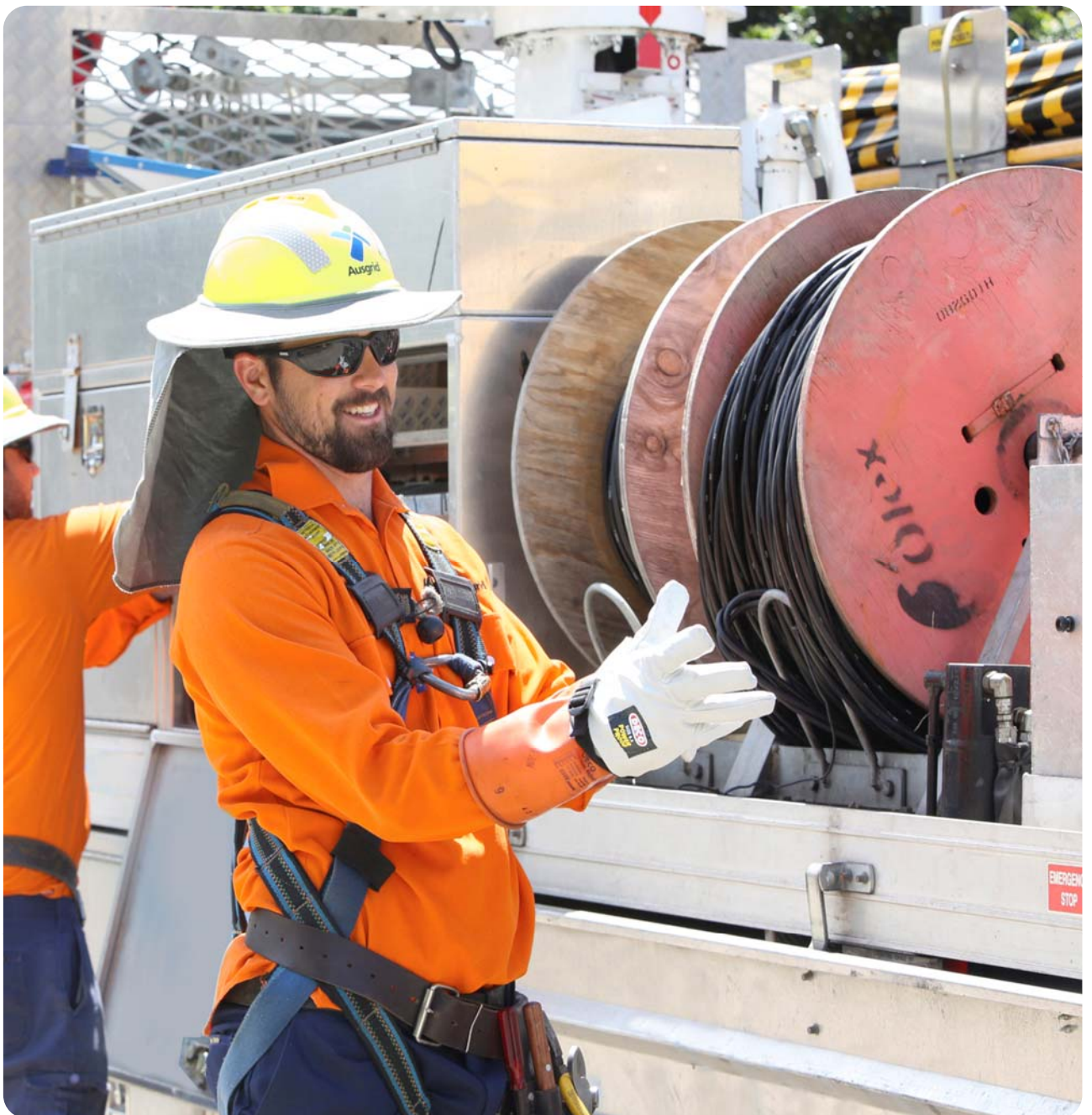


# Bushfire Risk Management Plan

March 2017



## Document History

Issue No.	Date	Approved By	Summary of Changes
1	June 2014	Chief Engineer	New separate Bushfire Risk Management Plan prepared and updated, based on Chapter 4 of Network Management Plan June 2012
2	July 2014	Chief Engineer	Revised requirements for the implementation of the policy regarding private and "shared" powerlines. Revised inspection and testing requirements for ground line pole and overhead powerline inspections.
3	Nov 2014	Chief Engineer	Revised requirements regarding detail of Private & Shared Mains Policy.
4*	Mar 2015	Chief Engineer	Publication as standalone document for compliance with the Electricity Supply (Safety and Network Management) Regulation 2014
5	Dec 2015	General Manager Asset Management	Implementation of new Private & Shared Mains Policy and Vegetation Management Common Requirement
6	March 2016	General Manager Asset Management	Inclusion of revised Company Policy: Bushfire Risk Mitigation – Implementation of Automatic Reclosing for High Voltage Feeders
7	March 2017	General Manager Asset Management	Alignment with Formal Safety Assessment, Critical Risk: Bushfire, regulatory and ownership changes

\* NOTE: Prior to March 2015 the Bushfire Risk Management Plan was published as chapter 4 of Ausgrid's Network Management Plan as required by the Electricity Supply (Safety and Network Management) Regulation 2008. This regulation has been repealed and replaced with the Electricity Supply (Safety and Network Management) Regulation 2014 which specifies the adoption of AS5577-2013: Electricity Network Safety Management Systems. The Bushfire Risk Management Plan has been republished as a standalone document to comply with the requirements of the Electricity Supply (Safety and Network Management) Regulation 2014.

### Warning

It is illegal for persons other than licensed electricians, or persons authorised by legislation, to work on the fixed wiring of any electrical installation. Penalties for conviction are severe.

Ausgrid may amend this document at any time. It is the responsibility of the user of this document to check that only the current version is being used.

### Duration and availability of this Plan

This Plan has been introduced in 2015 and will continue to be in effect until it is removed from service. This plan will undergo regular review in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014. This plan will be systematically reviewed against legislation and regulation applicable to distribution and transmission network service providers, industry standards including AS5577-2013, Ausgrid's strategic plans and relevant internal policies, procedures and standards and our regulatory determination. This plan will be updated as necessary in line with the outcome of these reviews.

In accordance with the NSW Electricity Supply (Safety and Network Management) Regulation 2014, this Plan will be made available to all stakeholders who are likely to be involved in its implementation.

This Bushfire Risk Management Plan is available on Ausgrid's website ([www.ausgrid.com.au](http://www.ausgrid.com.au)). Printed copies of this Plan are available at Ausgrid's principal office – 570 George Street, Sydney NSW 2000.

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# **Introduction to Ausgrid's Bushfire Risk Management Plan**

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Under the Electricity Supply (Safety and Network Management) Regulation 2014 (the Regulation) Ausgrid must, as part of its Electricity Network Safety Management System, address the management of bushfire risks relating to its electricity network. Ausgrid's Formal Safety Assessment, Critical Risk: Bushfire is a tool that systematises the process of assessing risks related to achieving the primary objectives of managing Bushfire Risk across its franchise area in accordance with the Regulation and Electricity Network Safety Management System. Ausgrid has developed and published this Bushfire Risk Management Plan to comply with the requirements of the Regulation and Electricity Network Safety Management System to outline the measures Ausgrid has implemented consistent with the Formal Safety Assessment, Critical Risk: Bushfire. Both the Formal Safety Assessment, Critical Risk: Bushfire and this Bushfire Risk Management Plan are designed to minimise the bushfire risk the electricity network poses. Both documents include the policies, procedures and controls for identifying 'at risk' locations on the network and eliminating and mitigating the bushfire risk.

## **Significant changes since the last Bushfire Risk Management Plan**

This document is a reformatted version of Chapter 4 of Ausgrid's now retired Network Management Plan, published as a standalone document. This has been undertaken to facilitate compliance with the Electricity Supply (Safety and Network Management) Regulation 2014. Apart from this reformatting the only other significant changes made to the content of this document, as compared to Chapter 4 of the Network Management Plan are:

- Alignment with Ausgrid's Formal Safety Assessment (FSA), Critical Risk: Bushfire.
- Ausgrid's adoption of the vegetation clearance requirements of the Networks NSW Vegetation Management Common Requirement (VMCR) instead of ISSC 3 Guideline for Managing Vegetation Near Power Lines,
- Inclusion of revised Company Policy: Bushfire Mitigation – Implementation of Automatic Reclosing for High Voltage Feeders,

## **Ausgrid's commitment to safety**

Ausgrid is committed to ensuring the safe operation of its network and to providing a reliable and safe supply of electricity to all its customers. It gives the highest priority to safety issues, including network safety and security, environmental, workplace and public safety, bushfire risk and the safety of the customer installations connected to the Ausgrid network.

Subject always to its paramount commitment to safety, Ausgrid's network planning objective is to comply with the many legislative and regulatory obligations that apply to infrastructure development and maintenance while at the same time efficiently managing the financial performance of its business as a network operator.

# Contents

<b>1</b>	<b>Overview .....</b>	<b>6</b>
<b>2</b>	<b>Our commitment.....</b>	<b>8</b>
<b>3</b>	<b>Identifying bushfire risks.....</b>	<b>9</b>
3.1	Identifying bushfire prone areas .....	9
3.2	Identifying network assets that could start bushfires .....	9
<b>4</b>	<b>Designing and maintaining electrical assets.....</b>	<b>10</b>
4.1	Our assets .....	10
4.2	Our customers' assets.....	16
<b>5</b>	<b>Managing vegetation.....</b>	<b>18</b>
5.1	Safe clearances.....	18
<b>6</b>	<b>Communicating risks and responsibilities .....</b>	<b>19</b>
<b>7</b>	<b>Handling inquiries and complaints.....</b>	<b>20</b>
<b>8</b>	<b>Building relationships with relevant agencies .....</b>	<b>21</b>
<b>9</b>	<b>Management and reporting .....</b>	<b>22</b>
9.1	Schedule of reports to IPART.....	22
<b>10</b>	<b>Reference documents.....</b>	<b>23</b>

# 1 Overview

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Bushfires pose an ever present risk to life, property and the environment throughout rural and urban areas in New South Wales.

Bushfires can be caused by a variety of factors, including lightning strikes, sparks from farm machinery and incinerators, vehicle crashes, and electrical incidents such as fallen powerlines.

This Bushfire Risk Management Plan has been prepared in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014 and Ausgrid's Electricity Network Safety Management System to outline the measures Ausgrid has implemented consistent with the Formal Safety Assessment, Critical Risk: Bushfire. Under the Regulation Ausgrid has an obligation to manage bushfire risks as they relate to our network. We do this by adopting a risk management approach in accordance with the Formal Safety Assessment, Critical Risk: Bushfire so that our asset risks are treated so far as is reasonably practicable and are properly operated, designed, constructed and maintained and decommissioned.

This Bushfire Risk Management Plan outlines the policies, procedures, standards, codes and guidelines that Ausgrid applies to construction, operation and management of our network. The Plan also provides an overview of Ausgrid's bushfire risk management strategies in relation to key stakeholders including:

- Landowners and Occupiers;
- Local Government;
- Government Agencies; and
- Emergency Services.

The objective of Ausgrid's Bushfire Risk Management Plan is to devise a management framework that when used correctly will:

- support Ausgrid taking reasonably practicable steps to address public safety;
- establish standards for vegetation management near electricity lines (particularly in bushfire prone areas);
- reduce interruptions to electricity supply that are related to vegetation defects; and
- minimise the possibility of fire ignition by electricity lines and associated equipment.

The Bushfire Risk Management Plan also outlines how we inform our customers of their obligation and responsibility to keep their overhead powerlines free of vegetation and to inspect, test and maintain them at regular intervals. Ausgrid has developed a policy in regard to the management of these privately owned overhead powerlines whereby Ausgrid proactively inspects private overhead powerlines in bushfire prone areas, informs the customer of the requirement for rectification of the defects and subsequently deals with those remaining defects that are found to represent an unacceptably high risk, especially bushfire risk.

Ausgrid generally manages vegetation in accordance with ISSC 3 Guideline for Managing Vegetation Near Power Lines where applicable, except for vegetation clearance requirements, regrowth allowances, defect categorisation, prioritisation and rectification times for which Ausgrid has recently adopted those contained in Vegetation Management Common Requirement (VMCR) which was endorsed by the NSW Distribution Network Service Providers (DNSPs) (acting together as Networks NSW) and used as the basis of a common vegetation management specification. Before adopting the clearances specified in the VMCR Ausgrid conducted a gap analysis (risk assessment) to address the differences between the clearances specified in the VMCR and those specified in ISSC 3. This highlighted no increased risk between the VMCR and ISSC 3. Issues identified in the development of the VMCR relating to some clearances have been referred to the Industry Safety Steering Committee (ISSC) and a working group has subsequently been convened to undertake a review of the ISSC 3 document. This review was completed in June 2016 with the publishing of a new version of ISSC 3 and Ausgrid is presently considering how it will implement the outcomes of the review.

Ausgrid will continue to develop, publish, implement and report against our bushfire risk management strategy. We have incorporated the provisions of ISSC 3 Guideline for Managing Vegetation Near Power Lines,

Networks NSW Vegetation Management Common Requirement (VMCR), ISSC 31 Guideline for the Management of Private Lines and ISSC 33 Guideline for Network Configuration during High Bushfire Risk Days into this Plan.

## 2 Our commitment

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Ausgrid is committed to managing bushfire risks associated with electrical assets to support the safety of our customers and the wider community.

Ausgrid aims to fulfil its responsibilities under the Bushfire Risk Management Plan by using the following strategies:

- identification of bushfire risks;
- ongoing improvement of standards for electricity assets;
- effective maintenance of our assets;
- specific company policy and operational procedures for times of very high fire danger;
- management of safe vegetation clearances;
- communication of bushfire risks and shared responsibilities to our customers and the wider community;
- effective management of enquiries and complaints relating to mitigation of bushfire risks; and
- working with other agencies as much as reasonably practicable to help achieve a coordinated approach to bushfire risk management.

These strategies have allowed Ausgrid to fulfil its obligations under the Regulation as directed by the Independent Pricing and Regulatory Tribunal (IPART) and to comply with its duty as a public authority under the Rural Fires Act 1997 (NSW) to take whatever measures are reasonably practicable to prevent the occurrence of bushfires or minimise the danger of bushfires.



## 3 Identifying bushfire risks

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Our Bushfire Hazard Potential Maps and Integrated Asset Management System help us identify bushfire prone areas and assets that may represent a bushfire risk.

Bushfire hazards vary from season to season and are dependent on weather conditions and fuel loads.

Recognising this, we have a process in place to identify bushfire prone areas and network assets in those areas that are capable of starting bushfires. We also have systems to help keep this information as up-to-date as reasonably practicable.

### 3.1 Identifying bushfire prone areas

To identify the bushfire prone areas in our distribution area, we use the “bushfire prone” land maps prepared by local councils in accordance with the requirements of section 146 of the Environmental Planning and Assessment Act 1979 (NSW).

Ausgrid overlays the council maps with our own geospatial asset information to identify assets located in bushfire prone areas. Since September 2005, Ausgrid has had access to a complete set of bushfire prone land maps from councils within our network area.

The maps prepared by local councils are reviewed by the Rural Fire Service prior to being formally certified by the Commissioner for the NSW Rural Fire Service (RFS). Ausgrid has a formal agreement with the RFS regarding use of the certified maps for management of bushfire risks in our network area and load the latest version of these certified maps into our Geospatial Information System (GIS) annually prior to the bushfire season.

We encourage our customers to access these maps from their local council so that they can identify whether their assets lie within areas that are bushfire prone.

### 3.2 Identifying network assets that could start bushfires

Ausgrid applies a reliability-centred maintenance (RCM) analysis for the development of preventative maintenance requirements. As part of this, a failure modes, effects and criticality analysis (FMECA) has been undertaken on all network assets and included identification of failure modes that potentially could cause bushfires. These failure modes are included in our Integrated Asset Management System. The outcome of the RCM/FMECA process is in the form of maintenance standards which are available to all employees via our Technical Maintenance Plan (TMP) on Balin.

We periodically review our Network Standards (where we specify the design and construction requirements for network assets) so that the standards comply with the ENA Doc 01 -2008 Clause 6.3.2 as much as reasonably practicable. This is of particular relevance to this Plan as it specifically requires the design and construction of electrical apparatus to take account of issues such as bushfire mitigation.

Investigations of actionable incidents under the Significant Electricity Network Incidents (SENI) scheme (as administered by NSW Department of Industry, Skills and Regional Development) are used by Ausgrid to review all significant incidents involving bushfires and network assets. We use this information to systematically update our RCM/FMECA for the failed equipment if the failure modes have not already been identified as potentially initiating bushfires. This information is then included in our Integrated Asset Management System. Replacement or Duty of Care programmes are established for the type of asset that has failed if warranted or else corrective maintenance actions are undertaken to mitigate the risk.

Our Integrated Asset Management System is our asset register for network assets. It is used to record inspection activity requirements on our network assets as well as other corrective and breakdown maintenance required on those assets. The Integrated Asset Management System is updated to reflect the asset status when:

- an asset is changed or replaced;
- a new asset is installed; or
- the risk status of an existing asset changes when defects are found during inspection and when the defect has been repaired.

The relevant Network Standards or Maintenance Standards are also updated if required to reflect new information.

## 4 Designing and maintaining electrical assets

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Our asset design and maintenance standards help us minimise the risk of bushfires being started by our powerlines and/or electrical equipment.

Ausgrid manages bushfire risks by adopting a risk management approach to ensuring that our assets are properly designed, equipped and maintained.

To meet our obligations we periodically review our design, inspection, testing, maintenance and operational procedures (often in consultation with other New South Wales and Australian electricity distributors and other industry forums).

We also provide information to help our customers meet their obligations to maintain safe private powerlines. The information includes defect notifications and details on how best to keep private overhead powerlines free of vegetation. It also outlines obligations customers have to inspect, test and maintain their private powerlines at regular intervals for their safety.

Ausgrid has developed a policy in regard to the management of privately owned overhead powerlines whereby Ausgrid proactively inspects private overhead powerlines in bushfire prone areas, informs the customer of the requirement for them to rectify the defects and subsequently deals with those remaining defects that are found to represent an unacceptably high risk, especially bushfire risk.

### 4.1 Our assets

Ausgrid operates one of the largest electricity networks in Australia (ranked by size of asset base) with more than 100 years' experience in delivering a safe and reliable power supply. Until 1 December 2017 it was a major New South Wales government state-owned corporation, however since that date a private consortium holds a 99 year lease of Ausgrid.

Ausgrid services a community of more than three million people with a broad-ranging customer base covering rural, urban, residential and commercial customers, including mining, manufacturing and agricultural industries. Our distribution area (Figure 1) covers an area of 22,275 square kilometres and includes some of the most densely populated and fastest growing areas of NSW.

**Figure 1: Ausgrid's distribution area**



Ausgrid operates both a transmission and distribution network.

Our transmission network comprises:

- 132kV lines that are operated in parallel to and in support of TransGrid's transmission network.
- Substations which are connected to these lines.

While these assets are operated as part of the distribution system for the purposes of the Electricity Supply Act 1995 (NSW), they fall within the definition of a transmission network under the National Electricity Rules. These assets are presently regulated by the Australian Energy Regulator (AER) as if they were part of the distribution system for the purposes of revenue, although transmission pricing rules continue to apply.

Ausgrid's distribution network includes the following network elements:

- a sub-transmission system of 33kV, 66kV and 132kV assets;
- a high voltage (HV) distribution system of predominantly 11kV, with some 5kV, 22kV and 33kV and 12.7kV Single Wire Earth Return assets; and
- a low voltage (LV) distribution system of 400V assets (230V single phase).

These network elements (both transmission and distribution) in combination are referred to throughout this Plan as "the network". Ausgrid's network is planned in accordance with the National Electricity Rules and the

requirements of the Ministerially imposed licence conditions for Ausgrid Operator Partnership to operate a distribution system. (effective from 1 December 2016).

**Figure 2: Typical components of the electricity network**

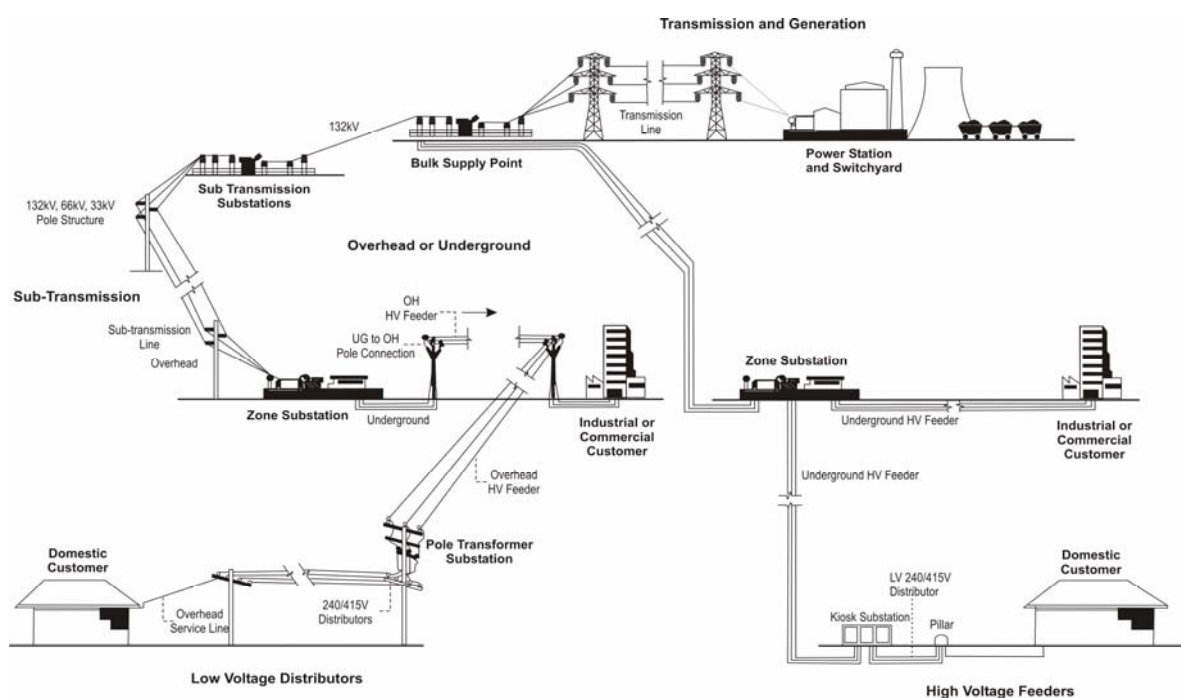


Figure 2 above shows Ausgrid's typical distribution network arrangement. Power is supplied by TransGrid, and distributed via Bulk Supply Points into the sub-transmission network. Other electricity distributors' networks and some power stations also provide supply into our distribution network.

We have an obligation to take all reasonably practicable measures to minimise the risk of our network causing a bushfire.

#### 4.1.1 Design

The design of our network assets is critical to reducing the risk of bushfires. All new and replacement assets must feature appropriate technology in order to limit bushfire risks.

Ausgrid's objective is to design and construct the electricity network so that it can be maintained and operated safely while delivering an adequate, reliable and cost effective electricity supply of appropriate quality.

The approach taken to network asset design by Ausgrid is based on the principles outlined in the National Electricity Network Safety Code published by the Energy Networks Association (ENA) in particular ENA Doc 01-2008 – Section 6 Design and Construction.

The primary reference sources for development and amendment of a Network Standard are the applicable Ausgrid plans including this Bush Fire Risk Management Plan, the ENA Codes & Guidelines, Industry Safety Steering Committee (ISSC) Guidelines and other National and International design standards.

The following matters are considered as being of primary importance when considering the content of a network standard:

- safety, environmental and infrastructure security risk;
- quality of supply; and
- reliability.

Ausgrid's procedure for "Production/Review of Network Standards", available on Ausgrid intranet, incorporates the process Ausgrid uses to set design standards that are to be included in Network Standards.

Under Network Standard NS104 Specification for Electrical Network Project Design Plans, which applies to all electrical works involving Ausgrid's network, designers are required to:

- adhere to relevant legislation, standards and codes of practice;
- consider safety and environmental aspects of the works; and
- declare that the design, as submitted, is fit for its intended purpose.

Ausgrid uses a certification/verification process to manage compliance with its design standards.

Ausgrid's Electrical Safety Rules are the principal procedures that Ausgrid requires all persons to follow when undertaking work on or near the network or on sections of the network that are out-of-service or under construction. Ausgrid uses audit inspection and quality procedures to manage compliance with its construction standards.

A list of Ausgrid's design and construction standards and procedures is published on Ausgrid's website at <http://www.ausgrid.com.au/Common/Our-network/Standards-and-Guidelines/Network-standards.aspx>. Design and construction standards are available to appropriate employees, contractors and Accredited Service Providers.

New and revised design standards include a compliance check and signoff so that the design standard meets the objectives of our Bushfire Risk Management Plan.

In recent years we have identified aspects of our existing assets base that, if left without mitigation, would have the potential to ignite bushfires and we have mitigated that potential by:

- fitting low voltage spreaders to mitigate potential deficiencies in existing low voltage bare overhead constructions in bushfire prone areas; and
- installation of high voltage substation/control point equipment designed to minimise emission of hot particles that could initiate a bushfire for example, high voltage drop out fuses with arc containment.

#### **4.1.2 Inspection and testing**

Our inspection and testing program is ongoing and allows us to identify defects in our network assets that have the potential to start a bushfire and prioritise their repair.

Our inspection and testing regime is based on Reliability Centred Maintenance/Failure Mode Effect and Criticality Analysis processes (including bushfire mitigation).<sup>1</sup> Ausgrid's network assets are managed during the "useful life" phase of the asset lifecycle using a maintenance strategy and associated maintenance standards which are developed from the analysis of failure modes, failure rates and consequences of asset failure. This analysis provides a valuable insight into the behaviour of the assets, which also provides input into the decision to refurbish, retire or replace assets.

Ausgrid is continuing the implementation of a less intrusive maintenance program with targeted condition based testing and asset analysis. These techniques allow us to repair or replace only those assets that require attention, delivering an improved maintenance outcome.

Ausgrid's maintenance documentation is aligned to the requirements of ENA Doc 01-2008 – Section 7 Maintenance with the exception of EMF which is considered to be a design issue, not a maintenance issue.

The principal documents underpinning our maintenance process are the Maintenance Requirements Analysis Manual (MRAM) and the Network Technical Maintenance Plan (NTMP), both of which are available to Ausgrid employees on the Engineering Intranet Balin. The required Maintenance Standards, by major asset class, are accessed via the NTMP web pages on Balin.

Ausgrid uses the inspection, corrective and breakdown maintenance procedures to manage the implementation of the NTMP and associated Maintenance Standards. A list of maintenance standards and procedures applied by Ausgrid is included on the Ausgrid website ([www.ausgrid.com.au](http://www.ausgrid.com.au)) and Balin.

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<sup>1</sup> The Reliability Centred Maintenance approach forms part of an overall asset management framework that aims to minimise asset life cycle costs whilst maintaining acceptable reliability and risk levels. The Failure Mode Effect and Criticality Analysis approach proves a structured method for assessing the likely cause of an asset's failure and the consequences of these failures on safety, asset performance and economics.

Our inspection and testing activities are detailed in the Technical Maintenance Plan (TMP) on Balin. These activities include:

- Conducting annual pre-bushfire season patrols of assets in all areas certified by the RFS as “bushfire prone”;
- Conducting detailed overhead powerline inspections every five years to identify any defects that could affect our overhead network and to prioritise their repair;
- Recording network pole and line inspections and corrective work in our Integrated Asset Management System; and
- Recording substation equipment inspections and corrective maintenance in our Integrated Asset Management System.

We use our Integrated Asset Management System to enable tracking and management of corrective maintenance for all poles and overhead powerlines in bushfire prone areas identified during the pre-bushfire danger season patrols. Corrective maintenance tasks are completed on a prioritised basis, according to the nature and type of defect.

#### 4.1.3 Operation

Ausgrid has several operational procedures in place that effectively reduce the risk of a bushfire starting during the normal operation of our network or when work is taking place.

These include:

- On total fire ban days, Ausgrid’s Network Control Room is notified by the NSW Rural Fire Service of total fire ban conditions and our Network Control Room notifies employees via SMS of the heightened conditions;
- Changing the protection settings on certain equipment during conditions of very high fire danger, by switching the reclose<sup>2</sup> function on nominated high voltage distribution and sub transmission feeders from automatic to manual<sup>3</sup> in high risk bushfire prone areas. This is completed in accordance with Ausgrid’s Company Policy: Bushfire Risk Mitigation – Implementation of Automatic Reclosing for High Voltage Feeders, which is consistent with ISSC 33 and defines how feeders are to be identified for the switching of the reclose function from automatic to manual. Other protection settings such as over-current, earth fault and sensitive earth fault settings are already satisfactory and do not need to be changed during conditions of very high fire danger;
- Our employees and contractors adopt special work procedures and precautions during the bushfire danger season and total fire bans. Notification of total fire ban days is via SMS messaging from our Network Control Room. Risk mitigation procedures are used during construction and maintenance activities to help minimise the risk of causing a bushfire (per Distribution Guideline DG-33B Hot Work During Total Fire Bans);
- Response to minor individual fire instances is prioritised and co-ordinated by our Network Control Room in a similar manner to which it responds to other network disruptions;
- When bushfires cause widespread impacts to Ausgrid’s electricity network, the incident severity is assessed by our Network Control Room after which our Emergency Management Plan and Incident Management System are implemented. The level of response is in accordance with the level of

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<sup>2</sup> High voltage powerlines are protected by automatic equipment, which shuts down the power when a fault is detected. Because most faults on high voltage overhead powerlines are temporary (such as those caused by lightning strikes or tree branches falling on to powerlines) the power is usually turned back on automatically (reclosed) after a delay of a few seconds. However, during times when the conditions are especially risky, such as on total fire ban days, we may turn the automatic reclose function off.

<sup>3</sup> Our procedures for manual re-closing after faults are based on the requirements of ISSC 33 Guideline for network configuration during high bushfire risk days, section 8.5.3 of the Energy Networks Association ENA Doc 01 – 2008 National Electricity Network Safety Code, and Energy Networks Association ENA NENS 07 – 2006 National Guidelines for Manual Reclosing of High Voltage Electrical Apparatus Following a Fault Operation.

response required by the Incident Management System. In all cases, the strategy for a response to an incident will be prioritised from highest to lowest as follows:

1. Safety of Person and Property
  2. Environment
  3. Transmission
  4. High Voltage
  5. Key Customers
  6. Low Voltage
  7. Street Lighting
- We support and assist other Distribution Network Service Providers (DNSPs) by sharing resources and equipment during emergencies, so that supply is restored safely and as quickly as possible;
  - We liaise with NSW Fire Brigade, NSW Rural Fire Service, Local Councils and other authorities during Regional Bushfire Risk Management planning and during actual bushfire events, and;
  - We participate in electricity industry debriefs following major bushfire incidents and implement improvements identified in these sessions.

## 4.2 Our customers' assets

Bushfire risk management for electrical equipment is a shared responsibility between Ausgrid and all landowners/occupiers who are customers in our distribution area.

Ausgrid inspects, tests and maintains the assets we own. Ausgrid also has obligations under the Electricity Supply (Safety and Network Management) Regulation 2014 (NSW) regarding the safety of electrical installations of customers connected to Ausgrid's network. However, it is the responsibility of landowners/occupiers to keep their electrical installations<sup>4</sup> free from defects that could cause fire or other hazards.

Customers are responsible for keeping the powerlines which they own free of vegetation, and this includes only planting appropriate trees in areas that are close to powerlines. Customers are also responsible for inspecting, testing and maintaining their powerlines and poles at regular intervals – just as we are.

We have developed a new policy in regard to the management of privately owned overhead powerlines whereby Ausgrid proactively inspects private overhead powerlines in bushfire prone areas and subsequently deals with those powerlines that are found to represent an unacceptably high risk, especially bushfire risk. Ausgrid inspects private overhead powerlines in bushfire prone areas in accordance with their Network Standard NS 262 Private Mains Bushfire Risk Inspection, and any bushfire risk issues identified are dealt with in accordance with Division 2A of the Electricity Supply Act 1995 (NSW).

To assist our customers to meet these requirements we aim to:

- clearly communicate to customers their obligations in our publications ES1 Customer Connection Information;
- provide customers with detailed safety information (via brochures and website); and

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<sup>4</sup> Ausgrid uses the Service & Installation Rules of NSW to determine the delineation of private electrical installations from network assets. Our requirements for the inspection and maintenance of private overhead powerlines are detailed in our publication ES1 Premises Connection Requirements, our Deemed Standard Connection Contract, the Network Standards referenced in ES1 and the Service and Installation Rules of NSW. Under the Electricity Supply (Safety and Network Management) Regulation 2014, we have taken into account the Industry & Investment NSW Code of Practice (Electricity) – Service & Installation Rules of NSW, August 2012. The Service and Installation Rules of NSW are prepared in accordance with the Code of Practice.



- advising customers of any defects observed on their powerlines and poles (by members of the public or our employees) by issuing notices and following up actions where appropriate.<sup>5</sup>

In cases where private powerlines are not being used or customers have not rectified safety defects that have been identified, it may be necessary for us to disconnect these powerlines. This may include removing any overhead service line to the customer's installation.

Where a customer no longer requires supply and a final account is issued, and assuming there are no defects, new customers have six months to request supply before any disconnections occur. Even when a service has been disconnected, the landowner/occupier remains responsible for maintaining the customer installation in a safe condition.

Ausgrid has a review process consistent with the Network Operator Review outlined in the Industry Safety Steering Committee ISSC 31 document (Guideline for the Management of Private Overhead Lines). We also have a process for the disconnection of unused private powerlines in rural bushfire prone areas. The customers' obligations regarding maintenance of their installation have been incorporated into the Service and Installation Rules of NSW and our Deemed Standard Connection Contract.

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<sup>5</sup> Ausgrid's process for the management of bushfire risk safety defects in customers' installations is in accordance with Division 2A of the Electricity Supply Act 1995 (NSW), which is an amendment that came into effect in November 2014. .

## 5 Managing vegetation

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Our Vegetation Management Program helps to prevent bushfires and reduce supply interruptions related to contact between vegetation and overhead powerlines.

Guidelines on vegetation safety management issues are given in our Tree Safety Management Plan. This plan was developed after an extensive public consultation process involving the community, local councils and organisations such as the NSW National Parks and Wildlife Service. The Tree Safety Management Plan aims to:

- reduce the risk of fires and power interruptions related to branches touching overhead powerlines;
- minimise the possibility of electrocution; and
- achieve and maintain safe clearances while protecting the health of each tree.

The Tree Safety Management Plan also provides advice on the most appropriate trees to plant near powerlines and highlights the importance of engaging only qualified tree trimmers to conduct any trimming work required.

### 5.1 Safe clearances

To help prevent the possibility of trees causing bushfires or outages, we manage vegetation safety clearances on or near our network using the Tree Safety Management Plan, and internal guidelines which require that the safety clearances specified in Networks NSW Vegetation Common Requirement (VMCR) are to be applied to all situations as specified in the document. The VMCR provides for additional vegetation safety clearances in bushfire prone areas. The VMCR also defines regrowth allowances, defect categorisation, prioritisation and rectification times. Ausgrid otherwise manages vegetation in accordance with ISSC 3.

The VMCR was endorsed by the NSW Distribution Network Service Providers (DNSPs) (acting together as Networks NSW) and used as the basis of a common vegetation management specification. Before adopting the clearances specified in the VMCR Ausgrid conducted a gap analysis (risk assessment) to address the differences between the clearances specified in the VMCR and those specified in ISSC 3. This highlighted no increased risk between the VMCR and ISSC 3. Issues identified during the development of the VMCR relating to some clearances have been referred to the Industry Safety Steering Committee (ISSC) and a working group was subsequently been convened to undertake a review of the ISSC 3 Guideline for Managing Vegetation Near Power Lines document. This review was completed in June 2016 with the publishing of a new version of ISSC 3 and Ausgrid is presently considering how it will implement the outcomes of the review.

We have initiated a project to improve the management of long spans by developing a better understanding and balancing of risk, reliability, environmental and cost factors.

It should be noted that ISSC 3 specifies that vegetation management work must only be performed by qualified and authorised persons working in accordance with Ausgrid's Electrical Safety Rules when vegetation is being trimmed near energised powerlines.

Our document ES1 – Premises Connection Requirements, sets out similar requirements for our customers who must maintain the safety clearances between trees and their private overhead powerlines in accordance with ISSC 3.

## 6 Communicating risks and responsibilities

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Our Communications Program informs our customers of their obligations in bushfire risk mitigation

We communicate bushfire and other safety messages to our customers and the wider community in the following ways:

- We provide detailed information on customer obligations relating to private powerlines and poles, as well as information about bushfire risks using newspaper/radio advertising, mail outs and our website ([www.ausgrid.com.au](http://www.ausgrid.com.au));
- We provide general information on the dangers of bushfires including links to the NSW Rural Fire Service website ([www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au));
- We issue Customer Installation Advices (CIAs) and Network Standards Advices (NSAs) so that current design standards are communicated to all employees, contractors and Accredited Service Providers. These are published on our website along with Electricity Supply Standards and Network Standards;
- We provide specific information to customers about private overhead powerlines advising them of the hazards and the safety precautions to be followed;
- We use media releases to provide information to the general public about the fire hazards associated with overhead powerlines and vegetation;
- We use radio advertisements and other mediums to provide information to the general public about the fire hazards associated with overhead powerlines and vegetation, particularly during the bushfire season; and
- We issue notices to customers regarding their powerlines and poles whenever defects are found.

## 7 Handling inquiries and complaints

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Our Customer Care System helps us effectively manage all inquiries and complaints.

Ausgrid strives to respond to customer inquiries and complaints in a timely and efficient manner.

Phone calls to our 13 13 65 inquiry line and emails to our website are managed by our Contact Centre and are referred to specific business areas when appropriate.

Complaints relating to safety issues including bushfire risks always receive priority.

Ausgrid uses an Outage Management System (OMS) to record and track outages on its electrical network. This includes reports of hazards such as “wires down” or “wires arcing” and other safety related incidents, as well as general “no supply” issues.

Ausgrid uses OMS in identifying network issues, classifying jobs, managing its response and recording job completions. Calls received via OMS can be tagged as bushfire related and this information is considered when assessing jobs and setting priorities.

## 8 Building relationships with relevant agencies

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We are committed to building and maintaining relationships with all agencies involved in bushfire risk mitigation.

In addition to maintaining ongoing communication with our customers, employees and contractors, Ausgrid also spends time building relationships with emergency services, government agencies and the industry as a whole.

We have developed strong associations with the NSW Rural Fire Service, the New South Wales Fire Brigade, local councils and the State Government. We also work alongside other electricity distributors and industry colleagues to effectively manage bushfire mitigation at a state-wide level.

These liaisons include:

- participation in Regional Bushfire Risk Management forums;
- participation in industry debriefs following bushfires;
- providing “hands-on” assistance during bushfires (e.g. assisting ActewAGL to restore power during the January 2003 bushfires in Canberra and offered assistance during the February 2009 Victorian and October 2013 NSW Blue Mountains bushfires);
- information sharing with the NSW Rural Fire Service so that accurate bushfire prone land maps are used and RFS staff have sufficient training when fighting fires around network assets; and
- working with the other electricity distributors, IPART, and NSW Fair Trading, to develop Industry Safety Steering Committee (ISSC) and other relevant Guidelines.

## 9 Management and reporting

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Our management and reporting framework helps us comply with the requirements of IPART.

Ausgrid operates under a due diligence framework under which all risks are identified and an appropriate system of compliance is put in place.

This Bushfire Risk Management Plan together with supporting documents, policies and procedures are managed in accordance with Ausgrid's quality management system.

This Plan incorporates management of inspection, preventative and corrective maintenance of our network assets.

- We record all network pole and line inspections and corrective work in our Integrated Asset Management System. Post fault patrols are conducted on a high voltage feeder or low voltage distributor basis, with all known causes documented in our Outage Management System, and any required corrective work recorded in our Integrated Asset Management System; and
- We track and analyse inspection and corrective work records in the Integrated Asset Management System.

### 9.1 Schedule of reports to IPART

We monitor our performance against this Plan and report to IPART annually in our Bushfire Risk Management Report, available on our website ([www.ausgrid.com.au](http://www.ausgrid.com.au)).

We advise IPART of any serious electricity network accidents or actionable incidents relating to bushfire risk management (under the Significant Electricity Network Incidents reporting framework).

## 10 Reference documents

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- Ausgrid Company Policy: Bushfire Risk Mitigation – Implementation of Automatic Reclosing for High Voltage Feeders
- Australian Standard AS 5577-2013 Electricity Network Safety Management Systems
- Electricity Supply Act 1995 (NSW)
- Electricity Supply (Safety and Network Management) Regulation 2014 (NSW)
- Environmental Planning and Assessment Act 1979 (NSW)
- Ministerially imposed licence conditions for Ausgrid Operator Partnership to operate a distribution system. (effective from 1 December 2016)
- Rural Fires Act 1997 (NSW)
- The Service and Installation Rules of NSW November 2016 are available from:  
<http://www.resourcesandenergy.nsw.gov.au/energy-supply-industry/pipelines-electricity-gas-networks/network-connections/rules>

The documents listed below are available on Ausgrid's website [www.ausgrid.com.au](http://www.ausgrid.com.au)

- ES1 Premises Connection Requirements
- Policy for ASP/1 Premises Connections
- Tree Safety Management Plan
- Your Powerlines: Safety and Bushfire Prevention (Customer Information Brochure)

The following Network Standards are available on Ausgrid's Balin engineering information system:

- NS 104 Specification for Electrical Network Project Design Plans
- NS 145 Pole Inspection and Treatment Procedures
- NS 166 Line Inspection
- NS 262 Private Mains Bushfire Risk Inspection
- Networks NSW Vegetation Management Common Requirements (VMCR)

Copies of the Energy Networks Association publication listed below can be obtained from: [www.ena.asn.au](http://www.ena.asn.au)

- Energy Networks Association ENA Doc 01-2008 National Electricity Network Safety Code
- Energy Networks Association ENA NENS 07 - 2006 National Guidelines for Manual Reclosing of High Voltage Electrical Apparatus Following a Fault Operation.

Copies of the Industry Safety Steering Committee publications listed below are available from:

[http://www.resourcesandenergy.nsw.gov.au/energy-supply-industry/pipelines-electricity-gas-networks/electricity-networks/safety#\\_electricity-\\_industry-\\_safety-\\_steering-\\_committee-\\_guidelines](http://www.resourcesandenergy.nsw.gov.au/energy-supply-industry/pipelines-electricity-gas-networks/electricity-networks/safety#_electricity-_industry-_safety-_steering-_committee-_guidelines)

- Industry Safety Steering Committee publication ISSC 3 Guideline for Managing Vegetation Near Power Lines (published in December 2005).
- Industry Safety Steering Committee publication ISSC 31 Management of Private Overhead Lines: NSW Guideline (published in July 2004).
- Industry Safety Steering Committee publication ISSC 33 Guideline for network configuration during high bushfire risk days (published in February 2010).

