

Network Management Plan

Chapter 4: Bush Fire Risk Management Plan

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1 OBJECTIVE

The objectives of Country Energy's Bushfire Risk Management Plan are to:

- ENSURE public safety
- ESTABLISH standards for vegetation management near electricity lines, particularly in bushfire prone areas
- REDUCE electricity supply interruptions related to vegetation
- MINIMISE the possibility of fire ignition due to electricity lines and associated equipment
- MINIMISE any other adverse impact of power lines on vegetation
- ENSURE a balance between bushfire risk management, vegetation management and the provision of a safe, reliable and adequate supply of electricity of appropriate quality.

2 INTRODUCTION

Country Energy is the largest regionally based energy provider in Australia. Our core business is the distribution and retail supply of electricity to customers in a specified geographical boundary of New South Wales, with 770,000 network service customers and covering 95% of New South Wales.

Country Energy's Network Asset Management Strategies and practices have been established in line with organisational objectives, supporting Country Energy's ambition to be the country's leading energy and services provider.

The key focus areas of the business are our customers, safety, community excellence, business improvement, learning and growth, service excellence, the environment and our stakeholders combined with our network service delivery objectives.

Country Energy has a significant investment in its physical electrical network and non-system assets. The business requires that these assets and other resources be efficiently and effectively managed to maximise value to all stakeholders.

This involves prudent risk Management Planning and ensuring that Country Energy's network services meet customer requirements in a safe, reliable and cost-effective manner.

Mindful of these objectives, Country Energy's Bush Fire Risk Management Plan has been developed to identify and minimise the possibility of bushfires emanating from or causing damage to Country Energy's or privately owned power line assets.

3 PURPOSE

Country Energy is committed to achieving its ambition of being Australia's leading energy supplier. To facilitate this, effective asset management strategies are in place to ensure the safe and reliable operation of our network. A key component of these strategies is to manage our assets in a manner that will minimise the risk of bushfires, protect our assets and maintain customer supply reliability during bushfire risk periods.

FOR PUBLIC RELEASE

This Code of Practice forms part of Country Energy's obligation under the Electricity Supply (Safety and Network Management) Regulation 2008 to prepare and implement the following plans:

- Network Management Plan Chapter 1 – Network Safety and Reliability
- Network Management Plan Chapter 2 – Customer Installation Safety Plan
- Network Management Plan Chapter 3 – Public Electrical Safety Awareness Plan
- Network Management Plan Chapter 4 – Bushfire Risk Management Plan.

This Bushfire Risk Management Plan along with other supporting Country Energy policies and codes of practice is also intended to provide guidance for bushfire risk management in franchise areas other than in Victoria where a separate Bushfire Mitigation Plan is required under the Victorian Electricity Safety Act - 1998 and a separate Vegetation Management plan is required under the Electricity Safety (Electric Line Clearance) Regulations 2005.

4 SCOPE

The Bushfire Risk Management Plan covers the following key issues:

- Identification of bushfire prone areas and network assets capable of initiating bushfires managed by a system which ensures this information is kept up to date
- Asset maintenance procedures
- Vegetation management strategies and procedures
- Equipment and construction standards as related to bushfire mitigation
- Information relating to the rights and duties of customers who own private powerlines and the dangers of trees coming into contact with those lines
- Asset maintenance procedures for private powerlines and provisions to ensure maintenance standards are enforced by the network operator (Country Energy in this case)
- Management of complaints in relation to bushfire risk management and procedures to ensure appropriate investigations and remedial actions are undertaken as required
- Liaison and consultation with other organisations in relation to bushfire risk management issues
- Information for the general public about fire hazards associated with overhead powerlines and vegetation
- Special operating procedures and precautions during times of high fire danger
- Reporting to the Department of Water and Energy.

5 AVAILABILITY OF PLANS

In accordance with the Regulation, the Bushfire Risk Management Plan will be made available to all stakeholders who are likely to be involved in its implementation. This includes customers, agencies (as defined in the State Emergency and Rescue Act 1989), contractors, accredited service providers and staff.

To obtain a copy of the Plan:

- Visit Country Energy web-site at www.countryenergy.com.au
- Phone Country Energy's Call Centre on 13 23 56 or
- Send an email to: info@countryenergy.com.au.

6 KEY TERMS AND DEFINITIONS

In this document the following terms have the meanings, as listed below:

Bushfire Danger Period: is the period between 1st October and 31st March each year or as declared by the local council.

Total Fire Ban: is a declaration made by the Commissioner of the NSW Rural Fire Service on days of extreme fire danger during which no fire of any type may be lit or maintained in the open.

Bushfire Prone Area: Designated high bushfire risk location.

Private Lines: For the purpose of this Plan means lines that:

- connect to the primary point /s of attachment of a dwelling, shed, pump house or other structure i.e., directly connected to local overhead network, and
- comply with Country Energy's or previous electricity distributor's construction standards and specifications at time of installation, and
- are generally indistinguishable from Country Energy's network both in appearance and function.

Private lines for purpose of this Plan **do not** include:

- a subcircuit originating from a dwelling, shed, pump house or other structure, or
- square or round steel pipes and poles, or
- square wooden poles, or
- all other submains type installations i.e., tennis courts, sportsgrounds, caravan parks, showgrounds, etc.

7 STRATEGIES

7.1 Background to implementation of Strategies

Country Energy's network consists of approximately 200,000 kilometres of subtransmission, high voltage and low voltage distribution power lines, and in excess of 1.4 million poles with authorised supply areas extending into Queensland, Victoria and the ACT.

This network of "wires" is predominantly an overhead system that traverses terrain varying from coastal, alpine and mountainous in the east to the open plains in the west, exposed to a variety of extreme climatic conditions.

Country Energy's subtransmission networks operate at 132kV, 110kV, 66kV, or 33kV whereas its distribution networks operate at 22kV, 11kV and Single Wire Earth Return (SWER) systems at 19.1kV, 12.7kV and 6.35kV. Low voltage mains reticulation is at 400/230 Volts. The countryside of south-eastern Australia is one of the most flammable in the world. The combination of oil-bearing eucalyptus trees, dry grass, low humidity and hot, gusty winds results in many days of extreme fire risk. Fires can cause enormous property, livestock and wildlife losses, together, at times, with loss of human life. As any overhead electricity reticulation system is a potential source of ignition, the possible consequences of any fault in the system can be serious.

Environmental conditions are clearly a significant factor affecting the risk of a serious fire where electricity network assets are involved. This plan has been developed with the aim of minimising the risk of fire ignition under these extreme conditions.

7.2 Identification of Bushfire Prone Areas

The following strategies have been adopted to identify bushfire prone areas within the Country Energy supply area, and the process for identifying network assets capable of initiating bushfires and a system to ensure that this information is kept up-to-date.

Bushfire prone areas are identified and classified in consultation with local Councils and the NSW Rural Fire Service. These areas are clearly delineated on Country Energy's Geographical Information System database, which is used by all relevant network staff for strategic and operational decision making.

This system enables the retrieval of information relating to the physical location and layout of assets, as well as including geographical features such as roads, rivers, local government boundaries etc. which are more appropriately represented in a geo-spatial format.

Country Energy carries out a pre-summer inspection on all bushfire prone lines as well as a cyclic time based maintenance regime for all pole and line assets. This information is held within Country Energy's Asset Management system. This system is regularly updated when projects are signed off as completed. The 'as constructed' information is cross referenced against data previously entered into the Asset Management System as, 'work in progress'. When validation is completed, the 'work in progress' status is removed.

In addition to the Asset Management System, Country Energy has also developed a Network Incident Reporting System. Fire and pole failure reports are attached to the embedded incident report (database) where investigation, analysis and recommendation fields are also completed. This database provides a proactive tool for identifying 'problem' network assets capable of initiating bushfires.

Information is also actively sought from the Public as part of our Safety and Bushfire awareness campaigns.

7.3 Asset Maintenance

To ensure that network assets identified in bushfire prone areas are inspected, tested and maintained in accordance with a suitable maintenance schedule, Country Energy has developed the following strategies.

Prior to October of each year either aerial or ground inspections are carried out on all lines in bushfire prone areas. Aerial inspections are used for approximately 80% of all bushfire prone areas.

In addition to yearly bushfire mitigation patrols, vegetation maintenance is carried out on a 2 or 3 year cycle depending on regional vegetation growth rates. Typically coastal and other high rainfall regions are 2 years whereas a 3 year cycle or even longer is acceptable inland. Pole and line inspections are carried out on a 4.5 year cycle. Other equipment is also routinely inspected.

These inspections are used to identify equipment which has the potential to fail.

The purpose of bushfire mitigation patrols is to identify any factors associated with overhead lines that could lead to fire initiation, including inadequate vegetation clearances, impact damage, lightning damage or other defect. Country Energy places the utmost priority on maintenance of defects that are identified during inspections and carries out remedial work to rectify these defects.

7.4 Vegetation Management

To ensure vegetation clearances, particularly in bushfire prone areas, are maintained in accordance with appropriate codes, standards and guidelines, the following strategies have been implemented:

Country Energy's Vegetation Management Plan "Trees for Life" stipulates the required clearances and adheres to the requirements of ISSC3 – 2005 (Industry Safety Steering Committee Guideline No. 3 Guide to Managing Vegetation near Power Lines), of additional clearances in bushfire prone areas.

There is an increasing public awareness of environmental issues and the need to grow more trees. This can lead to the planting of inappropriate trees in a variety of situations. Directly relevant to Country Energy are those planted under or near powerlines. Planting of inappropriate species can jeopardise public safety when powerlines are knocked down by trees or when the public trim or remove trees near powerlines. Under NSW legislation, the planting of inappropriate species makes the planter responsible for future trimming and/or removal costs, and could lead to legal liability for damages. It is therefore in everyone's interests to reduce these costs and the associated risk by reducing the number of inappropriate plantings. Planting the wrong tree in the wrong place can also have environmental consequences. Bushfires have started because of vegetation coming into contact with powerlines resulting in a loss of flora, fauna, life and property.

Country Energy encourages the planting of trees and other tall growing vegetation away from powerlines. Country Energy publishes a list of trees that are unsuitable to be planted near powerlines.

Country Energy's safety awareness campaign also highlights the need to be careful when near powerlines and the need to use only suitably qualified and authorised operators when clearing trees near powerlines.

Country Energy also seeks to work with Local Councils in a cooperative manner to ensure effective vegetation management in the best interests of the community as a whole. We are endeavouring to enter into "In Principle" agreements regarding vegetation management near power lines with all Shires and Councils.

7.5 Construction and Design Standards

Country Energy reviews equipment types and construction methods known in their operation or design to have bushfire ignition potential, and has introduced mitigation strategies in relation to their use.

Country Energy has implemented an integrated, organization-wide Asset Management System. This System along with the Incident Notification Database is used to identify specific equipment types and failure modes and allow fire-risk equipment or designs to be identified and reviewed so as to reduce or eliminate risk at the design stage.

A risk management approach to the development of network standards has seen various changes to network standards to reduce the risk of bushfires. Examples of these changes include the use of more underground cable, more covered conductor for overhead high and low voltage lines and low voltage spreaders on bare overhead lines to prevent conductors clashing.

Also, a move to high voltage ‘delta’ pole-top construction which provides greater vertical and horizontal clearances between conductors reduces the likelihood of clashing conductors from external sources such as wind, birds or vehicle collision.

The various Network Standards that existed prior to the amalgamation of various distributors to form Country Energy have now been unified to create a common regime across the organization. All standards are treated as controlled documents, with Staff and Accredited Service Providers issued with copies. Designs are required to be approved and the final construction audited for compliance. When a variation to the standards is associated with safety, all staff and Accredited Service Providers are notified promptly.

7.6 Private Lines and Trees

Country Energy informs customers with private overhead lines of the dangers of vegetation coming into contact with overhead power lines.

Country Energy has developed a comprehensive Public Electrical Safety Awareness Plan and Vegetation Management Plan. These plans are designed to develop increased customer awareness of safety in relation to the planting and control of vegetation near powerlines.

Country Energy’s education program includes:

- Planting guidelines
- Posters relating to vegetation management
- Newspaper articles and press releases
- Safety tips on Customer accounts
- Liaison with landowners/occupiers, State Government bodies, Bushfire Management Committees, LandCare, Garden Clubs, Progress Associations, Tidy Towns, Koala Societies, Beautification Committees, etc as appropriate
- Attendance at Community or other Group meetings
- Attendance at field days e.g. ‘AgQuip’, tree fairs etc.
- Qualified staff to assist the Community with any problems or inquiries they may have in relation to vegetation control near powerlines
- Any other opportunity to educate the community.

Country Energy identifies and notifies customers where trees are approaching overhead powerlines. Due to risks inherent when working near overhead powerlines the following warning is included in all letters delivered to property owners where tree clearing is required.

“WARNING: Trimming and/or removing trees in the vicinity of overhead powerlines can be VERY dangerous. Any trimming and/or removal works should be carried out by a suitably qualified and authorised contractor.”

A list (including contact details) of Country Energy authorised tree trimming contractors, is included in these letters.

7.7 Private Line Maintenance

To ensure that private overhead lines located in bushfire prone areas, capable of initiating a Bushfire are inspected, tested and maintained in accordance with a suitable maintenance schedule and that appropriate standards are enforced, Country Energy has adopted the following strategies.

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The nine regions of Country Energy have inherited various policies concerning the delineation point between its network assets and Private installations. Country Energy inspects all lines on a four and a half year cycle including private lines. In addition, yearly pre-summer inspections on all open wire lines in bushfire prone areas are undertaken. This ensures a common inspection regime is applied to all lines throughout Country Energy's franchise area.

Country Energy will continue to maintain those Private assets that have historically been maintained by the Distributor.

Country Energy's Customer Installation Safety Plan has been developed to ensure suitably trained Service Providers carry out the installation of private overhead lines in a safe manner. This Plan incorporates:

- Monitoring of the standard of electrical work and confirming appropriate testing procedures have been implemented by the installing electrical contractor/s
- Establishment of an inspection program to meet documented safety outcomes
- Achieving more efficient/effective connection of installation work to supply while maintaining established safety records
- Ensuring that the responsibilities of all parties are clearly understood.

Country Energy also seeks to work in a cooperative manner with private landowners/occupiers to resolve Vegetation issues.

Under NSW legislation, private landowners are responsible for trimming and removal costs for vegetation on their property where the vegetation has been planted and allowed to grow directly under or along side power lines. This vegetation has the potential to cause bushfire ignition and poses a potential risk to public safety.

Every effort is taken to avoid the need to formally issue a defect notice. If the defect is not remedied, Country Energy has in place procedures that will lead it to carrying out the work and recovering appropriate costs from the owner of the tree.

When a pole or line defect on a privately owned power line is found, the customer will be notified in writing and given adequate time to have the defect rectified. Here again, Country Energy seeks to work in a cooperative manner with landowner/occupier to resolve any private line issues.

If the defect has not been rectified after due process has been undertaken, Country Energy in accordance with section 1.9.5 and 1.9.7 of NSW Service and Installation Rules and AS/NZS 3000 Wiring Rules is required to isolate or disconnect defective apparatus.

Country Energy actively encourages any new or reconstructed private low voltage power lines in bushfire prone areas to be placed underground by providing incentives to customers where there is a perceived advantage for both parties.

7.8 Customer Complaint Procedure

To ensure that Country Energy records any complaints in relation to bushfire risk management and that appropriate investigations are made and remedial actions undertaken, Country Energy has developed procedures and electronic systems for receiving and handling customer enquires and complaints. This ensures that:

- Enquires are co-coordinated and feedback is supplied to the customer
- Appropriate investigation is initiated
- Customer responses are prompt and accurate.

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Complaints and other enquiries are resolved by allocation of a responsible person to oversee the resolution of the complaint and by escalating the complaint if not actioned within a predetermined period.

7.9 Bushfire Liaison and Consultation

Country Energy will liaise and consult with the NSW Rural Fire Service, NSW Fire Brigades, local government and other relevant government departments regarding bushfire-related matters. Where requested Country Energy will:

- Provide representation on local and regional bushfire committees
- Participate in local and regional emergency plans, their preparation and any operative exercises or testing of such plans
- Provide bushfire liaison officers for Fire Control Centres.

These bushfire liaison officers will be a direct communications link between the fire control centre and Country Energy's System Operations. Their task will be to provide relevant information regarding network faults to the fire control centre and conversely supply information to Country Energy's control room regarding hazardous situations and where assistance is required by the Rural Fire Service.

Country Energy will undertake an active role in Electricity Industry forums relating to bushfire Management with the aim of improving network performance and reducing bushfire risk.

In addition Country Energy has a Crisis Management and Recovery Plan (CEPG8078) and a supporting manual (CEM7032) which outline the roles and responsibilities of nominated senior staff. In a bushfire situation the role of the Emergency Services Coordinator in the plan is to advise, arrange and coordinate ambulance, fire services, SES, EPA and other emergency services as required.

7.10 Fire Hazards Associated with Overhead Power Lines and Vegetation

Country Energy will inform the general public about the fire hazards associated with overhead power lines and vegetation, particularly during storms and conditions of high fire danger.

Country Energy has developed a Bushfire Awareness Campaign to inform the community of fire hazards associated with overhead power lines and vegetation. The aim of the campaign is to heighten the Public's awareness of these hazards prior to and during the high fire danger period.

7.11 Special Procedures and Precautions

To ensure that during conditions of extreme fire danger, special procedures and precautions are taken by staff and accredited Service Providers to minimise the risk of bushfire ignition by network assets or work practices, Country Energy has developed the following work practice:

- During periods of total fire ban no attempt of restoration of supply is carried out in fire prone areas unless a line patrol has been undertaken. This is part of Country Energy's risk assessment procedure for Manual Reclosing of Overhead Lines (CEPG2062)
- This risk assessment procedure is also used to determine whether to disable the automatic line re-energisation function
- The installation of sensitive earth fault protection on rural feeders. As the name implies this type of protection will operate at very low levels of fault current (i.e. a tree branch leaning against a line but still in contact with the ground). This is an ongoing program with priority given to high bushfire prone areas

- A separate Country Energy code of practice CEPG8021 Bushfire Prevention, Control and Survival has been developed and covers work practices for the use of plant, tools and equipment during periods of high fire danger and total fire ban.

Throughout Country Energy’s network there are installations that have priority in regard to power restoration. Such critical installations include:

- Hospitals
- Dwellings with various life support systems, including aged-care and domestic dwellings
- Water supply pumping stations and boosters
- Sewerage pumping stations and boosters
- Communication facilities.

Specific listings of such sites are located in Operational Control Rooms and reviewed periodically.

7.12 Reports to the Director-General and Performance Indicators

Country Energy complies with reporting requirements of the *Electricity Supply Act 1995*, the Regulations under the Act, the Director-General, the Department of Water and Energy and its Electricity Distributor Licence.

These reports include, but are not limited to the following:

- Network assets inspected in bushfire prone areas
- Private overhead lines inspected in bushfire prone areas
- Outstanding network risk defects in bushfire prone areas
- Fires where it appears ignition may have been caused by network assets
- Fires where it appears ignition may have been caused by private overhead lines.

The Annual Network Performance Report includes information on maintenance, reliability and safety aspects of the operation of Country Energy’s transmission and distribution systems.

Additionally Country Energy will report as required by the NSW Director-General.

8 AUDIT REQUIREMENTS

Should an audit of the Network Management Plan Chapters 1-4 be required by the Director General under Clause 15 of the Electricity Supply (Safety and Network Management) Regulation 2008 Country Energy will agree with the Director General on a suitable independent auditor to undertake the audit function.

8.1 Supporting Documentation

The following documentation forms a key part of the framework to achieve Country Energy’s objectives as related to this Bushfire Risk Management Plan at a corporate and operational level.

- CEM7097 – Overhead Design Manual
- CEM7099 – Overhead Construction Manual
- CEPG1007 – Mains and Distribution Field Equipment Maintenance
- CEPG1009 – Distribution Substation and Switchgear Maintenance

- CEPG2062 – Manual Reclosing of Overhead Lines
- CEPG2111 – Corporate Risk Management Procedure
- CEPG8029 – Network Management Plan Chapter 1 – Network Safety and Reliability
- CEPG8004 – Network Management Plan Chapter 2 – Customer Installation Safety Plan
- CEPG8005 – Network Management Plan Chapter 3 – Public Electrical Safety Awareness Plan
- CEPG8008 – Vegetation Management Plan
- CEPG8010 – Electrical Network Asset Inspection
- CEPG8021 – Bushfire Prevention, Control and Survival
- Country Energy’s Crisis Management and Recovery, Regional Emergency Response and Divisional Continuity Plans.

9 REFERENCES

CEM7097 – Overhead Design Manual

CEM7099 – Overhead Construction Manual

CEM7199 – Underground Design Manual

CEPG1007 – Mains and Distribution Field Equipment

CEPG1009 – Distribution Substation and Switchgear Maintenance

CEPG2062 – Manual Reclosing of Overhead Lines

CEPG2111 – Corporate Risk Management Procedure

CEPG8002 – Protection Guidelines

CEPG8003 – Subtransmission and Distribution Network Planning Criteria & Guidelines

CEPG8029 – Network Management Plan Chapter 1 – Network Safety and Reliability

CEPG8004 – Network Management Plan Chapter 2 – Customer Installation Safety Plan

CEPG8005 – Network Management Plan Chapter 3 – Public Electrical Safety Awareness Plan

CEPG8008 – Vegetation Management Plan

CEPG8010 – Electrical Network Asset Inspection

CEPG8021 – Bushfire Prevention Control and Survival

Country Energy website www.countryenergy.com.au

Country Energy’s Works Improvement Notice (WIN) database

Country Energy’s Contact Management System database

NSW Electricity Supply (Safety and Network Management) Regulation 2008

State Emergency and Rescue Management Act 1989

Victorian Electricity Safety Act 1998

Victorian Electricity Safety (Electric Line Clearance) Regulations 2005

AS/NZS 4360:2004 'Risk Management'

AS/NZS 3000:2000 Australia and New Zealand Wiring rules

HB 436:2004 Risk Management Guidelines

!SSC3:2005 Guide to Managing Vegetation near Power Lines

10 REVISIONS

Issue	Section	Details of Changes in this Revision
2	All	Audit Certificate Included
3	All	Update to new CE template
4	All	To comply with updated Electricity Supply (Safety and Network Management) Regulation 2008
5	Section 7.7	Change of clause from 7.7 to 1.9.5 and 1.9.7. Reference is now AS/NZS 3000