# NETWORK MANAGEMENT PLAN

## > Bushfire Risk Management Plan

## > Chapter 4

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# 1 OVERVIEW

Essential Energy operates Australia's largest electricity network spanning 95 per cent of New South Wales and parts of Southern Queensland.

Essential Energy has a significant investment in its electricity network and non-system assets which are operated in a cost efficient and effective manner to ensure value is maximised for customers and stakeholders. This involves prudent risk management planning and ensuring that Essential Energy's network services remain safe, reliable and sustainable. This plan details Essential Energy's strategies to manage the potential risks associated with the company's assets causing fire ignition.

South-eastern Australia contains large areas of relatively high bushfire risk with historically, the likelihood and consequence of catastrophic fires being more prominent in Victoria in comparison to other states.

The combination of oil-bearing eucalyptus trees, dry grass, low humidity and hot, gusty winds result in periods of high fire risk. Fires can cause enormous property, livestock and wildlife losses and pose a real threat to human life.

All overhead energy networks are a potential source of ignition and pose the risk of causing widespread and significant damage should a network fault occur during periods of high risk.

## 1.1 Consultation

Essential Energy's Bushfire Risk Management Plan is developed in consultation with, and encourages feedback from, relevant key stakeholders. These include (but are not limited to) Local Councils, residents and local community groups. Consultation efforts include:

- direct liaison with Local Councils and Regional Advisory Groups (community representatives) and other identified community groups
- written notice to relevant Essential Energy customers
- publication in a local newspaper coupled with exhibition placement at the relevant Local Council/s.

## 1.2 Feedback and Review

Essential Energy will review this Plan regularly to promote opportunities for continual improvement and facilitate community and stakeholder consultation. Feedback can be provided at any time and will be considered during the next scheduled Policy review.

Written submissions should be addressed to:

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# 2 OBJECTIVES OF THE PLAN

The Plan aims to:

- assist relevant managers and field personnel understand the activities associated with reducing fire ignition potential within the Essential Energy network area
- establish a framework of strategies to reduce the likelihood of fire ignition as it relates to Essential Energy assets and manage the risks associated with operating powerlines near vegetation
- comply with regulatory requirements and expectations.

Key aspects of the plan include the management of:

- vegetation clearances relating to powerlines
- asset inspection regimes (including annual pre-summer inspections)
- private powerlines
- asset maintenance including defect priority and rectification
- refurbishment of ageing infrastructure.

Essential Energy is committed to, and responsible for, implementing systems to measure, monitor, manage and improve its Bushfire Mitigation Plan with a budget allocation in place to support relevant activities. These activities include vegetation control, asset inspection, pole and attachment maintenance and replacement – which are scheduled to be conducted in readiness for the forthcoming bushfire season.

Adherence to this Bushfire Mitigation Plan is vital for protecting the environment, energy employees, communities and Essential Energy assets. This Plan will be achieved through the commitment and cooperation of managers and employees within Essential Energy.

Delivery of Essential Energy's bushfire mitigation activities are closely monitored prior to and during the annual bushfire season to ensure they are achieved.

## 2.1 Legislation

This plan is required to meet the objectives and requirements of the NSW Electricity Supply (Safety and Network) Regulation 2008. Table 1 shows the link between the regulation Part 3 section 12 requirements and the Plan's content.

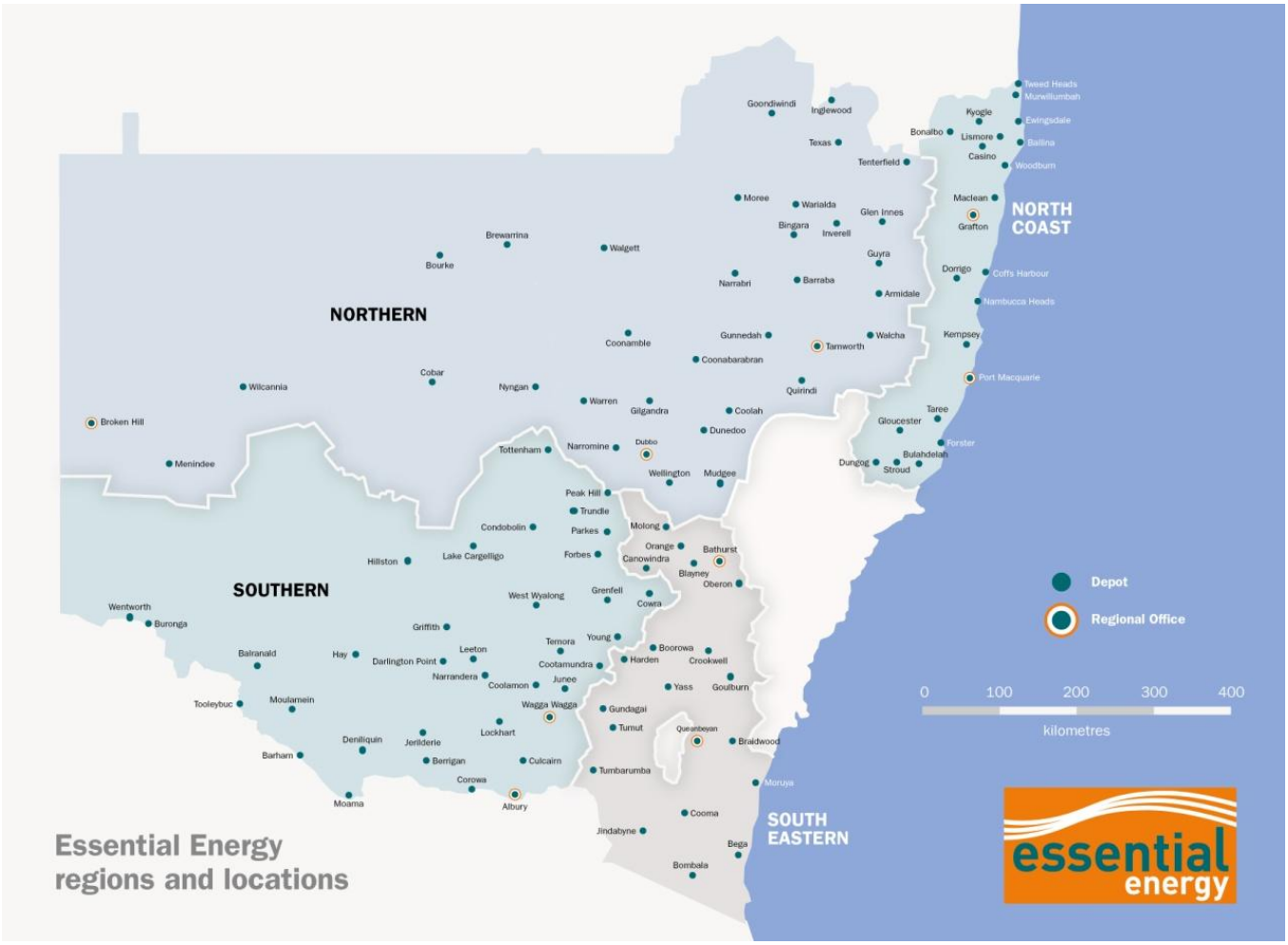
**Table 1 – Regulation Requirements**

| NSW Electricity Supply (Safety & Network) Regulation 2008<br>Part 3 Section 12 | The Plan CEOP8022 |
|---|---|
| The objectives of chapter 4 of a plan as listed in the regulation are:<br>to ensure public safety<br>to establish standards that must be observed when electricity lines operate near vegetation<br>to reduce interruptions to electricity supply that are related to vegetation<br>to minimise the possibility of fire ignition by electricity lines | Section 2 |
| provisions that identify bush fire prone areas and that set out a process for identifying network assets capable of initiating bush fires and a system for ensuring that all such information is kept up-to-date | Section 5.13 |
| provisions that ensure that network assets located in bush fire prone areas and capable of initiating bush fires are inspected, tested and maintained in accordance with the maintenance schedule set out in analysis of hazardous events in the plan | Sections 5.1; 5.2; 5.3; 5.4<br>Sections 6.1; 6.2; 6.3; 6.4; 6.5; 6.6 |
| provision for the review of equipment types or construction methods known in their operation or design to have bush fire ignition potential and a mitigation strategy in relation to their use | Section 5.5; 5.6; 5.7<br>Section 6.3; 6.4<br>Section 8 |
| information relating to rights and duties of the customers with private lines and the dangers of trees coming into contact with those lines | Section 5.3<br>Section 12 |
| provisions that ensure that any private overhead electricity lines located in bush fire prone areas and capable of initiating a bush fire are inspected, tested and maintained in accordance with the maintenance schedule set out in the analysis of hazardous events in the plan, and that standards are enforced by the network operator | Section 5.3<br>Section 12 |
| provision for a complaints recording system in relation to bush fire risk management and provisions that ensure that appropriate investigations and remedial actions are undertaken as required | Section 5.14 |
| provision for liaison and consultation with the NSW Rural Fire Service, New South Wales Fire Brigades, councils for relevant local government areas and any other relevant government departments | Section 5.11<br>Section 7.3<br>Section 11 |
| information for the general public about the fire hazards associated with overhead power lines and vegetation, particularly during storms and conditions of high fire hazard | Section 5.10<br>Section 9 |
| a description of any special procedures or precautions proposed to be taken during conditions of very high fire danger, including work practices by staff, fault location procedures, automatic and manual reclosing of lines and protection settings | Section 7 |
| a description of the reports to be made to the Director-General in relation to the control of the risk of bush fire resulting from the network operator's transmission or distribution system ( "the schedule of reports") | Section 10.2 |
| The schedule of reports must include such reports in relation to the control of the risk of bush fire resulting from the network operator's transmission or distribution system as the Director-General, by notice in writing to the network operator, directs to be included.<br>A network operator must lodge with the Director-General, in accordance with the plan, the reports specified in the schedule of reports. | Report Schedule as specified in the NAMP Chapter 1 Plan section 13.<br>The report pertaining to bushfire performance is;<br>Electricity Network Performance Report (ENPR) |

# 3 SCOPE

This plan covers Essential Energy's network operations within the areas identified on the map below. This includes over 200,000 kilometres of powerlines and 1.4 million power poles that span diverse terrain and climatic conditions from subtropics to Alpine areas and plains.

**Essential Energy Network Areas**




Essential Energy networks include a small number of line assets in the Queensland franchise area.

# 4 POLICY REFERENCE

## 4.1 General

The Bushfire Risk Management Plan is supported by various corporate policies and standards which are located in Essential Energy's electronic Policy Library Database which is accessible to all employees and to contractors upon request.

Essential Energy is required by State Regulations to develop and produce specific risk management plans including a Bushfire Risk Management Plan. The plan must contain the elements prescribed in the relevant regulation. The governing regulations include:

> Electricity Supply (Safety and Network) Regulation 2008 – for NSW networks

> Electrical Safety Regulation 2002 – for Queensland networks.

The following referenced documentation forms a key part of the framework to achieve Essential Energy's objectives in relation to the plan at both corporate and operational levels.

## 4.2 Safety & Risk Management

### 4.2.1 CEOP8029 - Network Management Plan Chapter 1: Network Safety & Reliability

The objective of Essential Energy's Network Safety & Reliability Plan is to establish a framework that supports the provision of safe, reliable and sustainable electricity supplies.

The Plan broadly describes the safety and network management principles within Essential Energy and provides details of important policies and procedures with regard to:

> safe work practices

> the design, construction, operation and maintenance of the electricity network

> planning processes

> asset management

> risk management

> customer technical service standards

> system reliability

> analysis of hazardous events

> the procedures to be implemented in emergency situations

> competency requirements for people working on or near the electricity network

> strategies for ensuring compliance with competency standards

> reporting requirements in relation to maintenance, reliability and safety.

### 4.2.2 CEOP8004 – Network Management Plan Chapter 2: Customer Installation Safety Plan

The purpose of the Customer Installation Safety Plan is to ensure the provision of safe electrical installations for connection to Essential Energy's network.

### 4.2.3 CEOP8005 – Network Management Plan Chapter 3: Public Electrical Safety Awareness Plan

This plan has been prepared in accordance with the NSW Electricity Supply (Safety and Network Management) Regulation 2008 and details Essential Energy's strategies for promoting customer awareness of energy network safety.

### 4.2.4 CEOP8022 – Network Management Plan Chapter 4: Bushfire Risk Management Plan

The Bushfire Risk Management Plan aims to identify and mitigate potential bushfire risks – specifically those that relate to the provision of electricity supplies across Essential Energy's network area.

### 4.2.5 CEOP2111 – Risk: Corporate Risk Management Procedure

The Corporate Risk Management Procedure provides a structured approach to the identification, analysis, evaluation and treatment of risks associated with aspects of Essential Energy's distribution network in a commercial environment. This provides a framework for strategic and operational risk, with bushfire ignition identified as Essential Energy's number one operational risk.

### 4.2.6 CEOP2137 - Electricity Networks Escalation and Recovery Plan

The purpose of this procedure is to:

- illustrate the relationship between this procedure and other incident management documents, e.g. for crisis management
- provide a framework for escalation of incidents by System Operations
- articulate the roles and responsibilities of the various response work groups
- articulate the roles and responsibilities for major incident coordination.

### 4.2.7 CEOP2223 - Major Issues: Management

This document guides Essential Energy's Crisis Management and Recovery (CMR) procedure and provides for:

- the Chief Operating Officer to be responsible for invoking the CMR procedure in consultation with the Chairperson, if possible
- specialist crisis management roles within Essential Energy
- training and crisis response exercises
- identification of stakeholders and management of stakeholder interests
- divisional plans for crisis management
- appropriate management structures for a range of crises circumstances
- responsibilities for efficient recovery after the crisis.

### 4.2.8 CECM1000.77 – HSE Manual: Flora & Fauna

This manual outlines the actions Essential Energy will take to manage the protection of flora and fauna within the framework of its operational requirements.

### 4.2.9 CECM1000.13 – HSE Manual: Bushfire Prevention & Survival

This manual provides guidance for work activity considerations in bushfire prone areas and days of high fire danger. It also provides advice for employees in regard to controlling a fire that may start as a result of work activity and emergency fire procedures.

### 4.2.10 CEOP2062 – System Operations: Manual Reclosing of Overhead lines

This document sets out the steps to be taken by Essential Energy's operational personnel for the manual reclosing of power lines and provides specific advice relating to days of total fire ban.

## 4.3 Asset Management

### 4.3.1 CEOP8018 – Asset Management

The Asset Management Plan links Essential Energy's strategic direction and operational services with annual budgets and forecasts for capital, operating and maintenance expenditure over the planning period.

The plan provides an overview of Essential Energy's network development and provides a high level description of the systematic asset management approach undertaken by Essential Energy. Furthermore, it details the business processes used to ensure resources are aligned with business objectives and explains how the various processes link together to deliver high quality, reliable and safe electricity network services at the lowest possible price.

### 4.3.2 CEOM7097 – Overhead Design Manual

This document outlines the basic requirements for the design of all overhead distribution power lines within Essential Energy's network area to ensure a standardised network.

It provides specific construction requirements for bushfire risk areas including the type of conductors suitable for fire prone areas.

These design requirements apply to new works associated with customer connections (i.e. contestable works) and augmentation or refurbishment required by Essential Energy.

### 4.3.3 CEOM7099 – Overhead Construction Manual Index

This document details construction methods to be used within Essential Energy's network area.

The manual is to be used by Essential Energy employees, Accredited Service Providers, contractors and other personnel engaged by Essential Energy in the construction of Essential Energy's overhead network.

### 4.3.4 CEOP8010 – Electricity Network Asset Inspection

This procedural guideline acknowledges the requirement to carry out asset inspection and assessment activities in accordance with regulatory obligations.

The guideline applies to all activities associated with the ongoing inspection and assessment of Essential Energy's transmission and distribution networks. It covers the required response time to unsafe or unacceptable risk conditions which is reported directly to operational employees for immediate rectification.

### 4.3.5 CEOM7005 - Asset Inspection Manual

This manual documents Essential Energy's criteria for the inspection and assessment of Essential Energy's overhead transmission and distribution network including the above ground components of underground distribution systems.

This criterion will be documented in accordance with CEOP8010 Code of Practice - Electricity Network Asset Inspection and all relevant Statutory and Regulatory obligations.

This manual contains the activities associated with the asset inspection and assessment process, including:

- inspection and assessment of network overhead poles and structures
- visual inspection of overhead lines
- wood pole treatments
- vegetation control defects
- termite identification and treatment
- distribution substation earth integrity checks
- aerial surveillance of overhead lines including fault and emergency patrols
- annual patrol of high risk bush fire prone areas.

### 4.3.6 CEOP8008 – Vegetation Management Plan

Essential Energy recognises the amenity value of trees and other vegetation and their importance to our environment. Vegetation must however, be managed near power lines to maintain safety for individuals and the environment while maintaining the quality and reliability of the electricity supply. This is a challenging task to achieve while maintaining safety requirements, protecting or minimising harm to the environment, preventing damage to property and to satisfy all concerned.

### 4.3.7 CEOP8007 – Mains & Distribution Field Equipment Maintenance

This procedural guideline states Essential Energy's mains and distribution field equipment maintenance management strategy to provide the basis for development of maintenance procedures for each equipment category.

### 4.3.8 CEOP8009 – Distribution Substation and Switchgear Maintenance

The safe and dependable operation of an electricity distribution network hinges on the reliability of equipment such as distribution substations and switchgear and the establishment and maintenance of low impedance earthing systems to ensure protective devices operate properly under fault conditions.

The minimum standards prescribed in this document shall apply to all distribution substation and switchgear apparatus installed on the distribution network.

### 4.3.9 CEOP2245 – Asset Refurbishment Strategy Zone Substations

This document establishes policy and overall strategies for asset management of substation plant especially with regards to replacement or refurbishment considerations.

### 4.3.10 CEOP8011 – Sub-Transmission & Zone Substation: Maintenance

This procedure documents Essential Energy's network maintenance strategy and technical maintenance plans for each asset category within Sub-Transmission and Zone Substations.

### 4.3.11 CEOP8042 – Networks: Asset Identification & Operational Labels

The purpose of this document is to provide a standard format and process for labelling distribution assets (and transmission assets outside of zone substations) for both operational and maintenance purposes. In regard to fire mitigation, it covers the requirements for labelling private line assets.

### 4.3.12 CEOP8019 – Capital Contributions Policy

This document provides guidelines for determining contributions from customers towards the cost of capital works associated with the provision, installation and upgrade of electricity network assets necessary to connect or increase supply to a new or existing Essential Energy network customer.

The policy contains elements relating to the fire ignition reduction strategy in the form of guidelines for conversion of overhead lines to underground and underground incentives via pole rebates to customers.

# 5 PREVENTATIVE STRATEGIES

Essential Energy has developed and implemented various strategies to prevent or minimise the occurrence of fire ignition from its energy network assets. The following topics relate specifically to bushfire mitigation policy, many others exist which may have an indirect relationship.

Strategies with a specific relationship include:

## 5.1 Asset condition monitoring (inspections) - strategy

Condition monitoring of existing network assets consists of both routine and risk based inspection programs. Planning employees are also responsible for monitoring network performance. Inspections are based on cyclic assessments as well as other assessments where there is identified need for additional monitoring. The current regimes include:

- Ground line asset inspections.
- Radial transmission and sub-transmission live line inspections. The additional monitoring is in recognition of the typically higher operating voltages and supplied loads without a backup supply or a limited one.
- Annual pre-summer aerial patrol inspections for specific fire risks associated with both vegetation and asset defects. This provides a relatively quick review of the network state prior to the summer danger period and is typically done by aircraft to provide advantages such as:
  - the ability to scan large sections of network in relatively short timeframes
  - the ability to see assets from a top view perspective which is particularly helpful in identifying the condition of cross arms and pole top components and provides a different point of reference from ground based inspections
  - the ability to detect obvious storm damage to assets or vegetation infringement near assets that may have occurred in between normal ground based inspection cycles, particularly given many rural lines exist in isolated areas where defects may not be noticed by members of the public or employees.
- Other specific equipment inspections including but not limited to: substation earthing systems, pit & pillar, zone substation inspections, reclosers & other protection equipment, feeder studies, etc.

## 5.2 Vegetation management

Vegetation control is managed in accordance with CEOP8008 Vegetation Management Plan and includes assessing and controlling risks associated with vegetation in close proximity to assets. The vegetation clearing work program takes into account requirements of ISSC3 – Guideline for managing vegetation near powerlines (2005).

Essential Energy's network is monitored and assessed by trained Vegetation Officers who are responsible for undertaking risk assessments and scoping work for action by field crews. Work requirements for private properties and sensitive areas are subject to negotiation and consent in relation to powers under the Electricity Supply Act 1995.

While Essential Energy endeavours to work cooperatively with property owners, the Electricity Supply Act 1995 and associated Electricity Supply (Safety and Network Management) Regulation 2008 require Essential Energy to manage the public safety risk in regard to trees near powerlines.

The Act provides for powers to enter properties to maintain clearances and in certain circumstances, costs for such works may be imposed on property owners under a Section 48 notice.

Essential Energy's vegetation works program incorporates frequent inspection and maintenance cycles for urban and rural areas. Fire danger areas are also subject to annual review via pre-summer aerial inspection which identifies vegetation clearance risks.

Essential Energy negotiates the full removal where possible, of potentially hazardous trees or trees requiring frequent maintenance attention. Alternatives - such as line relocation or conversion to covered conductor (CCT) or underground - are considered for heavily treed sections of line where clearing is problematic.

## 5.3 Private lines

Essential Energy plays an active role in monitoring risks associated with private low voltage lines in rural environments, particularly overhead assets on rural farms. The strategy includes:

- inspection and customer notifications of defects on poles and overhead lines
- defect rectification monitoring to ensure follow up by responsible parties
- rectification by Essential Energy as service provider of 'last resort' where no action is initiated in a specified timeframe by owners - in these cases the defects are made safe
- strong encouragement of owners to replace defective overhead assets with underground systems by providing financial incentives for poles replaced with underground cables
- strong encouragement to place proposed new lines underground via requirements outlined to Accredited Service Providers in the Essential Energy Design Guidelines
- vegetation management by Essential Energy in accordance with the Vegetation Management Plan.

## 5.4 Asset maintenance and refurbishment

Essential Energy continues to implement maintenance programs based on industry best practice and emerging new methodologies. Targeted refurbishment programs have also been developed and are continuously reviewed for effectiveness. These programs drive replacement through ongoing monitoring and assessment prior to asset failure.

## 5.5 Network planning

Network planners are required to monitor network performance and configuration to ensure it meets expectations and service demands. Poor performing feeders are highlighted for specific attention and corrective work projects are prepared. Fire risk is a consideration as outlined in the Capital Works Planning Guidelines and Planning database.

## 5.6 Industry research & technology

Essential Energy uses industry research in relation to fire ignitions, including reviewing commercially available alternative materials, network standards, and technologies that enhance either condition monitoring or network function.

Research includes participation in industry research, trials and assessment of major investigations into fires associated with electrical network assets, including events such as the Ash Wednesday and Black Saturday Bush Fires.

Essential Energy is currently evaluating a variety of options including light detection and radar (lidar) technologies to profile vegetation density, micro-drones and other visual tools to gain a birds-eye view of pole top assets, corona and thermal imaging technologies and use of alternative materials such as steel distribution poles and fibreglass cross-arms.

## 5.7 Design and construction standards

For specialist investigations where a network fault cause relates to component failure, a report is re-assigned to the Design and Construction Standards group. Upon completion of investigation and recommended actions for a component failure, analysis is performed by the Standards Assessment Group and where required, design and construction standards are revised.

A risk management approach (in line with CEOP2111 Risk: Corporate Risk Management Procedure) 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, branches or vehicle collision.

## 5.8 Fire start analysis

Fire start investigation, reporting and analysis provides an opportunity to review performance and adopt risk mitigation strategies based on historical events and real life experience. Analysis goes beyond those fire starts relating to Essential Energy network assets and includes other industry investigations or public reports. Essential Energy endeavours to work with other distributors to share information and experience in regard to fire starts where the opportunity exists.

## 5.9 Special operational conditions – high risk conditions

Essential Energy must meet a number of operating conditions that relate to reducing fire risk or to reducing public and employee risk associated with fires. This includes patrol of feeders prior to manual reclosing on days of high fire danger and field procedures for works performed on days of Total Fire Ban.

Essential Energy's policy is to observe recommended work activity limitations during days of high fire danger and undertake work site hazard assessments that take into account risk factors such as potential for fire start, prior to works commencing.

Employees are trained in the use of firefighting equipment in the event the works create a fire, however avoidance or fire hazard mitigation is Essential Energy's preferred strategy. Essential Energy will postpone or cancel work activities with a high potential for fire ignition and planned supply interruption works on days of predicted extreme weather events in areas of high exposure.

This ensures that employees are available for rapid deployment for likely fault and emergency works and customers have an available electricity supply.

## 5.10 Public safety awareness

The development and ongoing review of an unclassified 'Public Safety Awareness Plan' is incorporated into Essential Energy's fire mitigation strategy. This document includes content about the dangers of bushfire associated with vegetation management near power lines and private lines.

## 5.11 State emergency and fire agency relations

Fire management and response agencies are considered key stakeholders in supporting Essential Energy in managing fire risk. Essential Energy participates in preparing and planning for fire seasons and operational event management through the NSW bushfire management structures and Local Government emergency management structures.

Essential Energy has a formal relationship with the State Emergency Management Centre (SEMC) via a sub-group representing utility businesses. This is coordinated by the Energy & Utilities Functional Area Coordinator (EUSFAC). An Energy & Utility Services Plan (EUSPlan) deals with major incident management and coordination is developed by the sub-group in consultation with distributors or their representatives.

Agency relationships enhance fire mitigation strategies in two ways: by contributing to the planning and preparation of coming fire seasons, and when fire events do occur, ensuring the relevant agencies work effectively together to bring events under control and minimise any impact.

## 5.12 Compliance requirements

Essential Energy's fire mitigation strategy takes into consideration the requirements associated with relevant Acts, Regulations, and industry Codes of Practice. Essential Energy pays attention to industry regulations that relate specifically to fire risk mitigation.

Central to this is the preparation and submission of plans to industry regulators as required. Such plans include the *Bushfire Risk Management Plan (NSW)*.

## 5.13 Identification of hazardous bushfire zones

Bushfire prone areas are identified and classified in consultation with the relevant authorities such as fire agencies and local government. These areas are delineated on Essential Energy's geographical information system (Smallworld) and assets associated with fire prone areas are tagged as such in the asset management system (WASP).

Assets fall into fire prone rated areas based on categories of high, buffer or low, however for practical purposes Essential Energy deems assets to be either rated as in a high or low fire risk zone when assigning work priorities relating to risk mitigation. Essential Energy will continue to develop methodologies to further enhance the robustness of the graduated risk localities across NSW as part of its continuous business improvement process. This includes development of risk models using "Phoenix Rapid Fire" in collaboration with NSW RFS and University of Melbourne.

Information is monitored by Essential Energy's bushfire mitigation dashboard which consists of a checklist of pre-summer tasks to ensure it is kept up to date.

## 5.14 Customer enquiries

For general enquiries customers can contact our 24/7 call centre on 132391.

Essential Energy has a commitment for concerns raised by the customers or the general public to affect timely and efficient resolutions.

Our Complaints and Dispute resolution procedure is consistent with Australian Standard AS IOS 10002-2006 (Customer satisfaction – Guidelines for complaints handling in organisations).

A copy of the Essential Energy Complaints and Dispute resolution procedure is available at www.essentialenergy.com.au/content/complaints-and-dispute-resolution-procedure.

CEOH4502.11 How to Manage Complaints, documents the methods of receiving a complaint and logging it in the Contact Management database.

# 6 PREVENTATIVE PROGRAMS OR WORK

The following is a list of work programs that assist with preventing fires as related to each of the preventative strategies mentioned in section 5.

## 6.1 Asset condition monitoring (inspections) – work programs

Essential Energy has implemented the following inspection work:

- Ground line asset inspections carried out cyclically every 4 years with a 6 month buffer period and at other times as required (CEOM7005)
- Radial sub-transmission lines have an auxiliary level 1 groundline inspection between each standard ground line asset inspection cycle. This ensures these assets are visually inspected between regular cycles
- Annual pre-summer aerial inspections of rural networks in the months (February – July) preceding the likely fire danger declaration periods. The six month inspection period provides a suitable timeframe to complete reporting and an opportunity to act on sightings in the field before the commencement of the following fire danger period. Inspections are conducted by aircraft equipped with trained observers and high resolution photography to capture and report risks. These are specific fire mitigation patrols that look at asset and vegetation risks (CEOP2398, CEOM7005). Specific 'No fly zones' are included in these contracted annual inspections and conducted by ground line vehicles instead
- Inspections of other assets and equipment such as low voltage pits and pillars and earthing systems are conducted in conjunction with the routine inspection cycles

- In addition to the routine groundline inspections of radial transmission and sub-transmission lines, a close approach pole top inspection is carried out every 8 to 9 years
- Six monthly condition monitoring of targeted critical distribution equipment
- Annual thermovision program for high risk lines to identify hot connections – more typically applied to urban areas or heavily loaded network segments.
- Inspecting and maintaining required earthing resistance levels.

## 6.2 Vegetation management works programs

Essential Energy has developed work programs to maintain the required clearance space from vegetation.

In determining the locations where work will be required to maintain the clearances specified, Essential Energy will utilise the following inspection programs:

- Ground line vegetation clearance inspections by designated Vegetation Officers. These inspections take place bi-annually in rural areas and annually in urban areas (CEOP8008, CEOP2021)
- Reports from Essential Energy's annual aerial inspections of high risk bushfire prone areas
- Associated audits by Essential Energy employees.

A detailed inspection of each span is conducted by Essential Energy vegetation officers to determine the most effective method of maintaining the required clearance space between vegetation and power lines.

In assessing the most appropriate method, consideration is given to site specifics, including:

- the significance of the site as a natural habitat of endangered species of both flora and fauna
- cost effective options for alternate construction methods
- the significance and public value of the site's aesthetics
- the impact on the tree's amenity and utility value if subjected to pruning versus removal
- opportunity to replace with a more suitable species over time
- the environmental impact of proposed works
- the site's suitability to accept more appropriate species as replacements.

Information gathered during these inspections forms the basis of Essential Energy's vegetation work packaging system and allows:

- appropriate planning and scheduling
- identification and quantification of equipment and accredited personnel required
- funding allocation
- community and customer consultation
- distribution of work packs to field crews for actions specified (trimming, mulching, spraying, removal, etc.)
- those works not completed within the scheduled time to be highlighted in defect backlog reporting.

As well as managing the clearance space, Essential Energy also endeavours to identify 'hazard trees' as outlined in the vegetation plan. These maybe outside the clearance space but still have potential to fall and impact assets. Where hazard trees have been identified they will be subject to the same treatment as trees infringing clearances - that is generally trimmed or removed.

## 6.3 Other engineering solutions and new technologies

A risk management approach to the development of network standards has seen various changes to them to reduce the risk of bushfires. Examples of these changes include the use of underground cable, covered conductor (CCT) for overhead high voltage and promoting underground or insulated low voltage lines in rural areas 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.

Essential Energy's construction standards take into account improving insulation levels and clearances by specifying particular materials, assemblies and components.

## 6.4 Asset replacement/refurbishment programs

Essential Energy has implemented a number of asset refurbishment programs aimed at replacing assets before they reach failure or 'end of life'. This includes, but is not limited to:

- air break switch (ABS) replacement program – replaced with fully enclosed gas switches. This improves insulation levels, reduces the likelihood of ignitions resulting from bird nesting, and contact points for animals
- distribution substation & fuse site refurbishment program – this is an assessment and prioritised refurbishment of targeted substation sites to enhance safety, reliability, and construction standards. Work includes replacing porcelain expulsion drop out fuses with polymer types complete with sparkless fuse elements, replacing bare conductor bridging with insulated cable (CCT), insulating HV bushing with shrouds, ensuring high voltage dropper cables are supported, and replacement of lightning arrestors with new polymer types
- line refurbishment – which includes renewing poles and conductors where required as well as associated pole top components such as tie wires, insulators and cross-arms
- an extensive condemned pole replacement and staking program
- identifying 'at risk' low voltage lines on private rural properties and replacing with underground or insulated systems. This includes offering financial incentives to owners who choose to replace overhead private lines with underground.

## 6.5 Remedial maintenance programs

Remedial maintenance work is determined predominantly through Essential Energy's inspection processes. This maintenance work is the rectification of the defects found, reported, and captured in our asset management system. Defects are reported by:

- groundline asset inspection regimes
- vegetation officers
- Essential Energy personnel/contractors utilising a Maintenance Work Log form.
- the general public
- annual pre-summer aerial patrols of high risk areas.

The repair priority adopted by Essential Energy for identified defects/faults is:

- **Urgent risk**: rectification required within 14 days. The defect is assessed as having the potential to affect continuity of supply, safety or pose a significant environmental risk. This defect requires rectification within fourteen (14) days. Urgent risk defects are closely monitored and progress reports issued daily.
- Unsafe or unacceptable risk conditions are to be reported directly to operational employees for immediate rectification. The Asset Inspector must remain on site (to ensure public safety) until repair crews arrive to conduct repairs. Defects which result in unscheduled supply interruptions or are rectified on the spot should be recorded as 'Emergency' defects in the asset management system

- **Risk**: rectification required within six months. The defect has the potential to affect system reliability and \ or safety under adverse conditions if left in its present condition.
- **General maintenance:** rectification required within two years. These defects do not pose a significant short term threat to system reliability or safety but if not rectified will contribute to a gradual deterioration of asset condition and reliability. These types of defects are generally issued for rectification in conjunction with other work on the feeder.

System defects/faults are recorded in Essential Energy's Asset Management System with a repair priority reflecting the associated risk condition.

## 6.6 Pre-summer inspection programs

Prior to each summer season, either aerial or groundline bushfire inspections are carried out as a minimum, on powerlines located in bushfire prone areas.

Refer to sections 5.1 *Asset Condition Monitoring – Strategy* and *6.1 Asset Condition Monitoring – Work programs for further details in regard to pre-summer inspections.*

# 7 OPERATIONAL REQUIREMENTS FOR TOTAL FIRE BAN AND FIRE EMERGENCIES

## 7.1 Special procedures and precautions

Essential Energy has developed the following work practices to help ensure special procedures and precautions are taken by employees and accredited service providers, to minimise the risk of bushfire ignition by network assets or work practices during conditions of extreme fire danger.

- During periods of Total Fire Ban power supply restoration is carried out in fire prone areas after a line patrol has been undertaken. This is done in reference to System Operations: Manual Reclosing of Overhead Lines (CEOP2062).
- A risk assessment approach is used to determine whether to disable the automatic line reclosing function, taking into account the industry guideline *ISSC33-Guideline for network configuration during high bushfire risk days*.
- The installation of sensitive earth fault protection on rural feeders. This type of protection operates 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 Essential Energy code of practice covers work practices for the use of plant, tools and equipment during periods of high fire danger and Total Fire Ban.
- Extreme weather may cause the cancellation of planned work programs to ensure adequate employees remain on standby for rapid emergency response (which is often required during extreme weather conditions).

A number of critical installations are connected to Essential Energy's network that have priority during power restoration efforts. These include:

- hospitals
- premises with life support systems, including aged-care and domestic
- water supply pumping stations and boosters
- sewerage pumping stations and boosters
- communication facilities.

Specific listings and locations of such sites are kept in operational control rooms and reviewed annually. This information changes frequently and Essential Energy relies on customers or agencies for such information.

Essential Energy also maintains incident management manuals and policies for emergencies such as wildfire events. These include:

- CEOP2137: Electricity Networks Escalation & Recovery Plan
- CEOP2143: System: Load Shed and System Restart Overarching.

## 7.2 Emergency cutting

Emergency tree cutting works may be required on days of Total Fire Ban where essential repairs or maintenance is required for the continuation or restoration of electricity supply to customers. Such activities can be undertaken provided:

- there is no reasonable alternative method available
- all reasonable steps are taken to prevent the escape of fire, sparks, incandescent or burning material from the activity undertaken.

For example, such works may be driven by strong winds causing trees or branches to fall or create a danger near power lines or may be required due to the danger a burning or burnt tree may present during or after a fire event has occurred.

## 7.3 Communication and liaison actions

Essential Energy has a working relationship with relevant emergency agencies through participation in the Energy & Utility Services Plan (EUSPlan) and membership of the *District Bushfire Management Committees*.

During the lead up to the fire danger period and after the declaration, Essential Energy's bushfire preparedness is monitored in order to manage any associated risks.

Essential Energy also liaises with Queensland authorities regarding network assets in that state.

**Total Fire Ban day notifications**

Essential Energy uses various communication tools to ensure employees are aware of forecast adverse weather conditions and/or a declared day of Total Fire Ban. These include:

- listening to regional ABC radio and local radio stations
- accessing the following web sites:
  - for NSW:
  - for Queensland:
- 2-way radio broadcasts
- observing specific signage erected at Depots
- mobile phone SMS messages sent by the Operations centre
- internal email notifications.

Essential Energy managers and supervisors can monitor existing fire events via Essential Energy's CENIC system or weather portal, which is linked to the Rural Fire Services information service. This also provides information about current network supply interruptions.

## 7.4 Audit program prior to the fire season

Essential Energy engages aerial survey companies to inspect the network in all rural areas prior to the fire danger period to audit the network for damaged assets or vegetation encroachments that are likely to represent a fire ignition risk. These are categorised and acted on in a timeframe according to the risk allocation. The reported sightings include high resolution photography, mapping and GPS technologies.

These service providers are also deployed at other times as required to quickly check large portions of network if the need arises.

Essential Energy utilises an internal bushfire mitigation dashboard for the purposes of assessing the readiness of the network prior to the declaration period. The company's bushfire preparedness is continually assessed and monitored by Essential Energy's two tiered bushfire mitigation management structure.

Essential Energy employees are instructed to report any defects that present a potential fire ignition source as part of their daily duties. Urgent risk defects are reported to an employee's supervisor and actioned with due regard to the risk factors present. A maintenance work log (MWL) is completed for defects found and are entered into the asset management system with pre-defined risk ratings.

The public are encouraged to report potential fire hazards as part of Essential Energy's safety and bushfire awareness campaigns.

### 7.5 Emergency asset maintenance and replacement

Emergency asset maintenance or replacement should only be undertaken after an on-site hazard identification and risk assessment and control (HIRAC) process has been carried out. Defects can be classified as 'urgent risk' with expectations of immediate corrective actions typically required within 14 days.

### 7.6 Disconnection actions

Essential Energy undertakes a risk assessment prior to any disconnection of any electrical supply during times of bushfire. Risk to water supplies to fight bushfires is weighed up against environmental factors, known defects and short to medium term consequences with regard to restoration of supply.

Such decisions are made in consultation with the relevant fire agencies and other emergency or essential services groups. It is not unusual for a request to disconnect supply to come from a Bushfire Control Centre.

## 8 FIRE START INVESTIGATION AND ANALYSIS

Essential 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.

Essential Energy uses two systems for incident or failure analysis – the TotalSAFE incident reporting system and the Outage Management System. Data is collated regarding the type of network event that has occurred and causal information. Analysis of these systems is done periodically and reported through the Bushfire Mitigation Working Group to the Bushfire Assurance Panel.

The process for Essential Energy employees reporting specifically of fire events related to the network assets begins with a TotalSAFE log, and includes an integrated electronic field report (Network Fire Report).

The purpose of this document is to report all fires attended by Essential Energy employees where Essential Energy assets have been damaged and/or are the alleged cause of ignition.

Once the incident report has been created and the responsible officer assigned for investigation, it is automatically sent via email to the assigned officer and when required, to Regional Management, Infrastructure Strategy and Essential Energy's Risk & Insurance business units.

The type of information gathered includes:

> incident details including background and locality information

> investigation/comments

> cause(s) of the incident and network related information.

And if required:

> corrective action proposed

> preventative action proposed.

A responsible officer/manager may be assigned to implement the proposed action after which, the incident report is signed off by the Approver.

Actions that are assigned but not implemented by the due date, are automatically escalated to the next level of management. They will continue to be escalated until the work is completed or until it reaches the Chief Operating Officer.

The TotalSAFE database allows reports, digital photographs and other relevant information to be attached, with a unique number assigned to it and a link to the incident details.

# 9 PUBLIC SAFETY AWARENESS

Essential Energy provides information to the general public regarding bushfire mitigation efforts. This includes:

- vegetation clearances and risks relating to trees in close proximity to lines and planting of unsuitable species
- providing web based copies of the Bushfire Mitigation & Vegetation Management Plans
- bushfire safety messages
- information relating to pre-summer Aerial Patrol activities
- private lines responsibilities.

Essential 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 public awareness of hazards prior to and during the high fire danger period.

The bush fire awareness campaign forms part of Essential Energy's Network Management Plan Chapter 3: Public Electrical Safety Awareness Plan (CEOP8005). The purpose of which is to raise the public awareness of the hazards associated with electricity networks and in particular, the fire ignition hazards associated with overhead power lines.

The Plan provides details of strategies used to raise public awareness of the numerous hazards that result from the interaction of people and electricity supply network assets - and to provide simple and effective ways to minimise possible risk exposure.

Essential Energy has also developed a Vegetation Management Plan which aims to develop increased customer awareness of safety in relation to the planting and control of vegetation near power lines.

Essential Energy's awareness program includes:

- television/radio advertisements
- social media
- planting guidelines
- posters relating to vegetation management
- newspaper articles and press releases
- liaison with landowners/occupiers, state government bodies, Bushfire Management Committees, and community based organisations
- unclassified information available on Essential Energy's Website
- defective private lines, direct customer contact
- direct customer contact.

# 10 PLAN PERFORMANCE

Essential Energy uses a Dashboard system for corporate reporting at a regional level and above.

The Dashboards Key Performance Indicators (KPI's) include measuring activities associated with bushfire mitigation strategies such as line maintenance, vegetation management, and inspections. Components of the Dashboard are:

- The Strategy Map which translates Essential Energy's strategy into summarised objectives
- Objectives are translated into measures/KPI's that drive behaviour and monitor performance
- Targets are set for each measure to help reach objectives and stretch performance to new levels
- Initiatives are undertaken to drive performance and meet targets and objectives.
- Targets for each KPI are reported monthly and the results are indicated on the corporate Dashboard reports to divisional business units.

A range of reporting systems are available including PowerOn Fusion, TotalSAFE, Cognos, PeopleSoft and the asset management system (WASP), and are utilised by the responsible Managers. These provide reports on activities relating to bushfire mitigation and prevention activities such as maintenance, inspections, and incidents.

Fire starts and asset failures are reported through, and results monitored in, the TotalSAFE Incident database.

Essential Energy has two designated cross divisional groups that review the plan and its associated activities. These two groups are the Bushfire Assurance Panel and a Bushfire Mitigation Working group which meet regularly.

## 10.1 Plan review and audit

Essential Energy's Bush Fire Risk Management Plan is reviewed annually. The review is conducted in consideration of organisational changes, fire mitigation performance, new initiatives that have been implemented and also take into regard any major incidents such as the 2009 Black Saturday fires in Victoria. The annual revision is typically initiated before October of each calendar year.

This Plan is audited by Essential Energy's internal audit department and may be audited by an independently appointed auditor and/or the Director-General.

## 10.2 Reporting

Essential Energy uses a suite of internal reports to monitor its own fire mitigation activity performance such as line maintenance and vegetation management reports. A scorecard system that uses 'Dashboard' key indicators and a Bushfire Mitigation Index forms part of the regime. External reports regarding the control of bushfire risk and the general performance of the network are produced annually to the regulator. An *Annual Network Performance Report* is submitted to the office of the Director-General and includes information on bushfire starts, maintenance, reliability and safety aspects of the operation of Essential Energy's transmission and distribution systems.

# 11 LGA & FIRE AGENCIES RELATIONSHIPS

Essential Energy liaises with, consults and provides access to network assets when requested by the Director-General, fire agencies or other relevant state or local government emergency agencies regarding bushfire related issues. ***Attachment B1*** indicates the statutory relationships.

Where requested, Essential Energy will:

- provide representation on NSW Bush Fire Management Committees. A full listing of the committee structure in NSW is attached - ***Refer to Attachment B2***
- participate in local and regional emergency plans, their preparation and any operative exercises or testing of such plans where requested to do so
- provide liaison officers for Fire Control Management, Incident Control Centres, or the State Emergency Operations Centre when directed
- provide representation on Local or District Emergency Management Committees across the state.

Essential Energy takes into consideration fire weather warnings reported by Rural Fire Services which are based on the NSW RFS Fire Areas - **Refer to *Attachment B3*.**

Essential Energy monitors fire weather and danger ratings via the Bureau of Meteorology (BoM) geographical gridded weather mapping services.

Rural Fire Services provide statistical fire event information to Essential Energy as requested. This information forms part of Essential Energy's analysis of fire occurrence where network assets may be involved.

# 12 PRIVATE LOW VOLTAGE LINES

Essential Energy's management of private lines policy encourages property owners to place existing overhead powerlines underground, as substantial defects are identified.

The policy for the management of private lines is described in CEOP2339 Private Poles: Management Plan which is currently in draft format.

Depending on a particular set of criteria, which will be described in the plan, Essential Energy may inspect and maintain or inspect only and advise customers of defects needing attention. In the interest of public safety, Essential Energy will use its' best endeavours to notify customers of defects and if not repaired within specific timeframes will make the installation safe.

**Underground service lines in rural areas**

Some rural areas are considered at higher risk than others due to various factors such as climate zones, historical trends and fuel loads. Essential Energy's preference is for new service lines in such rural areas to be installed underground to reduce public risk exposure. This applies to all rural areas since:

- conditions in rural areas can vary seasonally and therefore risk profiles can change making application to specific areas difficult and provides a consistent understanding by ASP's
- generally there is negligible cost difference between overhead and underground low voltage service installations in greenfield site situations and many ASP's are already adopting this approach
- rural areas historically carry a higher risk of wildfires than urban areas yet undergrounding of electrical services in new urban estates is already mandated with councils
- alternatives to underground may be granted in special circumstances where hardship issues may apply, subject to risk assessment.

# 13 MANAGEMENT STRUCTURES & TRAINING

Essential Energy has in place structured management teams with specific responsibilities for various components of the Plan.

These include responsibility allocations relating to fire mitigation as follows:

**Chief Engineer**

> Network Maintenance Manager - Maintenance & refurbishment strategy, Network risk management, Fire mitigation plan development & submission, License & Regulatory conditions, planning network growth and replacement, construction standards

**Network Development**

> Vegetation and asset inspection

**Network Operations**

> Regional Managers – Line maintenance (asset repair); fault & emergency response, stakeholder liaison, works coordination, line crew management. Design services, work scheduling, logistics supply

**Finance and risk**

> Corporate risk strategy, insurance and credit.

While the Bushfire Mitigation Plan and related policies are the responsibility of the Chief Engineer, the responsibility for operational implementation rests with the Operation's Management team and Network Development Group at various locations. **Refer to attachment A.**

In addition to the senior organisational management structure, Essential Energy has adopted a two tier bushfire mitigation structure to regularly review bushfire mitigation matters.

This includes a specific Bushfire Assurance Panel consisting of Senior Managers from various divisions, which report directly to the Executive Management team. Essential Energy has also established a Bushfire Mitigation Working Group which is made up of operational level representatives with a focus on fire mitigation critical activities and projects.

The structure of the **Bushfire Assurance Panel (tier 1)** includes representation of senior managers and the chairperson of the Bushfire Risk Working Group.

This panel reports through to the Senior Management Team of Essential Energy as required on bushfire mitigation matters.

The structure of the **Bushfire Risk Working Group (tier 2)** includes representation from various business areas such as:

> asset inspection and vegetation management
> aerial patrol coordination
> network risk strategy
> maintenance and refurbishment strategy
> insurance, claims & liability
> regional management
> network asset management systems
> other members are co-opted as required.

## 13.1 Field based resources

***Depot Senior Resource / Resource / Crew Supervisors*** – are responsible for local field based overhead and underground line construction and maintenance crews and ensuring asset defects are attended to.

***Asset Operations Coordinators and Asset Inspectors*** – are responsible for groundline testing, assessing, treatment of poles, overhead visual inspections of pole tops and lines and reporting on the condition of Essential Energy's transmission and distribution network. Asset Inspectors are also responsible for minor on-site defect rectification and data capture of asset details.

***Vegetation Operations Coordinators* and *Vegetation Officers*** – are responsible for issues regarding power line vegetation control within an assigned regional area. This includes overseeing and auditing vegetation control activities such as customer consent and negotiations, contract supervision, identification of hazardous trees, clearing vegetation defects, environmental management of vegetation near lines and auditing clearances.

***Contracted resources*** are also employed for general **tree clearing** activities and for **annual aerial inspection**. Aerial inspection is conducted prior to the fire declaration period and aims to identify damage to the network or vegetation encroachments that may have occurred between routine ground inspections by Asset Inspectors. This also provides an audit of the quality of the contract clearing works in rural zones.

## 13.2 Training

Essential Energy employees receive a thorough induction and training to ensure they remain safe and foster public safety. This training includes emergency management, the Electrical Safety Rules and the use of firefighting equipment. Essential Energy also requires:

- all field based operational employees to successfully complete the NSW Rural Fire Service Bushfire Awareness Course as part of their role specific induction
- the successful completion of the NSW Rural Fire Service Bushfire Awareness Refresher Training within a three year refresher training cycle by field based operational employees who may be assigned electricity distribution network infrastructure construction, maintenance or remediation work within bushfire areas under the control of the NSWRFS.

Anyone entering an Essential Energy work site must complete a Hazard Identification & Risk Assessment Controls (HIRAC) process before works commence. This process includes awareness of actions to be carried out on days of Total Fire Ban.

### 13.2.1 Asset inspection training & competencies

Asset Inspectors are required to meet the requirements of CEOP2371 Training & Authorisation: Asset Inspectors, which includes compliance and competency audits and refresher training requirements.

### 13.2.2 Vegetation training & competencies

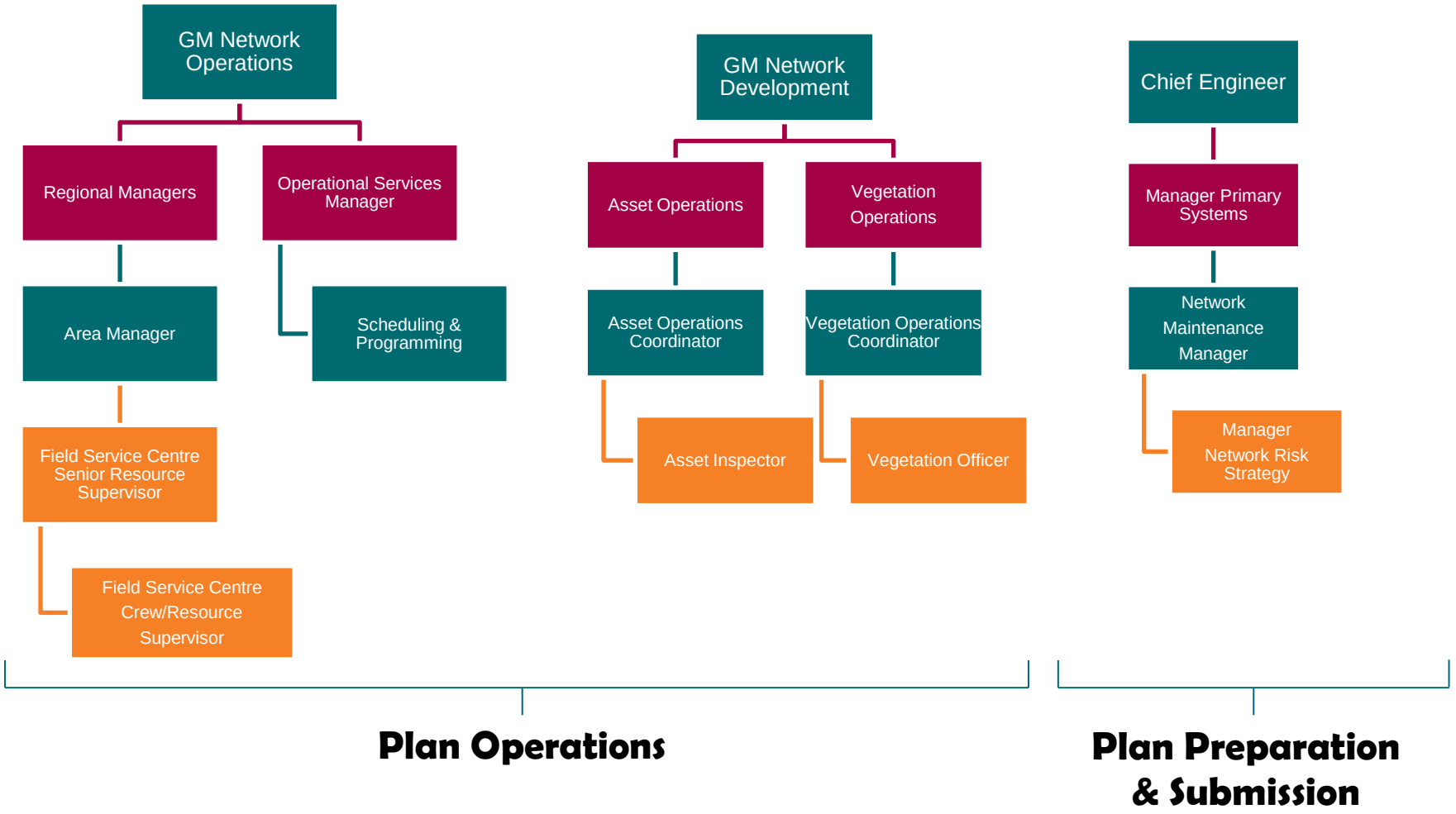
Specialised training requirements apply to all contracted vegetation management crew members engaged to work for Essential Energy in regard to vegetation clearing activities.

These requirements are specified in the vegetation management plan training matrix and form part of the employment contract.

Essential Energy Vegetation Officers are required to meet the qualification and experience standards outlined in the position description (CBPD 0050 2010) and preference is given to candidates with arborist qualifications.

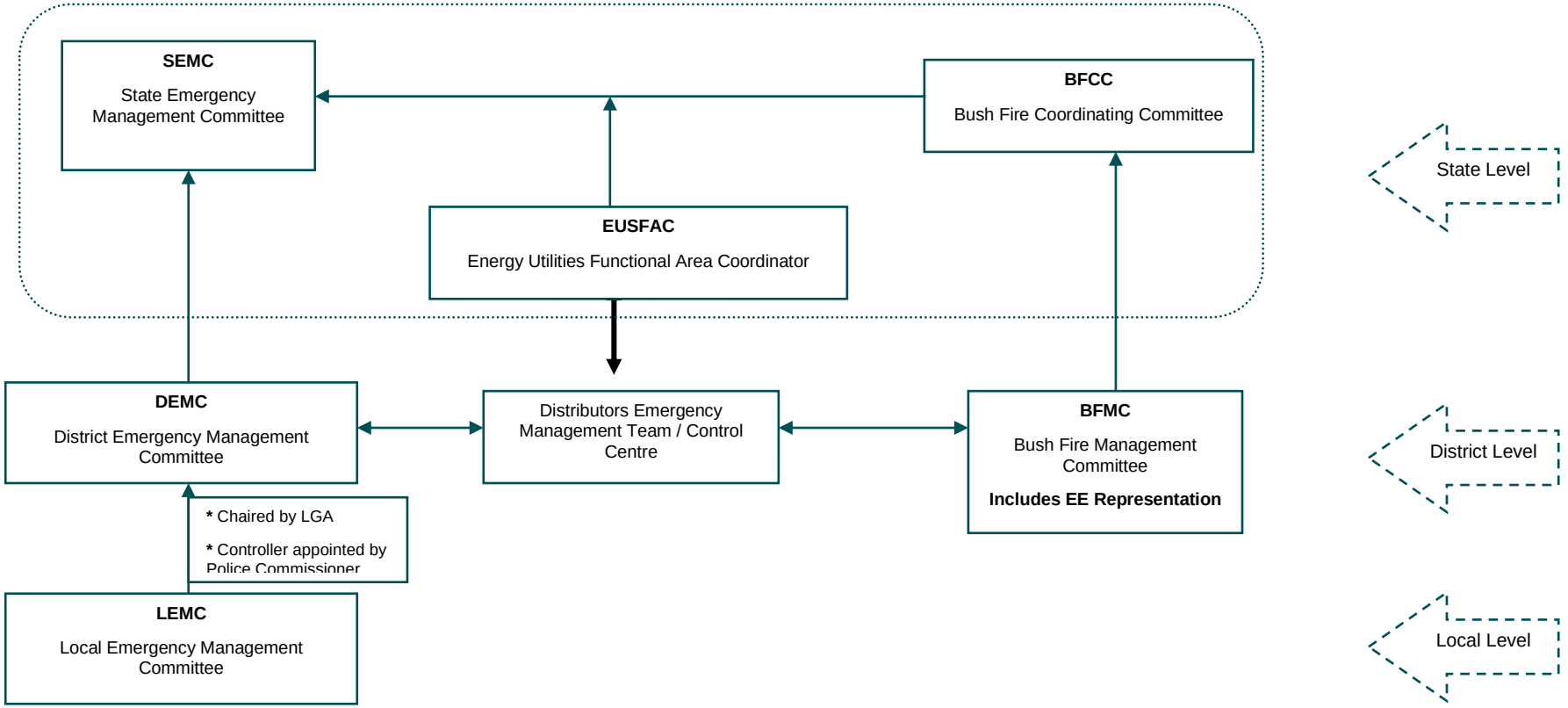
# 14 ATTACHMENTS

## 14.1 Attachment A - Organisation structure with plan responsibility



# 15 SUMMARY OF CONTRACTS & APPROVAL

## 15.1 Attachment B1 – Agency Relationships (State & District Emergency Hierarchy)



## 15.2 Attachment B2 – Bush fire management Committees (RFS Jurisdictions) & LGA's

| LGA | Bush Fire Management Committees | | LGA | Bush Fire Management Committees |
|---|---|---|---|---|
| Bankstown, Hurstville | Bankstown/Hurstville | | Lithgow | Lithgow |
| Bourke, Brewarrina | Barwon/Darling | | Gunnedah, Liverpool Plains, Upper Hunter | Liverpool Range |
| The Hills Shire | Baulkham Hills | | Lord Howe Island | Lord Howe |
| Bega Valley Shire | Bega Valley | | Dungog, Port Stephens | Lower Hunter |
| Bland, Temora | Bland-Temora | | Kempsey, Nambucca | Lower North Coast |
| Blue Mountains City | Blue Mountains | | Balranald, Wentworth | Lower Western Zone |
| Bombala | Bombala | | Camden, Campbelltown, Liverpool | Macarthur |
| Blayney, Cabonne, Cowra, Orange | Canobolas Zone | | Manly, Mosman, North Sydney | Manly-Mosman-North Sydney |
| Carrathool Shire | Carrathool | | Forbes, Lachlan, Parkes, Weddin | Mid Lachlan Valley |
| Gilgandra, Warrumbungle | Castlereagh | | Conargo, Deniliquin, Jerilderie, Murray, Wakool | Mid Murray Zone |
| Central Darling | Central Darling | | Bellingen, Coffs Harbour | Mid North Coast |
| Bathurst Regional, Oberon | Chifley | | Griffith, Leeton, Murrumbidgee, Narrandera | Murrumbidgee Irrigation Area |
| Clarence Valley | Clarence Valley | | Muswellbrook Shire | Muswellbrook |
| Cobar Shire | Cobar | | Moree Plains, Narrabri | Narrabri/Moree |
| Corowa, Berrigan | Corowa, Berrigan | | Armidale, Dumaresq, Guyra, Uralla, Walcha | New England |
| Mid Western Regional | Cudgegong | | Newcastle City | Newcastle |
| Blacktown, Fairfield, Penrith | Cumberland Zone | | Bogan, Coonamble, Walgett, Warren | North West |
| Eurobodalla Shire | Eurobodalla | | Kyogle, Lismore, Richmond Valley | Northern Rivers |
| Ballina, Byron, Tweed | Far North Coast | | Glen Innes, Severn, Inverell, Tenterfield | Northern Tablelands |
| Gloucester Shire | Gloucester | | Dubbo, Narromine, Wellington | Orana |
| Gosford City | Gosford | | Coolamon, Junee, Lockhart, Urana, Wagga Wagga | Riverina |

| LGA | Bush Fire Management Committees | | LGA | Bush Fire Management Committees |
|---|---|---|---|---|
| Great Lakes | Great Lakes | | Gundagai, Tumbarumba, Tumut | Riverina Highlands |
| Greater Taree City | Greater Taree | | Shoalhaven City | Shoalhaven |
| Gwydir | Gwydir | | Singleton Shire | Singleton |
| Hastings | Hastings | | Cooma-Monaro, Snowy River | Snowy-Monaro |
| Hawkesbury City | Hawkesbury | | Boorowa, Cootamundra, Harden, Young | South West Slopes Zone |
| Hay Shire | Hay | | Goulburn-Mulwaree, Upper Lachlan, Yass Valley | Southern Tablelands |
| Hornsby, Ku-ring-gai | Hornsby/Ku-ring-gai | | Sutherland | Sutherland |
| Albury, Greater Hume Shire | Hume Zone | | Tamworth Regional | Tamworth |
| Cessnock, Maitland | Hunter | | Pittwater, Warringah | Warringah/Pittwater |
| Hunters Hill, Lane Cove, Ryde, Willoughby | Hunters Hill, Lane Cove, Ryde, Willoughby | | Unincorporated Area | West Darling |
| Kiama, Shellharbour, Wollongong | Illawarra | | Wingecarribee Shire | Wingecarribee |
| Palerang, Queanbeyan | Lake George | | Wollondilly Shire | Wollondilly |
| Lake Macquarie City | Lake Macquarie | | Wyong Shire | Wyong |

## 15.3 Attachment B3 – NSW Fire Areas (for fire weather warnings & declarations)

# NSW FIRE AREAS + LOCAL GOVERNMENT AREAS

**1. FAR NORTH COAST**
Ballina
Byron
Clarence Valley
Kyogle
Lismore
Richmond Valley
Tweed

**2. NORTH COAST**
Bellingen
Coffs Harbour
Gloucester
Great Lakes
Greater Taree
Hastings
Kempsey
Nambucca

**3. GREATER HUNTER**
Cessnock
Dungog
Lake Macquarie
Maitland
Muswellbrook
Newcastle
Port Stephens
Singleton
Upper Hunter

**4. GREATER SYDNEY REGION**
All Sydney Metropolitan Councils
Plus Gosford, Blue Mountains,
Hawkesbury and Wyong

**5. ILLAWARRA/SHOALHAVEN**
Kiama
Shellharbour
Shoalhaven
Wingecarribee
Wollondilly
Wollongong

**6. FAR SOUTH COAST**
Bega Valley
Eurobodalla

**7. MONARO ALPINE**
Bombala
Cooma Monaro
Snowy River

**8. ACT**
Australian Capital Territory

**9. SOUTHERN RANGES**
Eastern Capital Regional Council
Greater Argyle
Greater Queanbeyan
Upper Lachian
Yass Valley

**10. CENTRAL RANGES**
Bathurst Regional
Blayney
Cabonne
Cowra
Lithgow
Mid Western Regional
Oberon
Orange
Wellington

**11. NEW ENGLAND**
Armidale Dumaresq
Glen Innes
Guyra
Severn
Tenterfield
Uralla
Walcha

**12. NORTHERN SLOPES**
Gunnedah
Gwydir
Inverell
Liverpool Plains
Tamworth Regional

**13. NORTH WESTERN**
Coolah
Coonabarabran
Moree Plains
Narrabri
Walgett

**14. UPPER CENTRAL WEST PLAINS**
Bogan
Coonamble
Gilgandra
Warren

**15. LOWER CENTRAL WEST PLAINS**
Bland
Dubbo
Forbes
Lachlan
Narromine
Parkes
Temora
Weddin

**16. SOUTHERN SLOPES**
Boorowa
Cootamundra
Gundagai
Harden
Tumbarumba
Tumut
Young

**17. EASTERN RIVERINA**
Albury
Coolamon
Greater Hume
Junee
Lockhart
Wagga Wagga

**18. SOUTHERN RIVERINA**
Berrigan
Conargo
Corowa
Deniliquin
Jerilderie
Murray
Urana
Wakool

**19. NORTHERN RIVERINA**
Carrathool
Griffith
Hay
Leeton
Murrumbidgee
Narrandera

**20. SOUTH WESTERN**
Balranald
Wentworth

**21. FAR WESTERN**
Bourke
Brewarrina
Broken Hill
Central Daring
Cobar
Unincorporated NSW

# 16 SUMMARY OF CONTACTS & APPROVAL

## Essential Energy

**Bushfire Risk Mitigation Plan - contacts**

| | |
|---|---|
| **Office Address:** | 8 Buller St, Port Macquarie, NSW 2444 |
| **Telephone:** | 13 23 91 |

| | |
|---|---|
| **Person Responsible for Plan Preparation:** | Neil Chapman |
| **Position:** | Network Maintenance Manager |
| **Office Address:** | 8 Buller St, Port Macquarie, NSW 2444 |
| **Postal Address:** | PO Box 5730, Port Macquarie, NSW 2444 |
| **Telephone:** | (02) 6589 8212 |

| | |
|---|---|
| **Person(s) Responsible for Plan Implementation:** | Chief Operating Officer |
| **Office Address:** | 8 Buller St, Port Macquarie, NSW 2444 |
| **Postal Address:** | PO Box 5730, Port Macquarie, NSW 2444 |
| **Telephone:** | 02 6589 8702 |

| | |
|---|---|
| **Emergency Contact Number for Immediate Action:** | 24 hour operations desk Queanbeyan<br>Ph:13 20 80<br>Ph: 02 6122 3006 |

| **Approved:** |
|---|
| Brian Glawson |
| Manager Primary Systems |
| Signature: |

# 17 REFERENCES

CECM1000 – HSE Manual Sections

CECM1000.13 – HSE Manual: Bushfire Prevention & Survival

CECM1000.77 – HSE Manual: Flora & Fauna

CEOH4502.11 – How to Manage Complaints

CEOM7005 – Asset Inspection Manual

CEOM7097 – Overhead Design Manual

CEOM7099 – Overhead Construction Manual

CEOP2062 – System Operations: Manual Reclosing of Overhead Lines

CEOP2111 – Risk: Corporate Risk Management Procedure

CEOP2137 – Electrical Networks Escalation and Recovery Plan

CEOP2223 – Major Issues Management

CEOP2245 – Asset Refurbishment Strategy: Zone Substations

CEOP8004 – Network Management Plan Chapter 2 Customer Installation Safety

CEOP8005 – Network Management Plan Chapter 3 Public Electrical Safety Awareness

CEOP8007 – Mains & Distribution: Field Equipment Maintenance

CEOP8008 – Vegetation Management Plan

CEOP8009 – Maintenance Management: Distribution Substation & Switchgear

CEOP8010 – Electricity Network: Asset Inspection

CEOP8011 – Sub-Transmission & Zone Substation: Maintenance

CEOP8018 – Networks: Asset Management Plan

CEOP8019 – Capital Contributions Policy

CEOP8029 – Network Management Plan Chapter 1 Safety & Reliability

CEOP8042 – Networks: Asset Identification & Operational Labels

Essential Energy's Asset Management System (WASP)

Essential Energy's Training Database

Essential Energy's Policy Library Database

Essential Energy's TotalSAFE Database

Essential Energy website www.essentialenergy.com.au

ISSC33 Guideline for network configuration during high bushfire risk days

NSW Electricity Supply Act 1995

NSW Electricity Supply (Safety and Network Management) Regulation 2008

NSW Rural Fires Act 1997

## 18 REVISIONS

| Issue Number | Section | Details of Changes in this Revision |
|---|---|---|
| 3 | All | References updated<br>Changes throughout document |
| 4 | All | References updated<br>Minor changes throughout document |
| 5 | All | References updated<br>Minor changes throughout document |
| 6 | All | Major review considering Black Saturday Fires 2009 in Victoria and changes throughout document to most sections |
| 7 | All | References, template & logo change in line with Essential Energy branding. |
| 8 | 7.1 | Additional information added to 2nd dot point in this section – regarding industry guidelines |
| | 16 | ISSC Guideline added to references |
| 9 | All | Consultation, Feedback and Review added (Sect.1.1 & 1.2)<br>All references to the Victorian franchise areas removed.<br>Essential Energy map updated to 5 region structure (Sect. 3)<br>EE Preference for Underground of new private service lines in rural areas added (Sect. 12).<br>EE structure changes - Executive GM references removed. etc. (attachment 14.1).<br>Training references updated as per reviewer comments (Sect. 13.2). |
| 10 | All | Change to template |
| 11 | 3, 14 | Section 1 – Telephone numbers changed to 132391<br>Section 3 - Network map updated to 4 region model<br>Section 4.2.8 – Deleted, was Recovery Action Plans by region, now covered in Section 4.2.6<br>Section 4.2.12 – Deleted, was Customer Complaint Handling, now covered in Section 5.14<br>Section 4.4 – Deleted, Document Management<br>Section 5.2 – Corridor reclamation program reference deleted<br>Section 5.6 – Was Industry research. Technology added<br>Section 5.13 – Phoenix Rapid Fire reference added<br>Section 5.14 – Customer enquiries and complaints reworded<br>Section 7.1 – References to Recovery Action Plans deleted<br>Section 14 - Organisational chart revised.<br>Section 17 – References list revised |