This scheme is intended to provide financial penalties to encourage electricity

networks to reduce the risk of fire and to reduce the risk of loss or damage caused by fire associated with electricity infrastructure.

ENA, in conjunction with its members, also has several projects aimed at improving bushfire mitigation:

- » ENA industry publications:
 - ENA technical report – guide for the selection and management of poles to reduce damage and loss when they are exposed to bushfires
 - ENA technical report for the mitigation of pole-top fires
 - ENA guideline for the management of burning and fire damaged copper chromium arsenate (CCA)-impregnated poles and crossarms
 - ENA ‘pole fire test’ method – developed in conjunction with Forest and Wood Products Australia.

- » ENA Industry Bushfire Workshops (2010/11), where members shared lessons from Victorian Black Saturday bushfires and discussed a variety of bushfire mitigation strategies.
- » Regular discussion and information-sharing through ENA committees on latest bushfire mitigation strategies and technologies.

ENA and its members have an ongoing commitment to continually review, assess and improve industry approaches to bushfire management. Network businesses recognise the need to adapt to changing climate conditions and continually evolve to embrace new technologies that can help reduce bushfire risks.

KEY CONTACTS

In the event of a bushfire or other emergency, please **Dial 000** for immediate emergency assistance.

If you experience a fault on the electricity network, whether you believe it poses a danger or not, call one of the following numbers depending on your location.

ACT

ActewAGL – 13 10 93 (electricity)

NSW

Ausgrid – 13 13 88
Essential Energy - 13 20 80
Endeavour Energy - 131 003
Transgrid - 1800 027 253

NT

Power and Water Corporation -
1800 245 090

QLD

Energex – 13 19 62
Ergon Energy - 13 16 70
Powerlink - 1800 353 031

SA

SA Power Networks - 13 13 66
ElectraNet - 1800 243 853

TAS

Aurora Energy – 13 2004
Transend Networks - 1300 361 811

VIC

Citipower - 13 12 80
Powercor - 13 24 12
SP Ausnet - 13 17 99
United Energy - 132 099
Jemena - 131 626

WA

Western Power - 13 13 51
Horizon Power - 13 23 51

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